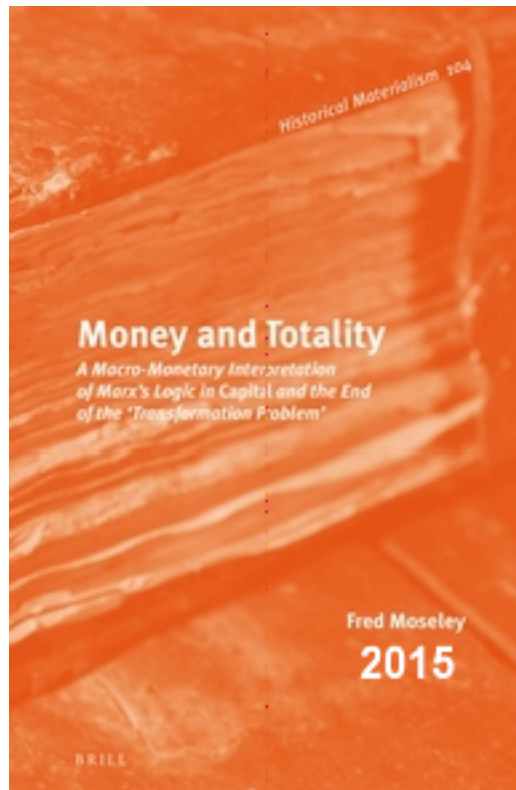# Money and Totality

A Macro-Monetary Interpretation of Marx's Logic in Capital *and the End of the 'Transformation Problem'*

By

Fred Moseley

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Preface

> That the method of analysis employed in *Capital* has been little understood is shown by the various mutually contradictory conceptions that have been formed of it.[1]

Marx's statement above (in the Postface to the second German edition of Volume I of *Capital*) unfortunately remains largely true today. In particular, the long and continuing controversy over Marx's analysis of the 'transformation problem' has not paid sufficient attention to the logical method employed by Marx in constructing his theory. This is unfortunate, because Marx's logical method is unique in the history of economic theory, both before and after Marx, and therefore requires careful study in order to be properly understood. Marx said in the Preface to the French edition:

> The method of analysis which I have employed, and which had not been previously applied to economic subjects, makes the reading of the first chapters rather arduous ...[2]

I think it is safe to say that Marx's logical method has hardly been used since Marx, and, because it is so unique, we have to work pretty hard ('arduously') to understand it. But the hard work is worth it.

The most common interpretation of the 'transformation problem' in Marx's theory is based on the work of Bortkiewicz and Sweezy, and more recently on a Sraffian version represented by Morishima and Steedman.[3] These interpretations are referred to in this book as the 'standard interpretations' of Marx's theory. According to these standard interpretations, the initial givens in Marx's theory are *physical quantities* – the quantities of inputs and outputs in each industry (i.e., the 'technical conditions of production') and also the real wage (the quantity of wage goods consumed by workers); in the Sraffian version, an input-output matrix. It is assumed that, from these given physical quantities, first the values of individual commodities are derived in Volume I of *Capital*, and that then, in Volume III, the prices of production of individual commodities are derived from these same physical quantities.

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1   Marx 1977a, p. 99.
2   Marx 1977a, p. 104.
3   Bortkiewicz 1906; Sweezy 1942; Morishima 1973; and Steedman 1977.

According to these standard interpretations, Marx made a crucial logical error in his determination of prices of production in Part 2 of Volume III – he 'failed to transform the inputs' of constant capital and variable capital from values to prices of production. Therefore, the prices of production derived by Marx are *logically contradictory* – the outputs are in terms of prices of production, but the inputs are in terms of values, which is impossible because some commodities are both inputs and outputs. It is argued that Marx recognised his error, and even called attention to it in several passages, but that he did not correct it (these passages are examined in detail in Chapter 4). This alleged logical contradiction in the determination of prices of production in Volume III has probably been the most frequently cited justification for rejecting Marx's theory over the last century.

The critics have argued that Marx's error can be corrected, using a method first suggested by Bortkiewicz, or more modern corrections based on linear production theory. However, almost all agree (to varying degrees) that this correction of Marx's mistake results in several conclusions which are damaging to Marx's theory: (1) only one of Marx's two aggregate equalities can be valid – *either* the total price of production is equal to (or proportional to) the total value, *or* the total profit is equal to (or proportional to) the total surplus-value, but *not both* at the same time. (2) The rate of profit changes in the transformation of values into prices of production, so that there are two rates of profit in Marx's theory – the 'price rate of profit' and the 'value rate of profit' – which are not equal and which may have divergent trends. (3) The ultimate criticism is that the Volume I theory of value is 'redundant' because the same prices of production and rate of profit can be derived directly from the given physical quantities, without first deriving values and then transforming these values into prices of production.

This book argues that this standard interpretation and standard critique of Marx's theory is a *fundamental misinterpretation* of Marx's theory and of the *logical method* employed by Marx in constructing his theory, especially those parts of it that deal with the relation between the total economy and individual industries and how the inputs of constant capital and variable capital are determined. The misunderstanding of Marx's method, to which he referred in 1872, remains largely true today.

This book presents an interpretation of Marx's logical method that is fundamentally different from the standard interpretation in the following important respects: (1) Marx's theory is constructed in terms of *two main levels of abstraction*: first the *production* of surplus-value and the determination of the total surplus-value in the economy as a whole and then the *distribution* of surplus-value and the division of the predetermined total surplus-value into individual

parts; (2) the subject of the theory is not 'two systems', but is instead a *single system* throughout – the actual capitalist economy – which is analysed first at the macro level of the total economy and is then subsequently analysed at the micro level of individual industries; (3) the logical framework of the theory is not a physical quantities input-output matrix, but is instead the *circuit of money capital*, expressed symbolically as **M – C ... P ... C′ – M′**, which implies that the initial money capital **M** is the starting point of Marx's theory and is *taken as given* as known data, both in the macro theory of the production of surplus-value and in the micro theory of the distribution of surplus-value; and (4) all the main variables in the theory are determined according to the logic of *sequential determination* in the above senses, not simultaneous determination as in the Sraffian interpretation.

It follows from this 'macro-monetary' interpretation of Marx's logical method that the widely-accepted, damaging criticisms of Marx's theory mentioned above are *not valid*. Marx's two aggregate equalities (total gross price = total gross value, and total profit = total surplus-value) are always both true simultaneously, as Marx claimed. There are not two rates of profit in Marx's theory, but only one rate of profit, which is determined by the Volume I theory of the total surplus-value and taken as given in the Volume III theory of the distribution of surplus-value and prices of production. Therefore, the theory of the total surplus-value in Volume I is not 'redundant', but is instead an essential prerequisite for the theory of the distribution of surplus-value and prices of production in Volume III. Value theory is not redundant in Marx's theory of prices of production, but only in the standard *mis*interpretation of Marx's theory. These conclusions will be argued in the chapters in this book.

An important impetus to Marxian scholarship in recent decades has been the publication of the *Marx/Engels Gesamtausgabe* (MEGA), the 114-volume collected works of Marx and Engels (in German) (publication still ongoing), including all of Marx's economic manuscripts (recently completed). The most important of Marx's previously unpublished economic manuscripts are: (1) the complete *Manuscript of 1861–63*, about two-thirds of which is the (previously published) *Theories of Surplus-Value*, and the remaining third (previously unpublished) of which includes a very interesting second draft (after the *Grundrisse*) of Volume I of *Capital* and an equally interesting first draft of Parts 1 and 3 of Volume III; (2) Marx's full manuscript of Volume III in the *Manuscript of 1864–65*, which Engels used as the basis for his edited version of Volume III, but with considerable editing; and (3) drafts of Volume II in the *Manuscript of 1864–65* and later manuscripts in the 1870s.

The complete *Manuscript of 1861–63* has been translated into English in Volumes 30–4 of the *Marx-Engels Collected Works* (50 volumes of selected translations of the MEGA by International Publishers), and this manuscript has been especially instrumental in the development of my 'macro-monetary' interpretation of Marx's theory (this is the manuscript in which Marx developed his theory of the distribution of surplus-value for the first time). Unfortunately, the very important *Manuscript of 1864–65* was not included in the *Marx-Engels Collected Works* (for cost-cutting reasons). Fortunately, an English translation of this manuscript by Ben Fowkes was recently published by Brill (edited by me).[4]

Enrique Dussel (the prominent Mexican Marxian philosopher) has argued that since we now have all of Marx's economic manuscripts, a 'new era' of Marxian scholarship can begin, which he calls 'Marx's second century'; and he argues that the second century will be much better than the first. Dussel suggests that we should return to Marx's texts and study the step-by-step development of Marx's thinking in order to develop a deeper understanding of his theory and its application to our time and circumstances. I have tried to follow Dussel's advice in this book, especially in Chapters 3 and 4. Dussel himself wrote a trilogy on Marx's economic manuscripts, in Spanish, in the 1980s.[5]

This book is divided into two main parts. Part I presents my 'macro-monetary' interpretation of Marx's logical method and the transformation problem, and Part II discusses other important recent reinterpretations of Marx's theory and the transformation problem. Part I consists of five chapters. Chapter 1 presents an introduction to the most important points of my 'macro-monetary' interpretation, and Chapter 2 presents an algebraic summary of my interpretation. Chapters 3 and 4 present substantial textual evidence from all the drafts of *Capital* to support my interpretation. Chapter 5 discusses the role of money and the money commodity in Marx's theory and in particular in the transformation of values into prices of production.

Part II consists of seven chapters. Chapter 6 reviews the standard Bortkiewicz-Sweezy interpretation of Marx's theory and the Sraffian version of the standard interpretation. The next five chapters discuss the following important reinterpretations of Marx's theory and the transformation problem in recent decades: the Iterative Interpretation of Anwar Shaikh (Chapter 7); the New

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4   Marx 2016.

5   Dussel 2001b is an English translation of the middle book in the trilogy on the *Manuscript of 1861–63*.

Interpretation of Duncan Foley and Gérard Duménil (Chapter 8); the Temporal Single System interpretation of Andrew Kliman and Ted McGlone (Chapter 9); the Rethinking Marxism interpretation of Richard Wolff, Bruce Roberts, and Antonio Callari (Chapter 10); and the Organic Composition of Capital interpretation of Ben Fine and Alfredo Saad-Filho (Chapter 11). Chapter 12 presents my responses to two published critiques of my interpretation by David Laibman and Riccardo Bellofiore.

Part III presents a final concluding chapter.

This book presumes some knowledge of Marx's theory and the debate over the 'transformation problem'. My primary audience is Marxian scholars around the world, especially young scholars and graduate students in Marxian studies in various disciplines, especially economics; although I hope it will also be accessible to relative newcomers to Marx's theory and this debate. I have chosen to start my book with my own interpretation rather than the standard interpretation in order to encourage a 'fresh look' at Marx's theory. However, Part I refers frequently to the standard interpretation, assuming a more or less common basic understanding. The classic introduction to the standard interpretation of the transformation problem is Chapter 7 of Sweezy's *Theory of Capitalist Development*; see also Steedman's *Marx After Sraffa*, Chapters 1–4. Another good introduction is Chapter 6 of Foley's *Understanding Marx's Capital*. Readers seeking more details of my understanding of the standard interpretation can refer to Chapter 6 in the beginning of Part II.

In February 1858 (while working on the *Grundrisse* and 10 years before the publication of the first edition of Volume I of *Capital*), Marx wrote to Ferdinand Lassalle:

> Now that I am at last ready to set to work after 15 years of study, I have an uncomfortable feeling that turbulent movements from without will probably interfere after all. If I finish too late and thus find the world no longer attentive to such subjects, the fault is clearly my own.[6]

I certainly do not pretend to compare my book to Marx's book, but I have similar feelings. If I have taken too long to finish this book, the fault is clearly my own, but at least I am in good company. And perhaps I have an advantage in that the world once again seems to be somewhat more attentive to this subject as a result of the ongoing crisis of world capitalism.

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6   Marx, MECW, v. 40, pp. 270–1.

Acknowledgements

And finally a lifetime of thanks to my wife Patricia Ramsey, a more prolific scholar than I, for being such an amazing companion all these years, and for putting up with my 'workaholic' tendency.

Fred Moseley

Bibliographical Note

The standard style for references in footnotes used in this book is: Author date. However, there are complications with references to the five volumes of *Manuscript of 1861–63* in the *Marx and Engels Collected Works* (Volumes 30–4) and the three volumes of *Theories of Surplus-Value*, (which are about two-thirds of the *Manuscript of 1861–63*). Therefore, the following convention is used to refer to these editions: the *Marx and Engels Collected Works* are referred to as: Marx MECW, v. xx; and the *Theories of Surplus-Value* are referred to as: Marx TSV, v. x. And references to both editions for the same passage are given with the following convention: Marx MECW, v. xx [TSV, v. x]. Translations are always taken from the MECW. It is necessary to give both references for two reasons: the translations are sometimes different (usually better in the MECW) and some of the content is relocated in TSV, which can be confusing and misleading. A prime example of such a misleading relocation is Marx's expanded outline of Volume III of *Capital* written in December 1862, and discussed in Chapter 3, Section 2.4. And a prime example of a misleading translation in TSV is the German word *vorausgesetzten*, which should be translated as 'presupposed', but is instead translated in several key passages in TSV as 'antecedent'; discussed in Chapter 4, Section 2.

Marx's letters are quoted from *Marx and Engels Collected Works*, Volumes 40–43, and are referenced as: Marx MECW, v. xx.

For emphasis in quotations, *regular italics* indicates emphasis in the original, and ***bold italics*** indicates emphasis added by me. Brackets in quotations are added by me, unless otherwise noted.

A Macro-Monetary Interpretation
of Marx's Logical Method

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Introduction: A 'Macro-Monetary' Interpretation of Marx's Theory

> The profit of the capitalist class ... has to exist before it can be distributed.[1]

> Capitalists are like hostile brothers who divide among themselves the loot of other people's labour.[2]

> Before production began, we had a capital of £500. After production is over, we have the capital of £500 plus a *value* increment of £100.[3]

> The exact development of the *concept of capital* [is] necessary, since it [is] the fundamental concept of modern economics, just as capital itself, whose abstract, reflected image [is] its concept ... [is] the foundation of bourgeois society.[4]

This chapter introduces the main characteristics of the 'macro-monetary' interpretation of the logical method of Marx's theory presented in this book, focusing on those elements which are especially relevant to an understanding of Marx's theory of prices of production and of the 'transformation problem'. These characteristics are: (1) Marx's theory is structured according to *two main levels of abstraction*: the *production* of surplus-value and the *distribution* of surplus-value, and the production of surplus-value is theorised prior to the distribution of surplus-value, which means that the *total surplus-value* in the economy as a whole *is determined, logically, prior* to its division into individual parts; (2) the subject of the theory throughout is a '*single system*' – the actual capitalist economy – which is first analysed at the macro level of the total economy and is then subsequently analysed at the micro level of individual industries; (3) the logical framework of Marx's theory of the production and distribution of surplus-value is the *circuit of money capital*, which is expressed symbolically as:

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1 Marx 1973, p. 684.
2 Marx and Engels 1989a, p. 264 [TSV, v. II, p. 29].
3 Marx 1981, p. 124.
4 Marx 1973, p. 331, brackets in the text.

$$\text{M} - \text{C} \dots \text{P} \dots \text{C}' - \text{M}', \qquad\qquad \text{where } \text{M}' = \text{M} + \Delta\text{M}$$

and the main goal of the theory is to explain the origin and magnitude of the total ΔM in the economy as a whole; (4) the initial money capital M at the beginning of the circuit of money capital is *taken as given*, as initial data, both in the macro theory of the total surplus-value and in the micro theory of the individual parts of surplus-value; (5) the given initial M is *eventually explained* in two stages, first partially at the macro level and then more completely at the micro level; and (6) the variables in the theory are determined according to the logic of *sequential determination* (not simultaneous determination), in the above senses.

In this book, it will be argued that, if Marx's logical method is interpreted in this way, then there is *no* 'transformation problem' in Marx's theory, and that Marx's theory of prices of production is logically coherent and complete.

Chapter 2 presents a mathematical summary of this macro-monetary interpretation of Marx's theory of value and surplus-value and prices of production; readers might want to refer at times to Chapter 2 while reading Chapter 1.

In this introductory chapter, comparisons are sometimes made to the standard interpretations of Marx's theory – in both the Bortkiewicz-Sweezy version and the Sraffian version – which presumes that readers are familiar with the basics of these interpretations of Marx's theory. Readers might want to refer to Chapter 6 for my view of these standard interpretations. The classic sources of these interpretations are Sweezy 1942 and Steedman 1977.

1   Two Main Levels of Abstraction: The Production and Distribution of Surplus-Value and the Prior Determination of the Total Surplus-Value

The first important feature of Marx's logical method is the basic structure of two main stages or levels of abstraction – the *production* of surplus-value and the *distribution* of surplus-value. The main question at the level of abstraction of the production of surplus-value is the determination of the total amount of surplus-value produced in the economy as a whole, and the main question at the level of abstraction of competition is the division of the total surplus-value into individual parts – first the equalisation of the rate of profit across industries and then the further division of the total surplus-value into commercial profit, interest, and rent. And the fundamental premise of this logical structure is that the total surplus-value is determined at the first level of abstraction (the production of surplus-value) and is taken as a predetermined given at the

second level of abstraction (distribution of surplus-value), i.e., in the division of this predetermined total surplus-value into individual parts. Thus, there is a strict logical progression from the first level of abstraction to the second level: first the production of surplus-value and the determination of the total surplus-value and then the distribution of surplus-value and the determination of the individual parts. In Hegelian terms, Marx referred to these two levels of abstraction as *capital in general* and *competition* (or many capitals). One could also say that Marx's theory begins at the *macroeconomic* level of the total economy and the total surplus-value and then proceeds to the *microeconomic* level of individual industries and individual parts of surplus-value.[5] The logical priority of the total surplus-value over the individual parts is what I mean by 'totality' in the title of this book. Other authors who have also emphasised this logical transition in Marx's theory from the production of surplus-value to the distribution of surplus-value include Paul Mattick, Roman Rosdolsky, Enrique Dussel, David Yaffe, and Duncan Foley.

This logical progression from the total surplus-value to the individual parts of surplus-value follows from Marx's labour theory of value and surplus-value. According to Marx's theory, all the individual parts of surplus-value come from the *same source* – the surplus labour of workers in production. Therefore, the total surplus-value must be determined prior to its division into the individual parts, and the total surplus-value is determined by the total surplus labour, and nothing else; i.e., the total surplus-value does not change in the subsequent determination of the individual parts.

To take the most important example, namely Marx's theory of prices of production in Part 2 of Volume III, the total surplus-value produced in a year is taken as a predetermined given, as determined in Volumes I and II, and this predetermined total surplus-value is used to determine the general rate of profit ($R = S / M$), which in turn is a determinant of prices of production (see Chapter 2). As a result, the predetermined total surplus-value is distributed to

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5 However, it should be emphasised that Marx's macroeconomic and microeconomic levels of abstraction are very different from mainstream macroeconomics and microeconomics. The main question of Marx's macroeconomic level of abstraction is the determination of the total surplus-value produced in the economy as a whole and is based on the labour theory of value; mainstream macroeconomics has no theory of profit at all. And the main question of Marx's microeconomic level of abstraction is the division of the total surplus-value into individual parts, whereas the main questions of mainstream microeconomics are how consumers decide to spend their income, how firms decide the quantity of output to produce, and the determination of (unit) prices of individual commodities, with the average profit taken as given, disguised as the 'opportunity cost of capital'.

individual industries in such a way that all industries receive the same rate of profit. Then the total surplus-value is further divided into the individual parts of commercial profit, interest, and rent (analysed in Parts 4–6 of Volume III).[6]

The 'transformation problem' is usually conceived as a transformation of *individual* labour values to *individual* prices of production. But that is not what Marx's theory of prices of production is about; Marx's theory is about the transformation of *aggregate* price to *individual* prices of production and the transformation of the *total* surplus-value into its *individual* parts. The standard interpretation misses entirely the all-important *macro* aspect of Marx's theory and logical method, and the logical priority of the total surplus-value over the individual parts.

This aspect of Marx's method is completely unique in the history of economic theory. No other economic theory has analysed the total profit and individual amounts of profit in this sequential and logically integrated way. It is certainly very different from Sraffa's theory, in which the total amount of surplus-value is not determined at all (except implicitly and secondarily), and the rate of profit is not determined prior to prices of production, but is instead determined simultaneously with the prices of production of both inputs and outputs.

The textual evidence from all the drafts of *Capital* to support this important aspect of Marx's logical method is discussed extensively in Chapter 3.

2   Single System – Actual Capitalism

Another important characteristic of Marx's logical method, which follows from the 'two levels of abstraction' and the prior determination of the total surplus-value discussed in the previous section, is that Marx's theory in all three volumes of *Capital* is about a *single system*, the actual capitalist economy, which is assumed to be in long-run equilibrium, and which is theorised first at the macro level (in order to determine the total amount of surplus-value) and then is analysed at the micro level (in order to determine the division of the total surplus-value into individual parts).

By contrast, according to the standard interpretation, Marx's theory is about two different economic systems (i.e., a 'dual system' interpretation) – first a

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6   Modern macroeconomics in recent decades has been obsessed with the 'micro foundations of macroeconomics'. Marx's logical method is the opposite – the macro foundations (the prior determination of the total surplus-value) of microeconomics (the individual parts of surplus-value).

hypothetical 'value system' in Volumes I and II, and then the actual capitalist 'price system' in Volume III. In the hypothetical 'value system', it is assumed that the long-run equilibrium prices of individual commodities are equal to their *values*; and in the actual 'price system', it is assumed that the long-run equilibrium prices of commodities are equal to their *prices of production*. But this 'dual system' is not Marx's logical method. Marx's theory is not about two different economic systems, but is instead about the same system – the actual capitalist economy – from beginning to end, which is assumed to be in long-run equilibrium. In the actual capitalist economy, the long-run equilibrium prices of commodities are equal to their prices of production, not to their values. These actual long-run equilibrium prices of individual commodities are eventually explained at the level of abstraction of competition in Part 2 of Volume III of *Capital*.[7]

Therefore, the total surplus-value that is determined in Volumes I and II is the *actual* total surplus-value produced in the economy as a whole; it is not a hypothetical total surplus-value that is assumed to be equal to the value of surplus goods and that later has to be transformed into the actual total profit in Volume III, the latter being dependent on other factors besides surplus labour (as in the standard interpretation). Instead, Marx's theory is about the actual total surplus-value from the very beginning in Volume I. This must be true, in order to be consistent with the fundamental premise of Marx's theory of the prior determination of the total surplus-value, discussed in the previous section. The prior determination of the total surplus-value is logically possible *only if* Volume I is about the actual capitalist economy and the actual total surplus-value. And it is.

Similarly, the two components of the initial money capital – constant capital and variable – also refer to actual quantities of money capital advanced in the actual capitalist economy to purchase means of production and labour power in the first phase of the circulation of capital. Constant capital and variable capital in Volume I do *not* refer to hypothetical quantities of money capital, which are assumed to be equal to the *values* of the means of production and means of subsistence (as in the standard interpretation). Instead, constant

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7 From now on in this book, the word 'actual' (without qualification) will refer to *actual long-run equilibrium prices* (prices of production) and to actual long-run equilibrium quantities of constant capital and variable capital (equal to prices of production of the inputs), as opposed to *hypothetical* long-run equilibrium prices (values) and hypothetical long-run equilibrium quantities of constant capital and variable capital (equal to the values of the inputs). 'Actual' does not refer to disequilibrium market prices. Market prices are theorised at a lower level of abstraction, not dealt with in the three volumes of *Capital*.

capital and variable capital in Volume I refer to actual quantities of money capital, which tend to be equal to the *prices of production* of the means of production and means of subsistence, although prices of production cannot be explained in Volume I, because prices of production have to do with the distribution of surplus-value; and before the distribution of surplus-value can be explained, the total amount of surplus-value to be distributed must first be determined – this being the main task of Volume I.

3   Marx's Concept of Capital

The title of Marx's book is of course *Capital*, thereby clearly indicating the centrality of the concept of *capital* in his theory of capitalism. As Marx put it early on in the *Grundrisse*, the first draft of *Capital*:

> The exact development of the *concept of capital* [is] necessary, since it [is] the fundamental concept of modern economics, just as capital itself, whose abstract, reflected image [is] its concept ... [is] the foundation of bourgeois society.[8]

Marx introduced his central concept of capital in Chapter 4 of Volume I of *Capital* in the abbreviated form of the 'general formula for capital', which he expressed symbolically as:

$$\mathbf{M} - \mathbf{C} - \mathbf{M}' \qquad\qquad\qquad \text{where } \mathbf{M}' = \mathbf{M} + \mathbf{\Delta M}$$

Here M represents the initial money capital advanced to purchase means of production and labour power, C represents commodities, M′ represents the final money capital recovered through the sale of commodities, and ΔM represents the increment of money that emerges at the end of this circuit and is the main purpose and the main result of the circuit. Thus capital is defined by Marx as money advanced into circulation in order to extract *more money* from circulation.[9]

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8   Marx 1973, p. 331, brackets in the text.

9   Marshall discussed various concepts of capital in Appendix E of his *Principles of Economics*, and he briefly mentioned Marx's concept of capital, but said nothing about M-C-M′! Instead, he attributed to Marx the concept of capital as physical capital goods that are *owned by private businesses*, and private ownership was the pernicious aspect of capital that Marx emphasised

Surplus-value is defined as ΔM, or the increment of money that emerges at the end of the circuit of capital.[10] The production of surplus-value is the main purpose of capitalist production, and is the most important phenomenon to be explained by Marx's theory of capitalism (or any theory of capitalism). The general formula for capital focuses Marx's theory on this all-important question: where does the total ΔM come from and what determines its magnitude?[11] Most of Volume I is devoted to this central question for the economy as a whole (see Chapter 3 and Moseley 2004).

Thus we can see that Marx's concept of capital is clearly and emphatically defined in terms of *money*, as '*money that becomes more money*'. The title of Part 2 of Volume I is: 'The Transformation of *Money* into *Capital*'. This definition of capital in terms of money obviously also applies to the two components into which the initial money capital advanced is divided – *constant capital* (the initial money capital advanced to purchase means of production) and *variable capital* (the initial money capital advanced to purchase labour power).[12] Algebraically, M = C + V, all in terms of money (C here refers to constant capital, not, as in the general formula for capital, to commodities). This is part of what I mean by 'monetary' in the title of this book – that the central concept in Marx's theory is the concept of capital, which is defined in terms of *money*, i.e., money advanced into circulation in order to withdraw *more money* from circulation.

One common interpretation of Volume I is that it is only about labour times, not money or prices, and that Marx's theory deals with money and prices only in Volume III. Volume I is about the 'value system', which is only about labour times. Even the quantities of capital and constant capital and variable capital in Volume I are interpreted as referring to quantities of labour time (embodied in the means of production and means of subsistence, respectively). I argue that this view is a fundamental misinterpretation of Volume I, which loses sight of the essential *monetary nature of capital* in capitalist production and in Marx's theory. Money is derived in the very first chapter (Section 3) of Volume I, as the *necessary form of appearance of abstract labour*, and from then on Marx's theory is about quantities of money that represent, and thus are determined by, quantities of labour time. The core concept of Volume I is *capital*, and capital

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because it encouraged class conflict. Marshall clearly did not understand Marx's concept of capital, nor Marx's theory of capital.

10   Marx 1977a, p. 251.

11   Marx once stated that, in the circuit of money capital, ΔM is the 'most striking' feature which 'leaps to the eye' (Marx 1978, p. 140).

12   Marx 1977a, Chapter 8.

is defined in terms of *money* (that makes more money). The main purpose of Volume I is to explain this all-important monetary phenomenon.

Marx's concept of capital is very different from the concept of capital in neoclassical economics, which is defined in terms of heterogeneous *physical goods* – as quantities of material inputs to production (machinery, equipment, buildings, raw materials, etc.), i.e., as 'capital *goods*'. Thus capital is analysed in neoclassical economics as 'goods used to produce other goods', and this concept applies to all types of modes of production. Capital is defined as means of production and means of production are used in all modes of production. Marx's concept of capital, on the other hand (money that becomes more money), is a historically specific concept that applies specifically and solely to the capitalist mode of production.

The neoclassical definition of capital in terms of heterogeneous 'capital goods' is the reason why neoclassical theory has an insoluble 'aggregation problem' – because different kinds of physical means of production cannot be meaningfully added together. Marx's concept of capital, on the other hand, has no such 'aggregation problem', because Marx's concept of capital is defined in terms of money, which is homogeneous by its nature, and thus there is no problem adding up quantities of money capital across the economy.

Sraffa criticised the neoclassical concept of capital as capital goods for a similar reason – because it is impossible to measure heterogeneous physical goods as a quantity independently of prices.[13] Sraffa's criticism of the neoclassical concept of physical capital goods is valid, but it does not apply to Marx's concept of money capital, which is inherently homogeneous and thus can be easily measured. Sraffa's 'solution' to the neoclassical aggregation problem was to eliminate altogether the concept of capital from his theory. He does not seem to have considered Marx's concept of capital in terms of homogeneous money.[14]

4   The Circuit of Money Capital

The expanded form of Marx's circuit of money capital is the well-known symbolic expression:

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13   Sraffa 1960, p. 9.

14   It is disappointing that, so far as I can tell, Sraffa never discussed Marx's concept of capital in all his extensive discussions of Marx's theory in his voluminous archives, in spite of the centrality of the concept of capital in Marx's theory. If Sraffa scholars know of such discussions in Sraffa's archives, I would be very pleased to hear from them.

$$M - C \ldots P \ldots C' - (M + \Delta M)$$

This circuit of money capital takes place in *two 'spheres'*, the sphere of *circulation* and the sphere of *production*, and consists of *three phases*, consecutive in time: (1) the *advance* of money capital to purchase means of production and labour power in the sphere of circulation, prior to production; (2) the *production* process, in the sphere of production; and (3) the *recovery* of money capital through the sale of commodities after production, again in the sphere of circulation. Marx often referred to this circuit of money capital as the 'valorisation process', in which an initial quantity of money is 'valorised' by becoming more money, in contrast to the 'labour process' in terms of physical goods.

Marx's circuit of money capital refers to a *real process*, which takes place in *real historical time*. Capital *exists* first in the form of money advanced in the sphere of circulation, then in the form of means of production and labour power in the sphere of production, then in the form of commodities produced at the end of the production process, and then finally back again in the form of money recovered, including more money than was originally advanced at the beginning of this real historical process. This process takes a certain amount of real historical time from the advance of money capital to the recovery of more money capital. This temporal aspect of the circuit of money capital was succinctly expressed by Marx as follows: '*Before* production, we had a capital of £*500*. *After* production is over, we have a capital of £*500* plus a value increment of £*100*.'[15] Marx's theory explains how this all-important phenomenon happens.[16]

The temporal nature of Marx's circuit of money capital is also evidenced by Marx's emphasis throughout *Capital* on the distinction between the 'old value' (or 'transferred value') and the 'new value' components of the price of commodities. 'Old value' exists at the beginning of the circuit of money capital in the form of the initial money constant capital advanced to purchase means of production and in the form of the price of these means of production. This previously existing 'old value' is transferred to the price of the output. The quantity of 'transferred value' is determined by and cannot exceed the quantity of 'old value' that previously existed. On the other hand, 'new value' did not previously exist at the beginning of the circuit, but is instead the result of the

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15   Marx 1981, p. 124; see also Marx 1977, p. 256 and Marx MECW, v. 33, p. 79 for similar 'before … after' statements.

16   The 'temporal single system' interpretation (TSSI) of Marx's theory has also emphasised that Marx's theory of the circuit of capital is in terms of real historical time; see Chapter 9 for further discussion.

current labour process, and hence also the source of surplus-value or ΔM that is produced in this process, and thus comes to exist at the end of this process.

I argue that the circuit of money capital is the general logical framework of Marx's theory of surplus-value.[17] The main goal of Marx's theory is to explain how the initial M at the beginning of this circuit becomes (M + ΔM) at the end of the circuit. The 'general formula for capital' is *not* just incidentally introduced in Chapter 4 of Volume I, with no significant role in the rest of the theory; instead the expanded circuit of money capital is the general logical framework of Marx's theory for the rest of the three volumes of *Capital*. This is part of what I mean by 'monetary' in the title of this book – that the circuit of money capital is the logical framework of Marx's theory.

Marx summarised this general framework of his theory as follows (in the Introduction to Part 7 of Volume I):

> The transformation of a sum of *money* into means of production and labour power is the first phase of the movement undergone by the quantum of value which is going to function as *capital*. It takes place in the sphere of circulation. The second phase of the movement, the process of production, is complete as soon as the means of production have been converted into commodities whose value exceeds that of their component parts, and therefore contains the value originally advanced plus a surplus-value. These commodities must then be thrown back into the sphere of circulation. They must be sold, their value must be realised in *money*, this money must be transformed once again into *capital*, and so on, again and again. This cycle, in which the same phases are continually gone through in succession, forms the *circulation of capital*.[18]

Keynes once referred to Marx's M-C-M′ circuit of capital as a 'pregnant observation', and he agreed with Marx that the goal of entrepreneurs is not 'more product', but is instead 'more money', and also that a theory of an 'entrepreneurial economy' should be formulated in terms of money variables, not real variables.[19] Keynes did not seem to realise that Marx's M-C-M′ circuit of capital is not just a 'pregnant observation', but is the general logical framework for

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17   Duncan Foley 1986a and 1986b has also emphasised the circuit of money capital as the logical framework of Marx's theory, which he calls the 'circuit of capital' approach, and which has gained some popularity in recent years. For further discussion of Foley's 'circuit of capital' approach, see Chapter 8, Section 1.5.

18   Marx 1977a, p. 709.

19   Keynes 1979, pp. 81–2.

Marx's theory. Unfortunately, Keynes did not adopt Marx's M-C-M' framework in his own theory, but instead adopted an aggregate supply/aggregate demand framework, in which aggregate supply is essentially aggregate costs, and costs include the prevailing rate of profit as a given. Thus ΔM is hidden as a 'cost' in Keynes's theory (and in neoclassical economics in general) and transformed in effect into a part of M (!), and no explanation of this all-important ΔM is provided by Keynes's theory.

The modern theory of the monetary circuit (Graziani, Realfonzo, Ronchon, etc.) has a logical framework similar to Marx's, as the name indicates. This framework starts with a given quantity of money, loaned by banks as credit money to firms, which use the money to purchase means of production and labour. This monetary circuit ends with the recovery of money by firms through the sale of commodities and the repayment of the bank loans. However, the main question posed in this theory is *not* the origin of ΔM, but rather how endogenous money is created and functions as medium of exchange.[20] A collection of writings in the theory of the monetary circuit is entitled *Money in Motion*;[21] this would also be a good title for a book on Marx's theory, but a better title would be *Money Becoming More Money*.

On the other hand, Marx's logical framework of the circuit of money capital is very different from the framework of Sraffa's theory, which consists instead of an input-output matrix constructed in terms of physical quantities, a labour-input vector, the wage share of income, and a system of simultaneous equations based on these physical quantities. Sraffa referred to his logical framework as the 'circular flow of production', by which he meant the circular flow of physical inputs and outputs, not the circular flow of quantities of money capital. Sraffa's theory is not a theory of the 'valorisation process'; it is instead a theory of relative prices that reproduce the initial given physical quantities of inputs.

In order to compare Sraffa's logical framework with Marx's framework, Sraffa's framework could be represented symbolically as follows:

Q ... P ... C′

where Q stands for the physical quantities of means of production and quantities of labour.[22] The most striking difference of Sraffa's framework compared to

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20   To the extent that the question of the origin of profit is addressed, the answer is usually a Kalecki-type theory: profit is determined by investment.

21   Deleplace and Nell 1996.

22   Sraffa has described this process as 'the production of commodities by means of commod-

Marx's framework is the *complete absence of money*, especially the absence of
ΔM, the most important characteristic of capitalist economies. The first phase
of the circulation of money capital in the sphere of circulation – the advance of
money capital to purchase means of production and labour power – is miss-
ing altogether. It is as if no money capital is advanced in capitalism to pur-
chase means of production and labour power. But this is not the case. Money
capital is advanced in capitalism, in definite quantities, and this quantity of
money capital advanced must be recovered before there can be any surplus-
value.

Crucially missing in Sraffian theory is the exchange of the money wage
for labour power, which Marx called the characteristic feature of capitalist
economies. The payment of the money wage makes it appear as if *all* the
hours of labour are paid for (especially in the modern form of hourly wages).
However, Marx's theory of surplus-value shows that this appearance is false;
workers produce new value that is equal to their money wages in only a part
of their working day (or hour), and the remainder of their working day (or
hour) is *unpaid labour* which produces surplus-value for capitalists.[23] This
critical theory of the money wage is missing in Sraffa's theory.[24] Instead, Sraffa
assumed that the wage rate is a *share of the surplus* (i.e., a percentage or
a pure number from 0 to 1) and this share is paid '*post factum*' (i.e., after
production).

Also missing in Sraffa's theory is the exchange between money capital and
the means of production. It is as if the means of production enter capitalist
production as *mere physical quantities*, without predetermined prices. But this
is not the case in capitalism. Means of production in capitalism are *commo-
dities*, which are purchased by money capital prior to production at already-
existing prices. Means of production enter the *valorisation process* (M becom-
ing M+ΔM) as commodities with a price, not as physical quantities without a
price.

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ities'. However, it would be more accurate to describe it as 'the production of commodities
by means of *physical quantities*', since the physical inputs are not treated as commodities
with already existing prices. Mark Blaug commented that Sraffa's theory should be called
'The Production of Commodities Without Anything Called Capital' (Blaug 1996, p. 134),
which would also be a good title.

23   See Marx's critique of money wages in Marx 1977a, Part 6.

24   Suzanne de Brunoff 2005 has also emphasised Marx's critique of money wages and this
very important difference between Marx's theory and Sraffa's theory.

5   M Presupposed

The next important characteristic of Marx's logical method to be discussed follows from the circuit of money capital as the logical framework of Marx's theory – that the initial money capital **M** at the beginning of the circuit of money capital is *taken as given* or *presupposed*, as initial data, both in the macro theory of the total surplus-value in Volume I and in the micro theory of the prices of production and individual parts of surplus-value in Volume III. The initial M exists as a definite magnitude at the beginning of the circuit of capital, prior to the recovery of M′ and ΔM, and is in principle a known quantity; thus, it is legitimate to take this known quantity at the beginning of the circuit as given in order to explain the M′ and ΔM at the end of the circuit. Marx's theory proceeds from the pre-existing known M (money capital advanced) to the unknowns M′ (capital recovered) and ΔM (surplus money capital recovered). The pre-existing given M at the beginning of the circuit is the 'benchmark' against which M′ and ΔM at the end of the circuit are measured and determined. This is also what I mean by 'monetary' in the title of this book – that these pre-existing quantities of money capital at the beginning of the circuit of money capital are the initial givens in Marx's theory of surplus-value (ΔM) (along with the hours of socially necessary labour time and the money value produced per hour; see Chapter 2 for further explanation).

   The logical structure of the circuit of money capital suggests in two ways that the initial money capital (M) is taken as given or presupposed in Marx's theory, both in the macro theory of the production of surplus-value in Volumes I and II and also in the micro theory of the distribution of surplus-value in Volume III. In the first place, the *starting point* of the circuit of capital is M, which suggests that M is also the starting point or the initial data of Marx's theory of the circuit of money capital and ΔM. The circuit of money capital begins with the advance of a definite quantity of money M to purchase means of production and labour power in the capitalist economy, and Marx's theory of the circuit of money capital begins with this quantity of money capital advanced. As we have seen, the main question which Marx's theory of surplus-value is intended to answer is this: how does a pre-existing quantity of money capital M advanced at the beginning of this circuit become a greater quantity of money (M + ΔM) at the end of the circuit? In Marx's terms, how is the pre-existing M 'valorised'? For this question, the appropriate initial given in the theory is the initial M advanced; this is the quantity of money capital that must be recovered before any ΔM can be appropriated and the initial M 'valorised'. This initial M becomes a 'presupposed constituent' in the determination of M′ and ΔM (the details are discussed in Chapter 2).

The second way in which the structure of the circuit of money capital suggests that the initial M is taken as given is that the *first phase* of the circuit of money capital – the advance of money capital to purchase means of production and labour power (M – C) – takes place in the *sphere of circulation*, prior to the second phase of production. Marx's theory of the circuit of capital also begins in the sphere of circulation (in Part 2 of Volume I), with the advance of definite quantities of money constant capital and money variable capital to purchase means of production and labour power (with the famous passage at the end of Part 2 about moving from the 'noisy sphere of circulation' to the 'hidden abode of production' marking the transition from the sphere of circulation to the sphere of production). Thus, when the second phase of the production of value and surplus-value begins, as analysed in Part 3 and beyond, the quantities of constant capital and variable capital are assumed to have already been advanced in the sphere of circulation to purchase means of production and labour power, and these already existing quantities of constant capital and variable capital are *taken as given* as the initial data in Marx's theory of how this previously existing given quantity of money capital becomes more money in the subsequent phases of the production and sale of commodities. In this way, the presuppositions of Marx's theory of surplus-value in the sphere of production come from already existing quantities of money capital previously advanced in the sphere of circulation.

And the crucial point for the 'transformation problem' is that, in Marx's theory of prices of production in Volume III, the *same quantities of constant capital and variable capital* are taken as given as in the Volume I theory of the total surplus-value – the *actual* quantities of money capital advanced to purchase means of production and labour power in the actual capitalist economy. The only difference is that in Volume III the *individual* quantities of constant capital and variable capital advanced are also taken as given, in addition to the total constant capital and variable capital that are taken as given in Volume I (i.e., the M_i's in each industry, in addition to the total M for the economy as a whole). The question that Marx's theory of prices of production is intended to answer is this: how is the original M_i in each industry recovered and the total surplus-value distributed in proportion to the original M_i in each industry? For this question, the appropriate initial givens are the initial M_i's in each industry which have to be recovered before any surplus-value can be distributed and are the basis on which the total surplus-value is distributed. These given M_i's become 'presupposed constituents' of the prices of production of commodities in Volume III, similar to the total M in the theory of total surplus-value in Volume I.

That is why Marx did *not* 'fail to transform the inputs' of constant capital and variable capital from values to prices of production – because no such transformation is necessary or appropriate in Marx's theory. The inputs of constant capital and variable capital in Marx's theory of prices of production in Volume III are the *same actual quantities of money capital* advanced in the real capitalist economy that are inputs in Marx's theory of total surplus-value in Volume I. There are not 'two systems' in Marx's theory – a 'value system' and a 'price system' – with two sets of magnitudes of constant capital and variable capital. Instead, there is only one system in Marx's theory, the actual capitalist economy, with one set of magnitudes of constant capital and variable capital, which is first analysed at the aggregate level and then at the individual industry level. Therefore, there is no 'transformation' of constant capital and variable capital to be made. Constant capital and variable capital are the same actual quantities of money capital at both levels of abstraction. David Yaffe and Paul Mattick Jr. have presented similar interpretations of constant capital and variable capital in Marx's theory – as 'monetary', 'single system', and the same quantities of money capital taken as given at both levels of abstraction.

The textual evidence to support this important aspect of Marx's logical method from all the drafts of *Capital* is discussed extensively in Chapter 4.

This aspect of Marx's logical method – taking the initial money capital advanced (or money costs) as given – is not unique in the history of economic theory. Indeed, in this respect, Marx's method is similar to a long line of 'cost of production' theories of value, including those of Adam Smith, J.S. Mill, Keynes, and current Post-Keynesians (including the theory of the monetary circuit; e.g., Graziani).[25] All these 'cost of production' theories of value take as given the initial money wage (with much less methodological grounding than Marx), and use the given money wage to determine prices (along with the mark-up) (they usually tend to ignore material costs, following Adam Smith's erroneous example). Marx's theory is of course also very different from these 'cost of production' theories, especially in the sense that Marx's theory incorporates these given money costs into his labour theory of value in order to provide a labour theory of surplus-value (see Chapter 2). These other theories either take profit as given (as the 'mark-up', which Sidney Weintraub called the 'magic constant') or have a Kalecki-type theory of profit (determined by investment). But the relevant point here is that Marx's theory is similar to these 'cost of production' theories insofar as it *takes the money wage as given*. If it is a legitimate logical

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25   See Graziani 2003, p. 102 and Rochon 1999, pp. 20–1.

method for these 'costs of production' theories to take money costs as given, then surely it is a legitimate logical method for Marx's theory to do the same.

Keynes's theory in particular took 'factor costs' (wages and profit) as given in money terms, not only in his theory of prices, but also in his aggregate supply function (which together with the aggregate demand function determines the equilibrium quantity of employment in his theory), and also in his theory of the marginal efficiency of capital. The aggregate supply function is the relation between the aggregate supply price (Z) and the quantity of employment that entrepreneurs are willing to provide (i.e., Z = f(N)), and Z is defined as the sum of the factor costs plus 'entrepreneur income'.[26] All these variables, including the factor costs, are *taken as given*, as a schedule, as dependent on the quantity of employment.[27]

Similarly, in order to determine the marginal efficiency of capital, Keynes also took aggregate costs (including wages) as given (along with the 'prospective yield').[28] Keynes also took the *unit* money wage rate as given, and this given unit money wage rate is the 'numeraire' in terms of which all other variables are measured. The climactic Chapter 19 ('Changes of *Money-Wages*') examines the effects of changes in the *given money wage* rate on the quantity of employment (through its effects on the marginal propensity to consume, the marginal efficiency of capital, and the rate of interest).[29] In comparison, Marx took the money wage (i.e., variable capital) as given, along with the money material costs (constant capital) (M = C + V) for a different purpose from Keynes: in order to determine the total price of the product (M′) and most importantly the total surplus-value (ΔM) (rather than take the 'prospective yield' as given, as Keynes did), and also to determine individual prices of production (M_i's). If it is an acceptable logical method for Keynes's theory to take the money costs as given, then it is also acceptable for Marx's theory to utilise a similar logical method.

In Sraffa's theory, on the other hand, the initial givens are *not* money costs or quantities of money capital advanced, but are instead *physical* quantities of inputs and outputs (and the wage share of income), as illustrated above in the symbolic representation of Sraffa's theory.

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26   'Entrepreneur income' is the difference between the net value of the product and factor costs.

27   Keynes 1936, Chapter 3.

28   Keynes 1936, Chapter 11.

29   Sidney Weintraub 1978–9, p. 60, described Keynes's treatment of money wages as follows: '… Keynes conceived the money wage as an *exogenous* variable …'

6   Two-Stage Explanation of the Presupposed Actual M

Marx's theory also provides a subsequent explanation of the actual quantities of money capital that are presupposed in the theory of the total surplus-value in Volume I and in the theory of individual prices of production in Volume III, and especially to analyse *changes* in these presupposed quantities over time. This explanation of the given actual quantities of money capital is presented in two stages; two stages are necessary because these actual quantities of money constant capital and money variable capital tend to be equal to the *prices of production* of the means of production and means of subsistence, and these prices of production have to do with the distribution of surplus-value and thus cannot be explained until after the total annual surplus-value has been determined in Volumes I and II.

In Volume I, it is provisionally assumed, as a first approximation, that the long-run equilibrium prices of individual commodities are equal to their values (i.e., are proportional to the labour times required to produce these commodities), including the prices of the means of production and means of subsistence (which are subsets of the total economy), because that is the only assumption consistent with the labour theory of value at the 'macro' level of abstraction of capital in general in Volume I. This assumption is not exactly true; it is only a first approximation. Long-run equilibrium prices depend not only on labour times, but also on the equalisation of the profit rate across industries. However, labour times are the *main determinant* of long-run equilibrium prices, and this provisional assumption in Volume I enables Marx to explain the main determinant of the prices of labour power and of the means of production, and to analyse the *effects of changes* in the labour times required to produce these commodities on the given quantities of constant capital and variable capital and on the quantity of surplus-value.[30]

For example, in Marx's theory of relative surplus-value in Volume I, technological change that reduces the labour time required to produce the means of subsistence reduces the price of means of subsistence, which in turn reduces variable capital and increases surplus-value and the rate of surplus-value. This

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30   It is *not* assumed that individual commodities actually (tend to) exchange at their values in a hypothetical 'value economy'; rather, it is assumed that individual commodities in the actual capitalist economy (tend to) exchange at their prices of production, which depend primarily, but not entirely, on their values, and which are explained more fully in Volume III.

theory does not require that variable capital be proportional to the labour time required to produce means of subsistence; the same general conclusions follow even if the quantities are not proportional. Similarly, a reduction in the labour time required to produce the means of production reduces the price of the means of production, which in turn reduces constant capital and the composition of capital.

However, the crucial point for our purposes is that this partial explanation of the given actual quantities of constant capital and variable capital (= values) *does not determine the magnitudes* of these variables in Marx's theory of value and surplus-value in Volume I. It does not determine the magnitude of constant capital that is the transferred value component of the value of commodities; instead the transferred value component of the value of commodities is the *actual* money capital advanced to purchase the means of production in the real capitalist economy, which is taken as given, as a known magnitude, and which in general is not equal to the value of the means of production. Similarly, this partial explanation does not determine the magnitude of variable capital that is subtracted from the new value produced in the current period in order to determine the surplus-value produced; instead the variable capital that is subtracted from new value is the *actual* money capital advanced to purchase labour power, which is taken as given, as a known datum, and which in general is not equal to the value of the means of subsistence. In this way, the total surplus-value that is determined in Volume I is the actual total surplus-value, not a hypothetical total surplus-value (equal to the value of surplus goods), that later has to be transformed into the actual total profit, which is due to other factors besides surplus labour.

After prices of production have been explained in Volume III, Marx then briefly provides a more complete explanation of the given actual quantities of constant capital and variable capital – that these actual quantities tend to be equal to the *prices of production* of the means of production and means of subsistence, and not equal to their values (see Chapter 4, Section 3, for an extensive discussion of this more complete explanation of the given actual quantities of constant capital and variable capital). But the important point again is that this more complete explanation of the given actual quantities of constant capital and variable capital *does not change the magnitudes* of constant capital and variable capital themselves. The magnitudes of constant capital and variable capital remain the same – the *actual* quantities of money capital advanced to purchase means of production and labour power in the sphere of circulation, which are taken as given, as known data. What changes in Volume III is the *explanation* of these given known quantities – from a partial explanation to a more complete one.

Finally, it should be noted that, in the case of technological change and the consequent change in the prices of means of production that occurs between the time constant capital is advanced to purchase means of production and the time the output produced with those means of production is sold (especially for long-lasting machines and equipment), then the quantity of constant capital that is taken as given in the theory of surplus-value in Volume I and in the theory of prices of production in Volume III will also change correspondingly. In this case, the given constant capital would be the 'current' constant capital, as evidenced by the most recent purchases of the means of production in the sphere of circulation, not their original 'historical cost'.

However, the advance of constant capital to purchase the means of production in the sphere of circulation is still logically and chronologically prior to the sale of the output and the recovery of the capital. The 'current' constant capital is still 'old value' in relation to the 'new value' produced by the labour of the current period, and is still transferred as a given amount to the value and price of production of the output, just like the original 'historical' constant capital in the case of no change in the price of the means of production; the only difference is a change in the magnitude of the given constant capital that is transferred.

This issue of current cost vs. historical cost is not an issue in the static transformation problem, since technology and hence the prices of the means of production are assumed to remain constant, but it is important for dynamic issues such as the falling rate of profit. This issue will be discussed further in Chapter 9 on the 'temporal single system' interpretation of Marx's theory (also see Moseley 1996 for an extensive discussion of this issue).

7   Sequential Determination

We have seen above that the analytical framework of Marx's theory is the circuit of money capital, which is a real process in real time, and that the main question of Marx's theory is this: how does an initial pre-existing quantity of money capital M increase its magnitude as a result of this process? This theory presumes that the initial M in any circuit of capital exists at some point in time at the beginning of the circuit, and that the initial M exists prior to the M′ and ΔM that are recovered at some later point in time at the end this circuit. There must be some interval of time between M and M′ to allow for something to happen to enable M to be transformed into M + ΔM. Such an increase of M cannot occur instantaneously. Therefore, the circuit of money capital and the explanation of ΔM require a logic of sequential determination; M must be determined prior to and independent of M′ and ΔM, because M exists prior to

M′ and ΔM. The initial M is taken as given (because it cannot be explained at the beginning of the theory), as a previously existing quantity of money capital, and this given M is used to determine M′ and ΔM.

Another reason that sequential determination is the appropriate logical method for Marx's theory is the key premise of the prior determination of the total surplus-value. In this case, the prior determination is not temporal, but logical. In the first stage of the theory, the total surplus-value is explained by the total surplus labor in the economy as a whole, and then this total surplus-value is taken as given in the subsequent stage of the theory, in which the division of the total surplus-value into individual parts is explained. Such a theory obviously requires a logic of sequential determination.[31,32]

On the other hand, the logic of simultaneous determination is not appropriate for the circuit of money capital because simultaneous determination presumes that all variables are determined at the *same point in time* (e.g., the 'annual market'). But M cannot be determined at the same point in time as M′ and ΔM, because M exists prior to M′ and ΔM. The advance of M is temporally and logically prior to the recovery of M′ and ΔM. Money must be advanced before it can be recovered. Since advance and recovery do not happen at the same time, M and M′ cannot be determined at the same time; i.e., they cannot be determined simultaneously. Furthermore, the many overlapping individual circuits of capital have different turnover times and are at different phases of their circuits at the same time, which makes the simultaneous determination of all the prices in all these circuits impossible. Finally, simultaneous determination also does not allow for the prior determination of the total surplus-value, the fundamental premise of Marx's theory of the production and distribution of surplus-value.[33]

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31   Marx sometimes referred to the 'intermediate stages' in his theory (some of these passages will be discussed in Chapter 3). The main 'intermediate stage' is the determination of the total surplus-value and the rate of profit prior to its distribution and the determination of prices of production. The term 'intermediate stages' obviously suggests the logic of sequential determination. In the logic of simultaneous determination, there are no 'intermediate stages'; everything is determined at once.

32   The 'cost of production' theories of value mentioned above in Section 5 are also all based on the logical method of sequential determination in the sense of given money costs, but not in the sense of the prior determination of the total surplus-value.

33   Andrew Kliman and Ted McGlone and other TSSI authors were the first to emphasise this incompatibility between Marx's theory and simultaneous determination. Their interpretation of 'temporal' determination is similar to my sequential determination, with some differences; see Chapter 9.

Kurz and Salvadori argue that, since 'commodities are produced by commodities', there is no way to avoid simultaneous determination.[34] I think that Marx would say in reply that in capitalism *commodities are produced by capital*, and capital is a *money-making process*, the self-valorisation of the initial money capital advanced, and analysis of this real process of valorisation requires sequential determination. Capital is a process that begins with the advance of a definite quantity of previously existing money capital M, and ends at some later point in time with the recovery of more money (M′ = M + ΔM). M is not an unknown, whose quantity is determined simultaneously with M′ and ΔM. M is a known quantity at the beginning of the process, the actual M advanced to purchase means of production and labour power, and the main goal of Marx's theory is to explain how this actual pre-existing initial M becomes M + ΔM as a result of this process.

We will see in Chapter 6 below (Section 2.1) that in order to determine simultaneously the prices of inputs and outputs and the rate of profit, Sraffian theory must make the following unrealistic assumptions: (1) that fixed capital is entirely consumed in every period, and (2) that all industries have the same turnover period – or all the unequal turnover periods in different industries are assumed to be converted into a hypothetical unit turnover period (for example, a week) and a hypothetical rate of profit for this unit turnover period is determined, rather than the actual annual rate of profit as in Marx's theory.

8   Predecessors of This 'Macro-Monetary' Interpretation

The 'macro-monetary' interpretation of Marx's theory presented in this book has been developed from other prior interpretations of Marx's theory in recent decades which have challenged the standard interpretation and inspired me in various ways. With respect to the 'macro' aspect of the prior determination of the total surplus-value, the main influences have been Paul Mattick, Roman Rosdolsky, and David Yaffe. Mattick emphasised that the total amount of surplus-value is determined prior to its distribution in his analysis of the limits of Keynesian economic policies and in his critique of Baran and Sweezy's argument that monopolies are able to overcome the tendency of the rate of profit to fall (the 'law of the rising surplus'). Mattick argued that monopolies could *not affect* the total amount of surplus-value *produced*, but could affect

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34   Kurz and Salvadori 2005a, p. 77.

only the *distribution* of surplus-value between monopolistic and competitive industries.[35] Rosdolsky called attention to Marx's distinction between capital in general and competition in the *Grundrisse*, in which Marx emphasised that the total surplus-value is determined prior to its distribution (at the level of abstraction of capital in general) and that the distribution of surplus-value (at the level of abstraction of competition) does not affect the total amount of surplus-value produced. And Yaffe developed further Mattick's analysis of government policies, and emphasised that the distinction between the production and distribution of surplus-value corresponds to the two main levels of abstraction in Marx's theory of capital in general and competition.

With respect to the 'monetary' aspect of my interpretation of Marx's logical method – that the initial givens in Marx's theory are the initial quantities of money capital M advanced to purchase means of production and labour power – the main influence has been the 'New Interpretation' first presented in the early 1980s by Duncan Foley and Gérard Duménil (independently). The main innovation of the New Interpretation from my perspective has to do with the determination of *variable capital*. Instead of deriving variable capital from a given quantity of means of subsistence (as in the standard interpretation), variable capital is *taken as given* directly, as the actual money wage advanced to purchase labour power in the real capitalist economy (similar to my interpretation of variable capital). And the important point is that this *same actual quantity* of variable capital (money wage) is taken as given in both the theory of value and surplus-value in Volume I and in the theory of prices of production in Volume III. Therefore, according to this interpretation, Marx did *not* fail to transform variable capital from values to prices of production in Volume III, because variable capital is not supposed to be transformed. However, the New Interpretation continues to interpret *constant capital* in the standard way – that constant capital is derived from given physical quantities of means of produc-

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35   Mattick was also the first to rigorously extend and develop Marx's theory to the all-important twentieth-century question of the effectiveness (or lack thereof) of Keynesian government policies. He is the *only theorist* who predicted, back in the 'golden age' of the 1950s and 60s, that this period of relative prosperity, like all periods of prosperity in capitalism in the past, would be temporary and would come to an end; that the Keynesian policies that are supposed to stabilise capitalism have their intrinsic limits, and that once these limits are reached, then capitalism would fall again into another global great depression. We are now witnessing before our very eyes the awful truth of Mattick's prediction 50 years ago. This is an unsurpassed theoretical achievement, much greater than those of the bourgeois economist Nobel Prize winners (but of course much too subversive for a Nobel Prize).

tion, first as the labour value of the means of production in Volume I and then as the price of production of the means of production in Volume III. Therefore, the New Interpretation argues that Marx made a mistake with respect to constant capital (which must be corrected), but not with respect to variable capital. The New Interpretation is discussed at length in Chapter 8. It is argued that by taking only the money variable capital as an initial given, the New Interpretation 'only goes halfway' in breaking away from the standard interpretation of Marx's theory, and that it should 'go all the way', with parallel and more consistent logic, and take the money constant capital as an initial given as well.

With respect to the 'sequential determination' aspect of my interpretation of Marx's logical method, the most important influence has been the 'temporal single system' interpretation (TSSI) first presented in the 1980s by John Ernst, Andrew Kliman, Ted McGlone, and Alan Freeman. Prior to the TSSI, the Sraffian interpretation of Marx's theory in terms of a system of simultaneous equations was almost universally accepted. Even the other recent reinterpretations of Marx's theory to be discussed in Part 2 of this book generally accepted the method of simultaneous determination. At first, I wasn't sure about this point myself; I thought that Marx's theory might be compatible with simultaneous determination. But then I realised, in large part because of the arguments of the proponents of the TSSI, that the other aspects of Marx's logical method that I emphasise – the prior determination of the total surplus-value and the money capital advanced (M) taken as given – require the sequential determination of these variables. Therefore, I came to the conclusion that the TSSI is correct in the sense that Marx's theory is not based on the logic of simultaneous determination, but is instead based on the logic of sequential or temporal determination. This is a very important contribution. However, there are also important differences between our interpretations with respect to other aspects of the transformation problem which are discussed in Chapter 9.

This book attempts to build on these prior challenges to the standard interpretation of Marx's theory, and to explore in greater depth these key aspects of Marx's logical method, and their role in the theory of value and surplus-value in Volume I and the theory of the distribution of surplus-value and prices of production in Volume III. Chapter 2 presents an algebraic summary of 'macro-monetary' interpretation presented in this book in order to further clarify the logic. Chapters 3 and 4 will present substantial textual evidence to support this 'macro-monetary' interpretation of Marx's logical method. It has become clearer in recent decades from the publication of the new MEGA (*Marx/Engels Gesamtausgabe*) in German and the partial English translation (*Marx and Engels Collected Works*) that Marx wrote *four drafts* of *Capital* (the *Grundrisse*, the *Manuscript of 1861–63*, the *Manuscript of 1864–65*, and the final

published versions), not just two drafts as previously thought (the *Grundrisse* and the final versions).[36] In reviewing the textual evidence, it is important to include all four of these drafts and examine the development of Marx's thinking on the key theoretical issues related to the 'transformation problem' – the distinction between the production and the distribution of surplus-value (the prior determination of the total surplus-value) and the circuit of money capital ($M - C \ldots M'$) as the logical framework of Marx's theory, which takes the initial M as given in order to explain the origin and magnitude of the ΔM. For the purposes of this book, the two middle manuscripts written in the first half of the 1860s (a very creative period for Marx) are the most important, because these are the manuscripts in which Marx developed his theory of the distribution of surplus-value and prices of production. Chapter 5 discusses the role of money and the money commodity in Marx's theory and in particular in the transformation of values into prices of production. Part 2 of this book first reviews the standard Bortkiewicz-Sweezy and Steedman interpretations of Marx's theory and then examines other recent challenges to the standard interpretation – Shaikh's Iterative interpretation, Foley and Duménil's New Interpretation, Kliman-McGlone's Temporal Single System interpretation, Wolff-Roberts-Callari's interpretation, and Fine-Saad-Filho's interpretation – each in a separate chapter. Part 3 presents a final chapter that reviews the main conclusions of the book.

We turn next (Chapter 2) to an algebraic summary of this 'macro-monetary' interpretation of Marx's theory introduced in this chapter and explained in greater detail in the rest of Part 1.

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36   See Dussel 2001a and Moseley 2001b.

Algebraic Summary: A 'Macro-Monetary' Interpretation of Marx's Theory

This chapter summarises in algebraic form the 'macro-monetary' interpretation of Marx's theory of the production and distribution of surplus-value presented in this book. It is hoped that this algebraic summary will clarify the main points and will serve as a reference point for later chapters, which will provide further arguments and extensive textual evidence to support the interpretation.

1   Theory of the Production of Surplus-Value

I argued in Chapter 1 that the general analytical framework of Marx's theory of the production of surplus-value is the circuit of money capital:

$$M - C \ldots P \ldots C' - M' \qquad \text{where } M' = M + \Delta M.$$

In Volume I, this circuit of money capital applies to the total capital in the economy as a whole. The main question of Volume I is the determination of the magnitude of the total surplus-value produced in the economy as a whole. This aggregate circuit does not imply that all the individual capitals go through the different phases at the same time (obviously they do not), but only that they all go through these phases *in this order* – money capital is advanced and then more money capital is recovered, together with ΔM. All the individual capitals that go through these similar circuits over the course of a year can be added up to obtain the aggregate totals, which is the subject of Volume I. Most of the variables discussed in this section refer to aggregate variables for the economy as a whole (except equations 10 and 12–15).

The initial money capital M at the beginning of the circuit of money capital consists of two components – constant capital invested in means of production and variable capital invested in labour power. Part of the advanced constant capital is fixed capital, which is invested in long-lasting means of production and which is transferred to the value of the output 'bit by bit' and thus is recovered 'bit by bit' by the annual depreciation charge over the expected

lifetime of the means of production.[1] If we consider a period of time of one year, then constant capital consists of the annual depreciation cost of fixed capital plus the circulating constant capital of that year (the cost of raw materials, auxiliary materials, etc.), and variable capital is the annual wage cost. The sum of these costs is the *cost price* of commodities.

The final money capital recovered M′ in a year is equal to the value of the commodities produced and sold (P). Therefore, the surplus-value produced in one year is by definition equal to the difference between the value of the commodities produced during this year and the cost price of these commodities (K):

(1) $S = P - K$

These two determinants of surplus-value will be examined in turn.

1.1   *Cost Price*

As just discussed, the cost price of commodities is the sum of two components: consumed constant capital (C)[2] and variable capital (V):

(2) $K = C + V$

I argued in Chapter 1 that constant capital and variable capital are *taken as given* in Marx's theory of surplus-value, as the actual (long-run equilibrium) quantities of money capital advanced to purchase means of production and labour power (equal to the price of production of the means of production and means of subsistence, respectively).[3] These actual quantities of money

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1 The annual depreciation cost of constant capital of each type of means of production (D_i) is equal to the total fixed constant capital invested in each type of means of production (FC_i) divided by its expected lifetime (Y_i, in years) (i.e., $D_i = FC_i / Y_i$). The fact that depreciation is computed in this way is itself evidence that constant capital (in this case fixed constant capital) is taken as given in Marx's theory of value and surplus-value.

2 Please note that this C which stands for consumed constant capital (depreciation cost of fixed constant capital plus circulating constant capital) is not the same as the C which stands for commodities in the circuit of money capital. The context should make clear which C I am talking about in any passage.

3 As discussed in Chapter 1, by 'actual' I mean quantities of constant capital and variable capital that are equal to the actual long-run equilibrium prices (i.e., prices of production) of the means of production and means of subsistence, respectively; i.e., as opposed to quantities

capital are advanced, and therefore they exist at the beginning of the circuit of capital, and can be taken as given as such, as known data in a process to be analysed. The precise question of Marx's theory of surplus-value is this: how does this pre-existing given quantity of money capital become a larger quantity of money capital (through the production and sale of commodities)? In order to indicate that constant capital and variable capital are taken as given, I will use a bar over these variables in the equations below. Thus equation (2) can be rewritten as follows:[4]

$$(2') \quad K = (\bar{C} + \bar{V})$$

This is the first sense in which constant capital and variable capital are taken as given – as components of the *cost price* that are subtracted from the value of the commodities produced in order to determine the quantity of surplus-value. As components of the cost price, there is no difference between constant capital and variable capital; both are costs which must be recovered before surplus-value can be appropriated. We will see below that these same quantities of constant capital and variable capital are also taken as given in the determination of the value and surplus-value of commodities, but in this case there is an all-important difference between constant capital and variable capital.

1.2   *Value-Price*

The 'value' of commodities in Marx's theory is a complicated concept which has three interrelated aspects: the *substance* of value (abstract labour), the *magnitude* of value (socially necessary labour time), and the *necessary form of appearance* of value (money and prices) (see the titles and the contents of the sections of Chapter 1 of Volume I of *Capital*). After Section 3 of Chapter 1, the 'value' of commodities when presented without further attribution usually refers to the third aspect – the form of appearance of value in terms of money and prices. For example, in the key Chapter 7 of Volume I, in which Marx presents his basic theory of surplus-value, the 'value' of the cotton and the yarn is always stated in terms of shillings (e.g., 15 shillings, 30 shillings, etc.). In order to be as clear as possible, I will call the price form of appearance of value in units

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of constant capital and variable capital that are equal to hypothetical long-run equilibrium prices of these inputs (the values of these inputs), as in the standard interpretation.

4   As discussed in Chapter 1, the precise magnitude of C might change up until the time of the sale of the output, but C is still taken as given, because it still comes from circulation and is still logically and chronologically prior to the sale of the output.

of money the 'value-price' of commodities. Others (e.g., Shaikh) have called these prices 'direct prices'.[5]

Furthermore, Marx distinguished between the value-price of commodities as *products of capital* and the value-price of *simple commodities* (as analysed by Marx in Part 1 of Volume I). One key difference has to do with the 'transferred value' component of the value-price of commodities. The 'transferred value' (or 'old value') component of the value-price of simple commodities is proportional to the labour time required to produce the means of production, but the 'transferred value' component of the value-price of commodities produced by capital is the *actual constant capital* advanced to purchase the means of production (i.e., the same constant capital that is taken as given as a component of the cost price in equation (2)), which tends to be equal to the *price of production* of the means of production, and which is not proportional to the labour time required to produce the means of production. The means of production are purchased with constant capital at the beginning of the circuit of money capital, and thus the labour time required to produce the means of production *has already been represented objectively and socially* as this actual quantity of money constant capital advanced (even if somewhat misrepresented; i.e., disproportionately); and it is this quantity of actual money capital advanced that becomes the first component of the value-price of commodities produced by capital. This previously existing money constant capital is transferred directly, as a given quantity of money capital, to the value-price of commodities produced by capital. Since the quantity of constant capital transferred cannot be greater than the original quantity of constant capital advanced, constant capital cannot be a source of surplus-value (that is why Marx called this component of capital 'constant').[6]

In contrast, the given variable capital plays an entirely different role in the determination of value and surplus-value. The given variable capital is *not transferred* to the value-price of the product; i.e., variable capital does not become one component of the value-price. Instead, variable capital is *replaced* by the current labour that it purchases, and this living labour, when put to work, produces more value than it is paid. One part of this new value produced by current labour allows capitalists to recover their variable capital paid to workers, and the remaining part becomes the surplus-value of capitalists.

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5   See Moseley 2004 for further discussion of this issue.

6   This difference between simple commodities and commodities as products of capital is discussed further in Chapter 4, Section 3. Other authors who have emphasised the difference between simple commodities and commodities as products of capital include Wolff-Roberts-Callari, Kliman-McGlone, and Ramos.

Therefore, the total value-price of commodities produced by the total social capital in a year is the sum of two components: the given constant capital ($\bar{C}$), which existed previously ('old value') and is transferred to the value-price of the output, and the 'new value' (in money terms) produced by the labour of the current period (N):

(3) $P = \bar{C} + N$

In this way, the given actual constant capital becomes a determining factor of the total value-price of the commodities produced.

The new-value component of the value-price of commodities (N) (in units of money) is in turn determined by the product of the quantity of the *current* socially-necessary labour-time (L) (in units of abstract labour-hours),[7] and the (money) new value produced *per hour* of abstract labour (m):[8]

(4) $N = m\,L$

This is the *key assumption in Marx's labour theory of value*: that the (money) new value produced in the current period in the economy as a whole is proportional to the quantity of socially-necessary labour time employed in the economy as a whole.[9]

With regard to the proportionality factor m, Marx assumed throughout *Capital* that money is a commodity (e.g., gold). In this case, m is assumed to be determined by the quantity of gold produced per hour of abstract labour (e.g., 0.5 shillings per hour in the example in the presentation of his theory of surplus-value in Chapter 7 of Volume I). The product of gold labour is directly and immediately money value, a quantity of money value equal to its own physical amount. An hour of abstract labour in all other industries is assumed to produce the *same quantity of money value* (m) as one hour of abstract labour in the gold industry. The difference between gold labour and

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7   It should be emphasised that the unit of measure of socially-necessary labour time is *abstract* labour, not *concrete* labour; meaning that different concrete labours with unequal skills and unequal intensities are assumed to be converted into unskilled labour of average intensity.

8   The proportionality factor m has been called by Foley and others the 'monetary expression of labour-time' or the 'MELT'; see Chapter 8.

9   This assumption is another key difference between Marx's theory and Sraffa's theory. There is no new-value component of the prices of commodities in Sraffa's theory; i.e., no new value produced by current labour. Labour is considered in Sraffa's theory *only as a cost*, not as a producer of value, and in this respect (cost) labour is no different from material inputs.

all other labour is that one hour of abstract labor in the gold industry produces actual money value directly, as money itself, whereas one hour of abstract labour in all other industries produces the same amount of money value in the form of the new-value component of the value-price of commodities, which still has to be converted into actual money value through sale. I argue in Chapter 5 (and in Moseley 2005) that the transformation of values into prices of production in Volume III does not affect the value of **m**. (I also discuss the determination of **m** in the case of contemporary non-commodity money in Moseley 2011b).

Substituting equation (4) into equation (3), we obtain:

(5) $P = \bar{C} + mL$

Thus, the first component of the value-price of commodities produced by capital – the constant capital component – is 'old value', value that existed prior to the production process in which it was consumed, and exists at the beginning of this production process in the form of the money constant capital advanced to purchase the means of production. The previously existing money constant capital is transferred directly, as a quantity of money capital, to the value-price of the commodities produced by capital during this production process. By contrast, the second component is 'new value' – value that did not exist prior to a given production process, and which is instead the result of the labour of this production process.

Substituting equations (2′) and (3) into equation (1), we obtain:

(6) $S = P - K$
     $S = (\bar{C} + N) - (\bar{C} + \bar{V})$

We can see that the given constant capital is a component of both the value-price and the cost price of commodities. Marx referred to this double inclusion of constant capital as the 'dual significance of constant capital'.[10] As a result of its 'dual significance', constant capital cancels out in the determination of the surplus-value, and thus equation (6) simplifies to:

(7) $S = N - \bar{V}$
     $S = m\,L - \bar{V}$

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10   Marx 1981, pp. 119–20.

Thus, according to this theory, the quantity of surplus-value is determined by the difference between the new value produced by workers and the variable capital they are paid. In this way, the given actual magnitude of variable capital becomes a determining factor (inversely) of the actual total surplus-value produced. By contrast, the quantity of surplus-value does not depend on the constant capital invested in means of production. The given constant capital is a determinant of the value-price of commodities, but it is not a determinant of surplus-value.

Similarly to constant capital, the given actual variable capital tends to be equal to the *price of production* of the means of subsistence purchased by workers with the variable capital (their wages), which is not proportional to the labour-time required to produce these means of subsistence. Nonetheless, the actual quantity of variable capital is still subtracted from the new value produced in order to determine the actual surplus-value produced. Otherwise, variable capital and surplus-value of commodities would refer to hypothetical quantities (proportional to the labour-times required to produce wages goods and surplus goods, respectively), not actual quantities of money capital. To the contrary, Marx's theory of surplus-value is about the actual quantity of surplus-value and actual quantities of money capital from the very beginning, not hypothetical quantities of surplus-value and variable capital that would later have to be transformed into actual quantities.

1.3 *Average Worker*

Marx's theory of surplus-value is presented in Chapter 7 of Volume I in terms of an average worker, which represents the working class as a whole, and whose average working day is divided into two parts – necessary labour (**NL**) and surplus labour (**SL**). Necessary labour is defined in Chapter 9 of Volume I as the number of hours of abstract labour that it takes the average worker to produce (money) new value that is equal to the average variable capital that is paid to the worker *per day* (V_i); algebraically: $NL_i = V_i / m$ (see Chapter 4, Section 5.1, for further discussion of necessary labour). The remainder of the working day is surplus labour ($SL_i = L_i − NL_i$), i.e., the labour time in which the (money) new value produced by the worker no longer goes to reproduce an equivalent of the variable capital paid to the worker, but instead becomes the surplus-value of capitalists.

Interpreting equation (5) in terms of an average representative worker and substituting these definitions of NL and SL, the surplus-value produced by the average worker per day is determined by:

(8) $S_i = m\, L_i - \bar{V}_i$

$\qquad = m\, L_i - m\,(NL_i)$

$\qquad = m\,(L - NL_i)$

$\quad S_i = m\,(SL_i)$

Thus the quantity of surplus-value produced by the average representative worker per day is proportional to the worker's surplus labour time, determined in this way.

This same theory of surplus-value applies to each and every worker in the capitalist economy as a whole. Therefore, one can aggregate this theory over all workers, or as a simplification, multiply the average surplus-value produced per worker per day by the total number of workers employed (n). Then, in order to obtain the total *annual* surplus-value produced in the economy as a whole, the surplus-value produced by all workers in a day is multiplied by the average number of working days per year (d). Thus we have:

(9) $S = (d\, n)\,(m\, SL_i)$

This then is Marx's 'surplus labour' theory of surplus-value. It explains the actual total annual surplus-value produced in the capitalist economy as a whole, and it concludes that the actual total surplus-value is proportional to the total amount of surplus labour of workers, with m as the factor of proportionality (i.e., each hour of surplus labour produces m amount of money surplus-value). This is the main conclusion of Volume I. Most of the rest of Volume I is concerned with the main ways to increase surplus-value by increasing surplus labour: lengthening the working day and increasing the intensity of labour (absolute surplus-value) and reducing necessary labour through technological change (relative surplus-value).

2   Theory of the Distribution of Surplus-Value and Prices of Production

I argued in Chapter 1 that the main subject of Volume III is the distribution of surplus-value, or the division of the predetermined total surplus-value into individual parts (see Chapter 3 for an extensive discussion of this issue).

2.1   *Prices of Production*

The first and most fundamental aspect of the distribution of surplus-value, presented in Part 2 of Volume III, is the equalisation of the rate of profit across

industries and the determination of prices of production. This was the 'chief stumbling block' of Ricardo's labour theory of value, and it was incumbent on Marx to explain how his labour theory of value (and surplus labour theory of surplus-value) could solve this important problem and be reconciled with the empirical tendency toward an equal rate of profit across industries. That is the objective of Marx's theory of prices of production. According to Marx's theory, the price of production in each industry (PP_i) is determined by the sum of two components: the *cost price* (K_i), which is the sum of the constant capital and variable capital consumed in the industry ($K_i = C_i + V_i$), and the *average profit* for the industry, which is determined by the product of the general rate of profit (R) and the total stock of capital invested in that industry (M_i):

(10) $PP_i = \bar{K}_i + R \, \bar{M}_i$[11]

We can see that Marx's prices of production are *not unit prices*, in contrast to Sraffian theory, but are instead the sum of the total annual costs in an industry plus the average annual profit. A better name for Marx's prices of production would be 'gross annual industry revenue'. This is another fundamental difference between Marx's theory and Sraffa's theory – they are not even about the same micro price variables. One could derive unit prices from Marx's prices of production by dividing the price of production (gross annual industry revenue) in each industry by the quantity of annual output produced in that industry. But it is not clear why one would want to do that. The main point of the concept of 'prices of production' is to explain how Marx's labour theory of value is compatible with the tendency to equalise the rate of profit across industries. Unit prices are not necessary for this explanation, nor do they add anything to it.[12]

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11   Most economic theories have an equation similar to (10) for long-run equilibrium prices = cost + average profit. For example, as discussed in Chapter 1, in neoclassical microeconomics, the long-run equilibrium condition for an industry, which determines the long-run equilibrium price is: $P^* = $ min LAC, where the long-run average cost includes the average profit (disguised as 'opportunity cost'). The decisive advantage of Marx's theory over neoclassical microeconomics is that Marx's theory provides a substantial theory of the average profit and microeconomics simply takes the average profit as given.

12   Marx briefly discussed unit prices in Section 1 of the 'Results' manuscript; Marx 1977a, pp. 957–71. In this manuscript, Marx assumes that prices = values, but the point he makes about the determination of unit prices remains true after prices of production have been determined – unit prices for each commodity are determined by dividing the price of production of that industry (i.e., the gross annual industry revenue) by the quantity of annual output produced.

The following paragraphs will discuss each of these two components of prices of production in turn.

2.2   *Average Profit and Rate of Profit*

The second component of prices of production, the average profit, is equal to the product of the general rate of profit and the stock of capital invested in each industry. The general rate of profit is itself determined by the ratio of the actual total annual surplus-value, which is determined in Volumes I and II, to the actual total stock of capital invested, which is taken as given:

$$(11)\ \ \mathbf{R = S / \bar{M}}$$

In this way, the total surplus-value that is produced in the economy as a whole is distributed across individual industries according to the relative proportion of actual capital invested in each industry.

Since the numerator in the rate of profit **S** is the actual total annual surplus-value, and the denominator **M** is the actual total stock of capital invested, equal to the prices of production of the inputs purchased, the rate of profit determined in this way is the actual *price* rate of profit, not a hypothetical 'value rate of profit' (in which both **S** and **M** are proportional to the labour values of particular bundles of goods), which later has to be 'transformed' into the actual price rate of profit. The rate of profit in Marx's theory is the price rate of profit from the beginning. Marx is accused of mistakenly using the 'value rate of profit' to determine prices of production (for example, by Ian Steedman); but this accusation is false. Marx did not use the 'value rate of profit' to determine prices of production, because there is no 'value rate of profit' in his theory that is different from the actual price rate of profit for the economy as a whole. Marx does present hypothetical 'value rates of profit' for individual industries, as a pedagogical device to explain the difference between the surplus-value produced in an individual industry and the profit appropriated in that industry; but since in the aggregate total profit = total surplus-value, there is no aggregate 'value rate of profit' that differs from the aggregate price rate of profit. The rate of profit in Marx's theory of prices of production is the actual price rate of profit, which is determined by the prior theory of the total surplus-value.

We can also see that, contrary to Sraffa's theory, the rate of profit is *not determined simultaneously* with the prices of production of the output. Instead, the rate of profit is determined prior to prices of production, and taken as given in the sequential determination of prices of production. This method of determination of the rate of profit is the key 'intermediate link' between

Marx's theory of the total surplus-value in Volume I and his theory of prices of production in Volume III.

2.3   *Cost Price*

The cost price (K_i) and the total stock of capital invested (M_i) in each industry are *taken as given*, just as the total cost price (K) and the total capital invested (M) are taken as given in the Volume I theory of the total surplus-value, and for the same reasons: the individual amounts of money constant capital and variable capital invested in each industry are advanced in the sphere of circulation, prior to production, just as the total amounts of money constant capital and variable capital for the economy as a whole. Similarly, the inputs to individual industries are commodities with already existing prices, just as are the inputs to capitalist production as a whole. Therefore, these individual amounts of money constant capital and variable capital and prices of commodity inputs already exist, prior to the production and sale of the output, and are taken as given as such in the Volume III theory of prices of production, as known data. These already existing and presupposed quantities of money capital and prices of inputs are determining factors of the prices of production of commodities in Volume III, just as they are determining factors of the total value and surplus-value of commodities in Volume I. In order to indicate that the cost price is taken as given for this reason, I will continue to use a bar over these variables, as in the prior macro theory of the total surplus-value.

And the crucial point with respect to the controversy over the 'transformation problem' is that the industry quantities of $\bar{K}_i$ and $\bar{M}_i$ that are taken as given in Marx's theory of prices of production in Volume III are *the same quantities* as the total $\bar{K}$ and the total $\bar{M}$ that are taken as given in the theory of the total surplus-value in Volume I – the *actual* quantities of money capital advanced in the real capitalist economy to purchase means of production and labour power, which tend to be equal to the prices of production of the means of production and means of subsistence. The only difference is that, in Volume III, the actual quantities of constant capital and variable capital advanced are disaggregated into individual industries. The sums of the individual quantities of constant capital and variable capital that are taken as given in the Volume III theory of prices of production are by definition equal to the total quantities of constant and variable capital that are taken as given in the Volume I theory of the total surplus-value. We will see in Chapter 4 (Section 4.3) that Marx stated and assumed many times that *the cost price is the same* in the determination of both the value-prices of commodities and their prices of production.

To clarify this crucial point further: applying equation (3) for the value-price of commodities to individual industries, we obtain:

$$(12) \quad P_i = \bar{C}_i + N_i$$

As discussed above, the new-value component of the value-price of commodities is divided into two parts: one part which replaces the money variable capital paid for labour power and another part which is surplus-value:

$$(13) \quad N_i = \bar{V}_i + S_i$$

Substituting equation (13) into equation (12), we obtain:

$$(14) \quad P_i = \bar{C}_i + \bar{V}_i + S_i$$

which (combining $\bar{C}_i + \bar{V}_i$) simplifies to:

$$(15) \quad P_i = \bar{K}_i + S_i$$

Comparing equation (15) for value-prices and equation (10) above for prices of production, we can see that the *cost price component is the same* for *both* value-prices and prices of production – the actual quantities of money capital advanced and consumed in a given year. The only component that is different is the second component – whether surplus-value or average profit.

This is the reason why the quantities of constant capital and variable capital *do not change*, or *do not have to be transformed*, in the transition from the macroeconomic theory of the total surplus-value in Volume I to the microeconomic theory of individual prices of production in Volume III – because the *same quantities* of constant capital and variable capital are *taken as given* in both stages of the theory – the actual quantities of money capital advanced and consumed in the real capitalist economy. In other words, these actual given quantities of money constant capital and variable capital 'remain invariant' in the transition from the macro theory of the total surplus-value in Volume I to the micro theory of the individual parts of surplus-value in Volume III. It is for this reason that Marx did *not* 'fail to transform these inputs' – because the inputs do not have to be transformed, but instead remain invariant, as the actual given quantities of money capital advanced and consumed.

We can also see that the inputs of constant capital and variable capital are *not determined simultaneously* with the prices of production of the outputs. Instead, the inputs of constant capital and variable capital are taken as given in the sequential determination of the prices of production of the outputs.

Finally, we can also see from the above summary that Marx's theory of the production and distribution of surplus-value is about a 'single system' –

the actual capitalist economy – which is first analysed at the aggregate level and then analysed at the level of individual industries. The general rate of profit is determined at the aggregate level and then presupposed at the level of individual industries. The total amounts of constant capital and variable capital are taken as given at the aggregate level, and the individual amounts of constant capital and variable capital are taken as given at the industry level. At the aggregate level, the prices of individual commodities are not really considered. Marx made the provisional assumption in Volume I that the prices of individual commodities are equal to their value-prices, because that is the only assumption consistent with the labour theory of value at this macro level of analysis, but it is not assumed that commodities actually exchange at their value-prices. Individual commodities exchange only at prices of production, which are explained in Volume III.[13]

3   Marx's Two Aggregate Equalities Always Satisfied

An important implication of this 'macro-monetary' interpretation is that Marx's two aggregate equalities (total price of production = total value-price and total profit = total surplus-value) are *always both true simultaneously*, as Marx claimed. These two aggregate equalities are not true only for the special case of equal compositions of capital across industries, but are also true for the general case of unequal compositions of capital. These two aggregate equalities follow of necessity from Marx's logical method of determination of constant capital and variable capital and the general rate of profit.

Because the general rate of profit is determined as the ratio of the predetermined total surplus-value to the total capital advanced ($R = S/M$), the sum of all individual profits must of necessity be equal to the predetermined total surplus-value:

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13   Böhm-Bawerk 1949 criticised Marx for assuming that prices are equal to values (in Volumes I and II) *and* that prices are equal to prices of production (in Volume III), which he said is contradictory: prices cannot both equal values and not equal values. But Böhm-Bawerk did not understand Marx's logical method of the two levels of abstraction – the total economy and individual industries. In Marx's theory, total price = total value, but individual prices = prices of production. There is no contradiction with Marx's logical structure of the two levels of abstraction.

$$\Sigma \pi_i = \Sigma R M_i = R \Sigma M_i = R M = (S/M) M = S$$

Similarly, because the quantities of constant capital and variable capital that are taken as given in the determination of prices of production in Volume III *are the same* as the quantities of constant capital and variable capital that are taken as given in the determination of the total price ($C = \Sigma C_i$ and $V = \Sigma V_i$), the sum of all individual prices of production must of necessity be equal to the total value-price as determined in Volume I:

$$\begin{aligned}
\Sigma PP_i \ &= \Sigma \left[(C_i + V_i) + R M_i \right] \\
&= \Sigma C_i + \Sigma V_i + R \Sigma M_i \\
&= C + V + S \\
&= P
\end{aligned}$$

In other words, one does not have to 'choose an invariance condition', i.e., choose only one of these two aggregate equalities to be true. All the key aggregate quantities in Marx's theory – constant capital, variable capital, and surplus-value – remain invariant in the transition from the macroeconomic theory in Volume I to the microeconomic theory in Volume III, and thus both aggregate equalities are always satisfied, as Marx argued. These aggregate equalities are not *conditional equalities*, true only for special cases, but are instead *identities*, which are always true, because of the nature of Marx's logical method – the prior determination of the total surplus-value and the initial money capital advanced taken as given.

Marx's Theory of the Production and Distribution of Surplus-Value: The Prior Determination of the Total Surplus-Value

All economists share the error of examining **surplus value not as such**, in its pure form, but in the **particular forms of profit and rent**. What theoretical errors must necessarily arise from this will be shown more fully in Chapter III, in the analysis of the greatly changed form which surplus value assumes as profit.[1]

When we speak about profit and the rate of profit, then *surplus value* is supposed to be *given*. The influences therefore which determine surplus value have all operated. This is the **presupposition**.[2]

The capitalists, like **hostile brothers**, divide among themselves the **loot of other people's labour**, so that on an average one receives the same amount of unpaid labour as another.[3]

*The general rate of profit is formed through the total surplus value produced being calculated on the total capital of society (**the class of capitalists**).[4]*

For the **total capital**, however, what has been explained in Chapter 1 holds good. **In capitalist production, each capital is assumed to be a unit, an aliquot part of the total capital**. Formation of the general rate of profit. (**Competition**).[5]

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1 Marx MECW, v. 30, p. 348 [TSV, v. I, p. 40]. A reminder that regular *italics* in quotes were in the original and bold ***italics*** are added by me. The German word *Mehrwert* is translated in the MECW and in the *Grundrisse* as 'surplus value', without the hyphen in between, unlike most other editions of Marx's works. I will quote the MECW and the *Grundrisse* as is, but will follow the usual convention with the hyphen in my text.

2 Marx and Engels 1989a, p. 69 [TSV, v. III, p. 228].

3 Marx and Engels 1989a, p. 264 [TSV, v. II, p. 29].

4 Marx MEGA, v. 32, p. 69 [TSV, v. II, p. 433].

5 Marx MECW, v. 33, p. 299 [TSV, v. I, pp. 415–16].

Profit, as we are originally faced with it, is thus *the same thing as surplus-value* save in a mystified form, though one that necessarily arises from the capitalist mode of production.[6]

If *the limits of value and surplus-value are given*, it is easy to perceive how the competition between capitals transforms values into prices of production and still further into commercial prices, transforming surplus-value into average profit. But without these limits, there is absolutely no way of seeing why competition should reduce the general rate of profit to one limit rather than to another, to 15 per cent instead of 1,500 percent.[7]

Profit (profit of enterprise plus interest) and rent are nothing more than characteristic forms assumed by particular portions of the surplus-value in commodities. The size of the surplus-value sets a *quantitative limit* for the parts it can be broken down into.[8]

The best points in my book are: ... 2) the treatment of *surplus-value independently of its particular forms* as profit, interest, rent, etc. ... The treatment of the particular forms by classical economy, which always mixes them up, is a regular hash.[9]

This chapter provides substantial textual evidence that Marx's theory is based on two main levels of abstraction – the *production* of surplus-value and the *distribution* of surplus-value. The main question at the level of abstraction of the production of surplus-value is the determination of the total amount of surplus-value produced in the economy as a whole, and the main question at the level of abstraction of competition is the division of the total surplus-value into individual parts – first the equalisation of the rate of profit across industries and then the further division of the total surplus-value into commercial profit, interest, and rent. The fundamental premise of this logical structure is that the total surplus-value is determined at the first level of abstraction (the production of surplus-value) and is taken as a predetermined magnitude at the second level of abstraction (distribution of surplus-value), i.e., in the division of this predetermined total surplus-value into individual parts. Thus, there is a strict logical progression from the first level of abstraction to the second level:

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6   Marx 1981, p. 127.
7   Marx 1981, p. 429.
8   Marx 1981, p. 971.
9   Marx MEGA, v. 42, p. 407.

first the production of surplus-value and the determination of the total surplus-value and then the distribution of surplus-value and the determination of the individual parts.

This logical progression from the determination of the total amount of surplus-value to the determination of the individual parts of surplus-value follows directly from Marx's labour theory of value and surplus-value. According to Marx's theory, all the individual parts of surplus-value come from the same source – the surplus labour of workers. Therefore, the total amount of surplus-value must be determined prior to its division into individual parts. And the total amount of surplus-value is determined by surplus labour, and by surplus labour alone.

We will see below that this fundamental premise is repeated many times in all the drafts of *Capital*, especially in the drafts of Volume III of *Capital* in the *Manuscript of 1861–63* and the *Manuscript of 1864–65*. Other authors who have also emphasised this basic methodological premise of the prior determination of the total surplus-value in Marx's theory include Paul Mattick, Roman Rosdolsky, Enrique Dussel, David Yaffe, and Duncan Foley.

I argue further that this distinction between the production of surplus-value and the distribution of surplus-value is the quantitative dimension of the two basic levels of abstraction in Marx's theory: capital in general and competition. *Capital in general* is defined by Marx as what capital essentially is – the *most essential properties which are common to all capitals* and which distinguish capital from simple commodities or money and other forms of wealth. The most essential common property of all capitals, which is the main question analysed at the level of abstraction of capital in general, is the *production of surplus-value* (including absolute and relative surplus-value). Since this all-important property is shared by each and every capital, the theory of the production of surplus-value at the level of abstraction of capital in general applies to all capitals together, and thus determines the total surplus-value produced by the total capital of society as a whole. Other common properties of all capitals that are analysed at the level of abstraction of capital in general include various characteristics of capital in the sphere of circulation (the turnover time of capital, fixed and circulating capital, etc.) and the appearance of surplus-value and the rate of surplus-value as profit and the rate of profit (including the falling rate of profit).

The main question addressed at the level of abstraction of *competition* is the *distribution of surplus-value*, or the division of the total surplus-value into individual parts.[10] Another related question addressed at the level of abstraction of

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10   The level of abstraction of competition is sometimes referred to as 'many capitals'.

competition is 'revenue and its sources', or the critique of vulgar political economy's explanation of these individual parts of surplus-value.

Therefore, I argue that the basic logical structure of Marx's theory of capital in the three volumes of *Capital* is in terms of these two levels of abstraction:

Basic logical structure of Marx's theory in *Capital*

I. **Capital in general**
   1. *Production of surplus-value*   (Volume I)
   2. Circulation of capital (turnover time)   (Volume II)
   3. Capital and profit (including the falling rate of profit) (Parts 1 and 3 of Vol. III)

II. **Competition**, or the *distribution of surplus-value*
   1. General rate of profit and prices of production   (Part 2 of Volume III)
   2. Commercial profit   (Part 4)
   3. Interest   (Part 5)
   4. Rent   (Part 6)
   5. Revenue and its sources   (Part 7)

This chapter will review the textual evidence from the four drafts of *Capital* – the *Grundrisse*, the *Manuscript of 1861–63*, the *Manuscript of 1864–65* (Volume III of *Capital*), and the final versions of Volumes I and II of *Capital* – to support this interpretation of the two basic levels of abstraction of Marx's theory and will trace the development of Marx's thinking on this key aspect of his logical method, from the *Grundrisse* on.

I have argued in a recent paper that this fundamental logical structure of Marx's theory – capital in general (production of surplus-value) and competition (distribution of surplus-value) – was heavily influenced by Hegel's logic, and in particular the first two moments of Hegel's logic of the Concept – universality and particularity.[11] According to Hegel's logic of the Concept, theoretical explanation begins with a universal, the most essential property of all the objects under study. Theory then proceeds to the particulars, in which further determinations are added to the universal. The universal continues to be true, and is presupposed in the further analysis of the particulars; the universal is itself manifested in different particular forms. Hegel's logic then proceeds to singularity, in which the universal achieves concrete existence and perfect embodiment in a particular object.

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11   Moseley 2013.

The relation between capital in general and competition in Marx's theory, or the relation between the total surplus-value and the individual parts of surplus-value, is essentially the same as the relation between the universal and the particulars in Hegel's logic of the Concept. Marx's theory begins with capital in general, the most essential common property of all capitals taken together. This is the production of surplus-value and the determination of the total surplus-value, which corresponds to Hegel's moment of universality. Marx's theory then proceeds to competition, which analyses the distribution of surplus-value and the division of the total surplus-value into individual parts, and which corresponds to Hegel's moment of particularity. The total surplus-value that is determined in the first stage is still true, and is presupposed in the analysis of the distribution of surplus-value, in which the total surplus-value is manifested in particular forms and divided up into individual parts. (Marx rejected Hegel's interpretation of singularity because the singularity of capital – interest-banking capital – is not the perfect embodiment of the inner nature of capital, but is instead the perfect 'obfuscation' of the inner nature of capital; see Moseley 2013 for further discussion). Marx criticised Hegel for surrounding his method in 'mysticism' (i.e., assuming that the universal is the Absolute Spirit), but Marx praised Hegel for correctly understanding the relation between the universal and the particular forms of the universal.

Marx added a quantitative dimension to Hegel's logic because surplus-value is a quantity (a 'pure quantity'). Marx's quantitative dimension also follows logically from Hegel's conception of the universal and the particulars. Hegel's universal contains within itself its own particulars; Marx's total surplus-value contains within itself the individual parts of surplus-value. Hegel's particulars are the universal itself, with additional determinations; Marx's particular forms of surplus-value are the general form of surplus-value itself, with additional determinations. Hegel's particulars are 'the fulfilment of what the universal is'; Marx's particular forms of surplus-value are the 'fulfilment' of what the general form of surplus-value is. Hegel's universal 'goes forth' into particular forms; Marx's total surplus-value 'goes forth' into particular forms and individual parts. The particular forms 'develop out of the germ' of the total surplus-value.[12]

It is not always clear that Marx's theory in Volume I is about the total capital and the total surplus-value produced in the economy as a whole, because the theory is usually illustrated in terms of an individual capital and even a single, solitary worker (e.g., in the key Chapter 7, in which Marx's basic theory of surplus-value is presented). However, the individual capitals in Marx's

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12   Marx 1973, p. 310.

examples represent the total social capital of the capitalist class as a whole. Individual capitals are not analysed as separate and distinct real capitals, but rather as representatives and 'aliquot parts' of the total social capital. Toward the end of the *Manuscript of 1861–63*, Marx stated in a very important outline of what would later become Part 2 of Volume III (this outline will be examined in Section 2.4 of this chapter):

> In capitalist production [i.e., in Volume 1], *each capital is assumed to be a unit*, an *aliquot part of the total capital.*[13]

Similarly, an individual worker is analysed in terms of what all workers have in common with all other workers – the capacity to produce value and surplus-value – and thus an individual worker represents the working class as a whole. The determinants of the quantity of surplus-value produced by an individual worker – the length of the working day, the intensity of labour, the money wage and the MELT – are *the same for all workers*; hence the same theory applies to all workers and to the sum total surplus-value produced by all workers together.

> What applies to the industrial labour of a single day applies also to the labour set in motion by the entire capitalist class in the course of a year.[14]

Felton Shortall (1994) has also emphasised this representative function of the individual capitals analysed in Volume I.[15] Shortall argues that, in Volume I:

> the individual capital was only considered insofar as it was *stripped of all particularity*. It stood as the immediate *representative of all capitals*, as the abstract generality of capital as such. Consequently, the individual capital could be taken as a simple *microcosm of the totality of social capital*, its direct and immediate individual embodiment.[16]

Shortall also argues that the distinction between capital in general and particular capitals is derived from Hegel's moments of the concept of universality and particularity.

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13   Marx MECW v. 33, p. 299 [TSV, v. I, p. 416].

14   Marx 1978, p. 451.

15   Paul Burkett 1991 has also emphasised that individual capitals in Volume I are considered only as representatives of the total social capital.

16   Shortall 1994, p. 452. See also Rosdolsky 1977, p. 48; and Foley 1986, p. 6. Both present similar interpretations of the representative function of individual capitals in Volume I.

To be sure, Marx should have made this 'representative' nature of individual capitals and individual workers in Volume I clearer to readers. In a lecture to the International Workingmen's Association in 1865, Marx stated this point clearly. After again illustrating his theory of surplus-value in terms an individual worker, Marx stated:

> There will also be nothing changed if in the place of one working man you put the whole working population, twelve million working days, for example, instead of one.[17]

We turn now to our review of the four drafts of *Capital*, beginning with the *Grundrisse*.

1   *The Grundrisse*[18]

The *Grundrisse* is almost entirely at the level of abstraction of capital in general. After an initial 'Chapter on Money', the rest of the *Grundrisse* is the 'Chapter on Capital', which is divided into three sections: (1) 'The Production Process of Capital', (2) 'The Circulation Process of Capital', and (3) a brief section (30 pages, mainly about the falling rate of profit) entitled 'Capital as Fructiferous. Interest. Profit. (Production Costs, etc.)'.[19] These three sections of the 'Chapter on Capital' correspond closely to the three sublevels of capital in general in the outline of *Capital* at the beginning of this chapter.

Throughout the *Grundrisse*, Marx occasionally comments that his theory thus far is concerned with 'capital in general',[20] or 'the general concept of capital',[21] or 'capital as such'.[22] Capital in general is defined as:

> the incarnation of the qualities which distinguish value as capital from value as pure value or as money ... But we are still concerned neither with a *particular* form of capital, nor with an *individual* capital as distinct from

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17   Marx 1968b, p. 218.

18   See Moseley 2011a for a prior discussion of the early development of Marx's theory of the distribution of surplus-value in the *Grundrisse*.

19   The location of interest in Marx's theory changes over time, and these changes will be discussed below.

20   Marx 1973, pp. 310, 852.

21   Marx 1973, pp. 401, 649.

22   Marx 1973, pp. 346, 352, 684, 729, 767, 852.

other individual capitals, etc. We are present at the process of its becoming ... The later relations are to be regarded as ***developments coming out of this germ.***[23]

Capital in general, as distinct from particular capitals, is an abstraction which grasps the specific characteristics which distinguish capital from all other forms of wealth.[24]

The 'later relations' are particular forms of capital and surplus-value that develop out of the 'germ' of capital in general.

Capital in general is also defined as what all capitals have in common:

The introduction of *many* capitals must not interfere with the investigation here. The relation of the many will, rather, be explained after ***what they all have in common***, the quality of being capital, has been examined.[25]

The main characteristic that all capitals have in common is the production of surplus-value, so the main question addressed at the level of abstraction of capital in general is the production of surplus-value.

Since capital in general has to do with the common properties of all capitals together, it is also defined quantitatively as 'the capital of the whole society' and 'the total capital of e.g. a nation'.[26] The main quantitative question addressed at the level of abstraction of capital in general is the determination of the total surplus-value produced by the total capital of the economy as a whole. In this sense, Marx's theory of capital in general and the production of surplus-value is a *macroeconomic* theory.[27]

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23   Marx 1973, p. 310.
24   Marx 1973, p. 449.
25   Marx 1973, p. 517.
26   Marx 1973, pp. 346 and 852.
27   However, it should be emphasised that Marx's macroeconomic theory of the total surplus-value is entirely different from mainstream macroeconomics, in which profit is not even a variable.

1.1   *Section One: The Production Process of Capital and the Theory of*
            Surplus-Value

In Section One of the *Grundrisse*, Marx develops his theory of surplus-value
for the first time.[28] Marx had written a very brief and inadequate sketch of his
theory of surplus-value in *Wage Labour and Capital* (1847), but the *Grundrisse* is
the first time (in his published works) in which he works out the theory in some
detail. He develops for the first time the crucial division of the working day into
necessary labour time (labour time objectified in the wage) and *surplus labour
time* (the rest of the working day).[29] According to Marx's theory, surplus-value
is determined in the process of production by the amount of surplus labour
time in excess of necessary labour time.

   This theory is explained and illustrated in the *Grundrisse* in terms of the sur-
plus labour of an individual worker, but the determinants of surplus labour –
the length of the working day and necessary labour – are the same for all work-
ers. The individual worker represents the working class as a whole and what
all workers have in common – the production of value and surplus-value – and
thus the same theory applies to all workers and to the sum total of surplus-value
produced by all workers together. Therefore, the total surplus labour, which
determines the total surplus-value, can be conceived as equal to the surplus
labour of the average worker times the total number of 'simultaneous working
days':

> The identity of surplus gain with surplus labour time ... sets a qualitative
> limit on the accumulation of capital, namely the *working day* ... the degree
> to which the productive forces are developed, and the **population**, which
> expresses the number of **simultaneous working days**, etc.[30]

Surplus time is the excess of the working day over necessary labour; surplus
time also exists secondarily as the multiplication of *simultaneous working days*,
i.e., of the **labouring population** ... A labouring population of, say, 6 million can
be regarded as one working day of 6×12 [hours], i.e., 72 million hours; so that
the same laws are applicable here.[31]

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28   Dussel 2008 calls this section Marx's 'great discovery' of his theory of surplus-value in the
      Grundrisse.
29   See Chapter 4, Section 5.1, for further discussion of 'necessary labour time'.
30   Marx 1973, p. 375. This statement is repeated virtually word for word in Volume III of
      Capital (TSV, v. III, p. 523).
31   Marx 1973, pp. 398–9.

1.2   *Section Two: The Circulation Process of Capital*

In Section Two, Marx develops concepts that have to do specifically with the circulation process: the turnover time of capital, fixed capital, circulating capital, annual surplus-value, etc. Much attention is given to fixed capital, as a characteristic feature of capitalism. The annual surplus-value produced by a given capital is determined by the surplus-value produced by that capital in one turnover period *times* the number of turnover periods in a year (see especially pp. 652–67). This determination of the annual surplus-value applies to the surplus-value produced by each and every capital, and therefore applies to the total annual surplus-value produced by the total social capital. Marx continued to determine the total annual surplus-value in the same way in his final drafts of Volume II of *Capital*, written in the 1870s (see especially Chapter 16).

In addition, there are a number of passing comments and brief discussions in this section that have to do with the *distribution of surplus-value*, mainly about the equalisation of profit rates across industries, the most important aspect of the distribution of surplus-value. In these comments, Marx usually stated something like the following: this discussion of the equalisation of profit rates *does not belong here*, but belongs instead to the later analysis of *competition*.

The first such discussion is on pp. 432–6. Marx first notes that capitalists could sell their commodities below their value and still make a profit; the only difference is that a part of the surplus-value would be received by the buyers of the commodities, so there is a kind of *sharing of surplus-value*. Three pages later, Marx writes:

> A *general rate of profit* as such is possible only if ... a part of the surplus value – which corresponds to surplus labour – is transferred from one capitalist to another ... The **capitalist class thus to a certain extent distributes the total surplus value** so that, to a certain degree, it [shares in it] evenly in accordance with the *size* of its capital, instead of in accordance with the surplus values actually created by the capitals in the various branches of business. The larger profit – arising from the real surplus labour within a branch of production, the really created surplus value – is pushed down to the average by competition, and the deficit of surplus value in the other branch of business raised up to the average level by withdrawal of capitals from it ... **Competition cannot lower this level itself, but merely has the tendency to create such a level. Further developments belong in the section on competition.**[32]

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32   Marx 1973, pp. 435–6; brackets in the translation.

This is the first time in Marx's published writings that Marx mentions the general rate of profit, but it appears that Marx already had a clear idea how he would explain this important phenomenon of competition – by a redistribution of the predetermined total amount of surplus-value.

120 pages later, in a discussion of the relation between profit and wages, Marx interjects another comment about competition and the distribution of surplus-value:

> Competition among capitals can change only the relation in which they [capitalists] *share the total profit*, but cannot alter the relation between total profit and total wages.[33]

In other words, competition affects the distribution of surplus-value among capitalists, but it does not affect the production of surplus-value, or the total amount of surplus-value produced.

110 pages later, in a discussion of the effects of unequal turnover time on the production of surplus-value, Marx notes that this subject is related to the equalisation of profit rates; and in a footnote, Marx notes again that the equalisation of profit rates has to do with the distribution of surplus-value, not its production (or 'creation'):

> It is clear that other aspects [besides unequal turnover times] also enter in with the equalization of the rate of profit. Here, however, the issue is *not* the *distribution* of surplus value, but its *creation*.[34]

The last comment about the general rate of profit and the distribution of surplus-value in Section Two comes 15 pages later, and it is an important one. In a discussion of the confusion of classical economists (e.g., Malthus), who thought that fixed and circulating capital somehow produce profit independently of surplus labour, Marx comments:

> The greatest *confusion* and mystification has arisen because the doctrine of surplus profit has not been examined *in its pure form* by previous economists, but rather mixed in together with the doctrine of real profit, which leads up to *distribution*, where the various capitals participate in the *general rate of profit*. The *profit of the capitalists as a class, or the*

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33   Marx 1973, p. 557.
34   Marx 1973, p. 669.

> *profit of capital as such, has to exist before it can be distributed, and it is*
> *extremely absurd to try to explain its origin by its distribution.*[35]

Thus we can see that, according to Marx's theory: (1) the theory of surplus-value
'in its pure form' (i.e., the theory of the production of surplus-value, disregarding the distribution of surplus-value) should be carefully distinguished from
the theory of 'real profit' (i.e., the theory of the distribution of surplus-value, the
most important aspect of which is the general rate of profit); (2) previous economists have not made this distinction, which resulted in great confusion; (3)
surplus-value exists prior to its distribution (i.e., the total amount of surplus-value is determined prior to its distribution); and (4) one cannot explain the
origin of surplus-value (or the determination of the quantity of surplus-value)
by its distribution.

1.3   *Section Three: Capital and Profit*

The beginning of the short Section Three of the *Grundrisse* is a critical juncture
in Marx's theory. It is the first draft of the beginning of Volume III of *Capital*,
which is a key transition from the analysis of circulation in Section Two to
an analysis of production and circulation together, and to a consideration of
'profit' and the relation of profit to surplus-value. This section begins with the
following important methodological comment:

> Capital is now *posited* [*nun gesetzt*] as the unity of production and circulation; and the *surplus value it creates in a given period of time*, e.g. in one
> year [is also posited] ... In a definite period of time ... capital produces a
> *definite surplus value* ... A capital of a certain value produces in a certain
> period of time a *certain surplus value*. Surplus value thus measured by
> the value of the presupposed capital, capital thus *posited* as 'self-realizing
> value' – is *profit* ...[36]

Thus we can see that, at this stage of the theory (i.e., after an analysis of the
production process of capital and the *circulation* process of capital), a 'definite'
or 'certain' *quantity* of surplus-value produced in a year is now '*posited*' (i.e.,
has been determined or explained). The amount of surplus-value produced in
a given period is determined (by surplus labour) as a definite magnitude by
the analysis of production, and the analysis of circulation brings in the factor

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35   Marx 1973, p. 684.
36   Marx 1973, pp. 746–7.

of turnover time, which affects how much surplus-value is produced in a year by a given capital. This quantity has been determined by Marx's theory up to this point, in the first two sections of the *Grundrisse*, and this quantity is presupposed for the rest of the *Grundrisse*.

We can also see that *quantity of profit* is defined as identically equal to this *already posited quantity of surplus-value*. Profit is defined as this already posited quantity of surplus-value as it is *related to the total capital*, rather than just to the capital advanced to purchase labour power (which is its real source, according to Marx's theory). Thus profit is a 'mystifying' form of appearance of this already posited quantity of surplus-value. This definition of profit (equal in magnitude to surplus-value) makes sense only if the quantity of surplus-value itself has already been determined as a definite magnitude by the prior analysis of production and circulation (annual surplus-value = surplus-value produced in one turnover period *times* the number of turnover periods in a year), which indeed it has been.

The above statement of the prior determination of a definite quantity of surplus-value and the identity between the quantity of profit and this predetermined quantity of surplus-value is expressed by Marx in terms of 'a capital'. However, as discussed above, Marx's theory of surplus-value presented in Sections One and Two of the *Grundrisse* is not just about the surplus-value produced by a single individual capital, but is instead about the surplus-value produced by *each and every* capital ('capital as such' or 'what all capitals have in common'), and hence is also about the *total quantity of surplus-value* produced by the total social capital as a whole. Therefore, this statement of the prior determination of surplus-value and the identity between profit and the predetermined surplus-value also applies to the total surplus-value and the total profit produced by all capitals together. This previously determined total quantity of surplus-value is then a presupposition for Marx's subsequent theory of the distribution of surplus-value.

After this opening paragraph in Section Three, Marx next discusses the falling rate of profit (his theory and other theories) for about 10 pages,[37] and then comments that, *for an individual capital*, profit may differ (either larger or smaller) from the surplus-value produced by that capital (Marx would later call this profit differing from surplus-value for individual capitals 'average profit').

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[37] It is in this section that Marx made the famous statement about the falling rate of profit: 'This is in every respect the most important law of modern political economy, and the most essential for understanding the most difficult relations. It is the most important law from an historical standpoint. It is a law which, despite its simplicity, has never before been grasped and, even less, consciously articulated' (Marx 1973, p. 748).

However, this is possible, Marx states, only to the extent that these differences are offset by opposite differences between profit and surplus-value for other individual capitals. The total amount of surplus-value for all capitals together is *not affected* by this redistribution of surplus-value (not 'ever'). The total surplus-value (equal to total profit) can neither increase nor decrease by this redistribution. Finally, Marx notes again that this subject of the distribution of surplus-value belongs to the level of abstraction of *competition* (or 'many capitals'). This important passage is as follows:

> The **total surplus value**, as well as the *total profit*, which is only the *surplus value itself, computed differently*, can **neither grow nor decrease** through this operation [the equalisation of profit rates], *ever*; what is modified thereby is not it, but only its *distribution* among the different capitals. However, **this examination belongs only with that of the many capitals**, it does not yet belong here.[38]

Marx then returns to the subject of the falling rate of profit, and six pages later emphasises again that the total profit of the capitalist class as a whole is identically equal to the predetermined total surplus-value:

> Profit as we still regard it here, i.e. as the **profit of capital** *as such*, not of an individual capital at the expense of another, but rather as the *profit of the capitalist class*, concretely expressed, *can never be greater than the sum of the surplus value … In its immediate form, profit is nothing but the sum of the surplus value expressed as a proportion of the total value of the capital.*[39]

Twenty printed pages later, in a discussion of the expenditure of profit as revenue, there is another clear statement that all these individual parts of surplus-value that become different types of revenue belong to the distribution of surplus-value and do not affect the total amount of surplus-value to be distributed.

> This is of course important, since capital exchanges not only for capital, but also for revenue, and each capital can itself be eaten up as revenue. Still **this does not affect the determination of profit in general**. Under the various forms of **profit, interest, rent**, pensions, taxes, etc., it may

38   Marx 1973, p. 760.
39   Marx 1973, p. 767.

be distributed ... under different titles among different classes of the population. ***They can never divide up among themselves more than the total surplus value*** of the total surplus product. The ratio in which they distribute it is of course economically important; but does not affect the question before us.[40]

Thus we can see that, even though there are only these few brief comments and discussions about the general rate of profit and the distribution of surplus-value in the *Grundrisse*, Marx was already clear at this early stage of the development of his theory about the following key methodological points: (1) The theory of capital would be divided into two main parts: capital in general and competition. (2) The main question analysed at the level of abstraction of capital in general is the production of surplus-value (or the determination of the total amount of surplus-value), and the main question analysed at the level of abstraction of competition is the distribution of surplus-value (or the division of the total surplus-value into individual parts), especially the equalisation of the profit rate across industries. (3) It is essential that the production of surplus-value be theorised prior to the distribution of surplus-value, because the former theory determines total amount of surplus-value that is to be distributed or divided up. (4) The total amount of surplus-value is taken as given in the subsequent analysis of the distribution of surplus-value at the level of abstraction of competition, and the total amount is not affected by this distribution. We will see below that Marx consistently maintained and further developed this basic logical structure in his theory of the production and distribution of surplus-value in all the later drafts of *Capital*.

1.4   *1858 Letters*

This emerging clarity about his logical method resulted in two important letters written toward the end of Marx's work on the *Grundrisse*. In March 1858, he wrote a letter to LaSalle in which he referred to the 'first part' of his book on capital as 'capital in general', which would be divided into three sections: (1) the *production* process, (2) the *circulation* process, and (3) the unity of the two, or *capital and profit* and interest.[41]

We can see that these are the same three sections of the *Grundrisse*. However, these sections are now sections of 'capital in general', rather than sections of the 'Chapter on Capital'. Thus, Marx appears to have realised more clearly as

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40   Marx 1973, p. 788.

41   Marx and Engels 1983, p. 287.

a result of his work on the *Grundrisse* that his theory of capital should be
divided into capital in general and competition, etc., and that his theory in the
Grundrisse was only about capital in general; it was not a complete theory of
capital. The theory of competition would come later. Marx began to develop
his theory of competition in the *Manuscript of 1861–63*, and developed it much
more thoroughly in the *Manuscript of 1864–65*, and this theory includes the
general rate of profit and other particular forms of surplus-value that have to
do with the distribution of surplus-value.

Several weeks later (April 2), Marx wrote a letter to Engels in which he
outlined the overall logical structure of his book on capital:

> *I. Capital* contains four sections:
> a) *Capital in general* (this is the *subject-matter of the first part*).
> b) *Competition*, or the action of the many capitals upon one another.
> c) *Credit*, here capital as the general principle confronts the individual
>   capitals.
> d) *Share capital* as the most highly developed form (turning into
>   communism) together with all its contradictions.[42]

Evidently, Marx's work in the *Grundrisse* on his theory of the production of
surplus-value, at the level of abstraction of capital in general, and the brief dis-
cussions of the general rate of profit which he realised 'must be analysed later
in the section on competition', had given him sufficient clarity about the rela-
tion between capital in general and competition (essentially the production
and distribution of surplus-value, or the general form of surplus-value and its
particular forms), and about the overall logical structure of his theory, that he
was able to write down these very clear outlines.

The three volumes of *Capital* are almost entirely about sections (a) and
(b) in this outline. Marx never really got to sections (c) and (d) (although
there is some material in Part 5 of Volume III that belongs to section (c) on
credit capital). We will see below that Marx maintained this logical structure
of capital in general and competition in all the later drafts of *Capital*.

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42   Marx and Engels 1985, p. 298.

2 *Manuscript of 1861–63*[43]

The second draft of *Capital* was in the *Manuscript of 1861–63* (an enormous manuscript, 23 notebooks in all, published for the first time in German in 1976–82 in six volumes in the *Marx-Engels Gesamtausgabe* (MEGA), volumes II/3.1–3.6, and in 1988–94 in five volumes in English in the *Marx Engels Collected Works* (MECW), volumes 30–4).[44] The recent publication of this manuscript in its entirety sheds new light on Marx's development of his theory of the distribution of surplus-value, which was eventually published in Volume III of *Capital*. About two-thirds of this manuscript is the previously published *Theories of Surplus-Value*, much of which (as we shall see) is about the distribution of surplus-value. The other third of the manuscript was published for the first time in the new MEGA edition, and includes a second draft of Volume I of *Capital* (the beginning and the end of the manuscript) and, what is most relevant to our subject, about 250 pages (toward the end of the manuscript) about various components of the distribution of surplus-value, the subject of Volume III of *Capital*.

2.1 *Second Draft of Theory of Surplus-Value*[45]

To begin with the hitherto unpublished second draft of the theory of surplus-value, Marx wrote the following outline on the inside front cover of Notebook I of this manuscript:

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43 See Moseley 2009a for a prior discussion of the development of Marx's theory of the distribution of surplus-value in the *Manuscript of 1861–63*.

44 The publication of this entire manuscript is an important event in Marxian scholarship. This manuscript is an important link between the *Grundrisse* and *Capital* and provides many valuable insights into the logical structure and content of *Capital*, especially Marx's theory of the distribution of surplus-value in Volume III. It should be carefully studied by all those who wish to understand Marx's *Capital*. See Oakley 1983, Chapter 5, for a short introduction to the *Manuscript of 1861–63* and Dussel 2001b for a detailed textual study of this manuscript (and Moseley 2001c for an introduction to Dussel's book).

45 Marx MECW, v. 30, pp. 9–346.

August 1861. Third Chapter.[46] *Capital in General*

    I. *The Production Process of Capital*

        1) *Transformation of Money into Capital*

            a) ***The Most General Form of Capital***

            b) Difficulties

            c) Exchange of Capital with Labour Capacity

            d) Value of Labour Capacity

            e) Labour Process

            f) ***Valorisation Process***

            g) *Capitalist Production*[47]

We can see that this manuscript is at the level of abstraction of *capital in general*, and begins with what we know as Part 2 of Volume I of *Capital*. The first section of the manuscript ('The Most General Form of Capital') is a draft of what later became Chapter 4 of Volume I of *Capital*. The general form of capital is defined as M – C – M′, money advanced which becomes more money, as in *Capital*.

In the next section ('Difficulties …'), which is a draft of Chapter 5 of Volume I, Marx comments that the total surplus-value cannot be explained by capitalists cheating each other. Cheating may enrich individual capitalists, but it cannot enrich the capitalist class as a whole; i.e., it cannot increase the total surplus-value:

> The class of capitalists taken as a whole cannot enrich itself as a class, it cannot increase its total capital, or produce a surplus value, by one capitalist's gaining what another loses. The ***class as a whole cannot defraud itself***. The sum total of capital in circulation cannot be increased by changes in the distribution of its individual components between owners.[48]

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46   Chapters 1 and 2 were presumably the two chapters in the *Contribution to a Critique of Political Economy* ('The Commodity' and 'Money, or Simple Circulation') already published in 1859.

47   Marx MECW, v. 30, p. 6.

48   Marx MECW, v. 30, p. 25. Later in the *Manuscript of 1861–63*, Marx made a similar point in a critique of Malthus's theory that profit comes from selling commodities above their value: 'It is particularly difficult to understand how society as a whole can enrich itself in this way' (Marx MEGA, v. 32, p. 215 [TSV, v. III, p. 20]).

This argument is a clear indication that Marx's theory is intended to explain the total surplus-value of the capitalist class as a whole, which cannot be explained by cheating.

Four pages later, Marx discusses merchant capital and interest-bearing capital, which appear to be impossible on the basis of the assumption thus far of the exchange of equivalents. Marx comments that these are '*derived, secondary* forms of capital', that can be explained only after the *general* form of capital has been explained. These secondary forms of capital 'do not come into consideration here at all, for we are dealing with *capital as such*' (i.e., capital in general).[49]

> Interest-bearing money capital in this sense therefore already assumes the development of capital [i.e., capital as such]. The capital relation [i.e., capital as such] must already be complete before it can appear in this specific form. The *self-valorising nature of value is here presupposed as rooted in it* ...[50]

Interest and merchant profit can be explained only after surplus-value in general and the total amount of surplus-value has been explained ('the existence of surplus-value is presupposed'). Marx states:

> Similarly, interest appears then merely as a particular form and branch of surplus value, just as the latter divides altogether later on into different forms, which constitute different kinds of revenue, such as profit, rent, interest. All questions about the magnitude of the *interest*, etc., therefore appear as questions of the ***distribution of the available surplus value*** between different sorts of capitalists. ***The existence of surplus value is presupposed*** here.[51]

This is a very clear statement of Marx's logical method with respect to the total surplus-value and its individual parts – the total surplus-value is presupposed (as already determined) in the further determination of the magnitudes of the individual parts such as interest.

The manuscript then proceeds to present Marx's general theory of surplus-value, which is the main question at the level of abstraction of capital in gen-

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49   Marx MECW, v. 30, pp. 28–9.

50   Marx MECW, v. 30, p. 31.

51   Marx MECW, v. 30, pp. 31–2.

eral. This second draft of the theory of surplus-value is essentially the same as the theory presented in the *Grundrisse* and later in *Capital*, but it is much more clearly developed than the rough and exploratory first draft. This draft is also very interesting because it contains more methodological comments (we shall see some examples below) than the 'popularised' final versions of Volume I. By this time, Marx had a very clear idea of the overall logical structure of Volume I (ever since 1859 at least; see the outline in Marx 1987b, pp. 511–17), and he was able to write these chapters in close-to-final form.

As in the *Grundrisse*, the theory of surplus-value is explained and illustrated in terms of an individual worker, which represents the working class as a whole, whose total surplus labour determines the total surplus-value. Marx again stated this point in terms of 'workers employed simultaneously by capital':

> The *amount of surplus value* evidently depends not only on the surplus labour performed by an individual worker ... it depends just as much on the number of workers employed simultaneously by capital ...[52]

> The amount of surplus value – its total amount – will depend on the number of labour capacities available and present in the market, hence on the magnitude of the **working population** and the proportion in which this population grows.[53]

Further textual evidence that Marx's theory of surplus-value applies to the total surplus-value produced by the working class as a whole is provided by the theory of *relative surplus-value*. According to this theory, capitalism has an inherent tendency toward technological change, in order to reduce the necessary labour of workers and thereby increase their surplus labour. This reduction of necessary labour and increase of surplus labour as a result of technological change applies to all workers, and thus affects both the total surplus labour and the total surplus-value. Marx summarises this point as follows:

> If we take the *total capital of society*, hence the *whole capitalist class* vis-à-vis the *working class*, it is clear that the capitalist class can only increase surplus value without extending the overall working day and without lessening the normal wage in so far as a greater productivity of

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52   Marx MECW, v. 30, p. 185.
53   Marx MECW, v. 30, pp. 185–7.

> labour ... makes it possible to maintain the working class as a whole with less labour ...[54]

Later in this manuscript, after the very long digression on 'Theories of Surplus-Value' (to be discussed in the next subsection), Marx returned to the subject of relative surplus-value (see Table 1 at the end of this chapter), and he made the same point again that relative surplus-value applies to all workers, and that the total surplus labour is the surplus labour of the individual worker multiplied by the number of workers simultaneously employed:

> The 2 moments of surplus value are its rate, the surplus time the individual worker works, and the number of workers employed simultaneously, hence from the point of view of the total capital the *surplus labour of the individual worker multiplied by the number of simultaneous workers*, or by the *working population*.[55]

2.2   *Beginning of* Theories of Surplus Value[56]

While working on Part 4 of Volume I on relative surplus-value, Marx broke off and began to write in a new notebook (Notebook VI), which he entitled 'Theories of Surplus Value'. It appears that Marx's original intention was to follow his own theory of surplus-value, just presented, with a brief critical summary of previous theories of surplus-value of the classical economists, similar to what he had done earlier in the *Contribution to a Critique of Political Economy* for theories of value and theories of money. In any case, Marx's work on the 'Theories of Surplus Value' soon greatly expanded into many new topics that have to do with the distribution of surplus-value (not just the production of surplus-value) and thus belong to the level of abstraction of competition, not capital in general. Table 1 at the end of this chapter presents a chronological overview of how Marx's creative work on these manuscripts expanded in the following months, beyond the production of surplus-value and the level of abstraction of capital in general to the distribution of surplus-value and the level of abstraction of competition.

Marx began his critical survey of the classical economists' theories of surplus-value with the following epigraph, which is very important, but has not received the attention it deserves:

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54   Marx MECW, v. 30, p. 237.
55   Marx and Engels 1994, p. 16.
56   This is presented in MECW beginning with MECW, v. 30, p. 347 (Marx MECW, v. 30), and ending with MECW v. 32, p. 541 (Marx MEGA, v. 32).

> All economists share the error of examining ***surplus value not as such***, in its pure form, but in the ***particular forms of profit and rent.*** What theoretical errors must necessarily arise from this will be shown more fully in Chapter III, in the analysis of the greatly changed form which surplus value assumes as profit.[57]

Thus, as Marx began the *Theories of Surplus-Value*, he had clearly in mind this crucial distinction between the general form of surplus-value and its particular forms, which he first articulated in the *Grundrisse* (Marx 1973, p. 684). Marx avoided the theoretical error of previous economists by doing precisely what they had failed to do: Marx first examines *surplus-value as such* (the total surplus-value of capital as such), and then later examines the particular forms and individual parts of surplus-value.[58]

Marx then wrote what we know as Volume I of *Theories of Surplus-Value*, which is mainly about Smith's theory of value and surplus-value (profit) and the concepts of productive and unproductive labour.[59] In a digression in this part of the manuscript on J.S. Mill and the question of the effect of a change in the magnitude of constant capital on the magnitude of surplus-value, Marx clearly

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57   Marx MECW, v. 30, p. 348 [TSV, v. I, p. 40].

58   In the chapter on Smith, Marx makes a similar criticism, and this time of Smith in particular:

> As Adam Smith resolves surplus value not only into profit but also into rent of land – two ***particular kinds of surplus value***, whose movement is determined by quite different laws – he certainly should have seen from this that he ought not to treat the ***general abstract form*** as directly identical with any of its ***particular forms*** (Marx MECW, v. 30, p. 398 [TSV, v. I, p. 92]).

59   And in the chapter on Rodbertus (to be discussed in the next subsection), Marx comments again on this crucial distinction between the general form of surplus-value and its particular forms:

> Mr. Rodbertus surmises that there is a difference between surplus value and its special forms, in particular profit. But he misses the point because, right from the beginning, he is concerned with the explanation of a *particular* phenomenon (ground rent) and not [with] the establishment of a ***general*** law (Marx and Engels 1989a, p. 296 [TSV, v. II, p. 63]).

> A very important discovery in this section on Smith was the development for the first time of the 'schemes of reproduction' in order to criticise what Marx called 'Smith's dogma', according to which the total value of the total commodity product in the economy as a whole consists only of wages and profit (and rent for agricultural goods), without any component for constant capital (Marx MECW, v. 30, pp. 411–51 [TSV, v. I, Chapter 3, Section 10]). The use of the reproduction schemes to criticise 'Smith's dogma' later became Part 3 of Volume II of *Capital*. See Moseley 1998 for a further discussion of this main purpose of Marx's reproduction schemes.

stated again the determination of the total surplus-value prior to profit and the rate of profit (the total surplus-value is the 'presupposition' and 'supposed to be *given*'):

> When we speak about profit and the rate of profit, then *surplus value* is supposed to be *given*. The influences therefore which determine surplus value have all operated. This is the **presupposition**.[60]

2.3 *Digression on Rodbertus and Prices of Production*

After discussing Smith, Marx's work took a surprising turn. Instead of next considering Ricardo's theory of surplus-value and then the later Ricardian economists, as Marx originally planned,[61] Marx discussed a more recent work, published in 1851, by Karl Rodbertus, who had attempted to develop a new theory of *rent* along Ricardian lines, and with an attempted solution to Ricardo's problem of absolute rent (Ricardo's theory could not explain how the least fertile land could receive a rent). This subject is out of place in the manuscript both chronologically and logically, since it deals with rent, a particular form of the distribution of surplus-value, rather than the production of the total surplus-value, and thus belongs to the level of abstraction of competition, rather than capital in general. Marx labelled this section of the manuscript a 'Digression'.

It appears that the immediate reason for this digression was largely practical and fortuitous. Lasalle had loaned Marx a copy of Rodbertus's book the year before and had recently written to Marx that he wanted his book back.[62] Therefore, Marx studied Rodbertus's book while he still had the book. The book turned out to be more interesting than Marx expected and appears to have stimulated Marx's thinking about rent and the determination of prices of production. It started Marx on a very creative theoretical excursion that lasted for almost a year, during which he began to work out for the first time the details of his own theory of the distribution of surplus-value, which would later be presented in Volume III of *Capital*.

Early in the section on Rodbertus's theory of rent, Marx began to realise that in order to be able to explain rent, and in particular absolute rent, it is first necessary to explain '*average prices*' (which Marx later called 'cost prices' and still later called 'prices of production' in Volume III of *Capital*). Therefore, he

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60   Marx and Engels 1989a, p. 69 [TSV, v. III, p. 228].
61   Marx and Engels 1989a, pp. 583–4, note 2.
62   Marx and Engels 1989a. p. 593, note 99 [TSV, v. II, pp. 633–4, note 1].

on Rodbertus) he wrote to Engels that his 'brainpan keeps going better than it has for years'.[66] Two months later, Marx wrote a long and important letter to Engels, in which he explained in some detail his new discovery of the theory of the general rate of profit and average prices (which he now called 'cost prices').[67] Marx's method of determination of the general rate of profit and cost prices in this letter is the same as in the section on Rodbertus just discussed. The general rate of profit is determined by the ratio of the total surplus-value to the total capital, and is then used to determine the average profit and the cost price in each industry. The end result is that the total surplus-value (as already determined by the analysis of capital in general) is divided up among the individual industries in proportion to the relative proportions of the total capital in each industry.

> If the *total capital* (400) of the *class* is considered [and total profit = 55], the profit rate would = 13 ¾ p.c. And capitalists are brothers. As a result of competition, ... capitals of *equal* size in DIFFERENT TRADES, DESPITE THEIR DIFFERENT ORGANIC COMPOSITIONS, YIELD THE SAME AVERAGE RATE OF PROFIT. It is a SHARE the dividend on which will be paid in proportion to its size out of the **total amount** of the SURPLUS VALUE (or unpaid labour) produced by the total variable (laid out in wages) capital of the **class**.[68]

This basic theory of the general rate of profit and cost price (or prices of production) remained essentially the same in all the later drafts of *Capital*, as we shall see.

In the next section ('Ricardo's and Smith's Theory of Cost Price'),[69] Marx argued that Ricardo was not able to provide a satisfactory theory of cost prices (or prices of production) precisely because he failed to follow the correct logical method with respect to the production and distribution of surplus-value. Instead of first determining the total amount of surplus-value and the general rate of profit, and then determining cost prices on the basis of this pre-determined general rate of profit, Ricardo simply assumed a given rate of profit in the very first chapter (without explaining its determination), and examined the extent to which the assumption of equal profit rates was consistent with

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66   Marx and Engels 1985, p. 380.
67   Marx and Engels 1985, pp. 394–7.
68   Marx and Engels 1985, p. 396; capitalised emphasis in the original.
69   Marx and Engels 1989a, pp. 387–456 [TSV, v. II, Chapter 10].

the determination of prices by labour times. To quote this important method-
ological criticism at some length:

> Ricardo's **method** is as follows: He begins with the determination of the
> magnitude of the value of the commodity by labour-time and then exam-
> ines whether the other economic relations and categories contradict this
> determination of value or to what extent they modify it. The historical
> justification of this method of procedure, its scientific necessity in the
> history of economics, are evident at first sight, but so too is, at the same
> time, its scientific inadequacy. This inadequacy not only shows itself in
> the method of presentation (in a formal sense) but leads to erroneous
> results because it **omits some essential links** and directly seeks to prove
> the congruity of the economic categories with one another.[70]

> Instead of postulating this general rate of profit, Ricardo should have
> examined how far its existence is consistent with the determination of
> value by labour-time and he would have found that instead of being
> consistent with it, prima facie, it contradicts it, and that its existence
> would therefore **have to be explained through a number of intermediary
> stages**, a procedure very different from merely including it under the law
> of value. He would then have gained an altogether different insight into
> the nature of profit and would not have identified it directly with surplus
> value.[71]

The most important 'essential link' or 'intermediary stage' omitted by Ricardo
is the prior determination of the total amount of surplus-value and the general
rate of profit, which is then taken as given in the subsequent determination of
cost prices.

Marx summarised his discussion of Ricardo's faulty logical method in the
following important passage:

> The equalization of the surplus values IN DIFFERENT TRADES **does not
> affect the absolute size of this total surplus value**; but merely **alters its
> distribution** among the DIFFERENT TRADES. The *determination of this
> surplus value* itself, however, **only arises out of the determination of value
> by labour-time**. Without this, the average profit is the average *of nothing*,

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70   Marx and Engels 1989a, p. 390 [TSV, v. II, pp. 164–5].
71   Marx and Engels 1989a, p. 401 [TSV, v. II, p. 174].

> pure fancy. And it could then equally well be 1,000% or 10% ... One can see that though Ricardo is accused of being too abstract, one would be justified in accusing him of the opposite: lack of the power of abstraction, inability, when dealing with the values of commodities, to forget profits, a factor which confronts him as a result of competition.[72]

This is a clear statement of Marx's logical method of the determination of the total surplus-value by surplus labour, which is not affected by the distribution of this total.

Marx followed the chapter on Ricardo's and Smith's theories of cost price with three chapters on Ricardo's theory of rent. These chapters start out by addressing absolute rent, but move progressively into *differential rent*, another new subject for Marx. Differential rent is also explained as a part of the total surplus-value that landlords are able to appropriate for themselves because of their monopoly ownership of the land. Differential rent is due to differences in the fertility of the land that cannot be competed away. Lands with higher fertility receive more differential rent.

> The capitalist is the direct exploiter of the workers NOT ONLY the direct APPROPRIATOR, but the direct CREATOR OF *SURPLUS LABOUR* ... The LANDLORD, on the other hand, has a claim – through landed property (to absolute rent) and because of the physical differences of the various types of land (differential rent) – which enables him to pocket a part of this SURPLUS LABOUR or SURPLUS VALUE, to whose DIRECTION and CREATION he contributes nothing.[73]

Chapter 25 on 'Ricardo's Theory of Surplus Value' begins with another clear statement of Ricardo's failure to distinguish between surplus-value in *general* and the *particular* forms of surplus-value: 'Nowhere does Ricardo consider surplus value independently of its particular forms'.[74] Later in this chapter, Marx commented again on Ricardo's theory of profit, and emphasised again that a correct understanding of equal rates of profit requires the 'intermediary link' of the prior determination of the total amount of surplus-value. Equal rates of profit are bound to be misunderstood if they

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72   Marx and Engels 1989a, p. 416 [TSV, v. II, pp. 190–1].
73   Marx and Engels 1989a, p. 539 [TSV, v. II, p. 328].
74   Marx MEGA, v. 32, p. 9 [TSV, v. II, p. 373].

are not connected by a series of ***intermediary links*** with the general laws of value etc: in short, if profit and surplus value are treated as identical, which is only correct for the aggregate capital. Accordingly, Ricardo has ***no means for determining the general rate of profit.***[75]

And a few pages later, there is another clear statement of Marx's method of determining the general rate of profit (as the ratio of the total surplus-value to the total capital):

> The *general rate of profits* **is formed through the total surplus value produced being calculated on the total capital of society (the class of capitalists).** Each capital, therefore, in each particular TRADE, represents a *portion* of a total capital of the same *organic composition* … As such a portion, it draws its dividends from the SURPLUS VALUE created by the aggregate capital, in accordance with its size … The ***surplus value thus distributed*** … constitutes the AVERAGE PROFIT or the GENERAL RATE OF PROFIT, and as such it enters into the costs of production of EVERY TRADE.[76]

2.4   *Revenue and Interest*

After considering various aspects of Ricardo's theory in greater detail (surplus-value, profit, and accumulation), Marx then discussed a variety of post-Ricardian economists (Malthus, Torrens, Bailey, etc.) and several 'Ricardian socialists' (Ravenstone, Hodgskin, etc.). While writing about Hodgskin, Marx broke off again and began an entirely new section entitled '*Revenue* and its Sources', which is a first draft of what later became the concluding Part 7 of Volume III, with a similar title.[77] This section begins with a discussion of the 'Trinity Formula', which Marx called 'the most fetishistic expression of the relations of capitalist production.'

Marx continued in this section to discuss for the first time at length the subject of *interest*. Marx's treatment of interest is somewhat complicated and requires careful consideration. It is necessary first of all to distinguish between

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75   Marx MEGA, v. 32, p. 61 [TSV, v. II, p. 427].

76   Marx MEGA, v. 32, p. 68 [TSV, v. II, p. 433].

77   Marx MEGA, v. 32, pp. 449–541 [TSV, v. III, pp. 453–540]. This section on 'Revenue and its Sources' is misplaced in the TSV; it is placed at the end of Volume III, but it should be located in the middle of Volume III, in Section 3 of Chapter 21, starting on p. 315 (between sections f and g), before the chapters on Ramsay, Cherbuliez, and Jones. The order is correct in the MECW.

two main aspects of Marx's theory of interest: (1) interest as an '*illusionary form of appearance*' of surplus-value and (2) interest as a *magnitude* or a *quantity*, as one part of the total surplus-value.

In the first respect, interest is similar to profit, and could be considered at the level of abstraction of capital in general, as profit is. Profit is an 'illusionary form of appearance of surplus-value', in that the surplus-value that is actually produced by labour, and hence intrinsically related to variable capital only, is seen by capitalists and economists as the result of the total capital, both constant capital and variable capital equally. The concept of profit is prior to the equalisation of the profit rate or the determination of the average profit, and thus belongs to the level of abstraction of capital in general. Interest is even more illusionary than profit, because interest appears to come from money-capital itself, without any relation to production at all ('money begets money'). Marx called interest 'the perfect fetish'. However, in the second aspect, as a quantity, interest is a fractional part of the total surplus-value, and is an element of the distribution of surplus-value, which belongs to the level of abstraction of competition, along with equal rates of profit and prices of production, commercial profit, and rent.

In the *Grundrisse*, interest was included in the title of Section Three, along with profit ('Capital as Fructiferous. Interest. Profit'), thereby suggesting that interest belongs to the level of abstraction of capital in general, and comes before the equalisation of the profit rate and prices of production, at the level of abstraction of competition. I suggest that the reason why Marx included interest in the title of Section Three of the *Grundrisse* is that he was thinking at that time only about this first 'illusionary' aspect of interest and not yet about the second quantitative aspect (we don't know for sure because Marx did not actually discuss interest at all in Section Three, even though it is in the title).

In the *Manuscript of 1861–63*, most of Marx's discussion of interest is still concerned with the first aspect of interest – interest as 'the perfect fetish'. However, Marx also begins to discuss the division of surplus-value into industrial profit and interest, i.e., the quantitative aspect of interest, as a part of the total surplus-value, along with other parts of surplus-value:

> *Interest* is therefore nothing but a ***part of the profit*** (which, in its turn, is itself nothing but SURPLUS VALUE, unpaid labour), which the industrial capitalist pays to the owner of the borrowed capital with which he 'works', either exclusively or partially. ***Interest is a part of profit*** – of SURPLUS VALUE – which, established as a special category, is separated from the total profit under its own name, a separation which is by no means based on its origin, but only on the manner in which it is *paid out* or

appropriated. Instead of being appropriated by the industrial capitalist himself – although he is the person who first holds the whole surplus value in his hand no matter how it may be *distributed* between himself and other people under the names of *rent*, *industrial profit* and *interest* – this part of the profit is deducted by the industrial capitalist from his own revenue and paid to the owner of capital.[78]

Marx also mentions several times that the ratio of profit to interest (i.e., the quantitative aspect of interest) belongs to the level of abstraction of *competition*, not capital in general:

> This is not the place for a more detailed examination of interest and its relation to profit; nor is it the place for an examination of the ratio in which profit is divided into industrial profit and interest. It is clear that capital, as the mysterious and self-generating source of interest, that is, source of its own increase, finds its consummation in capital and interest.[79]

> It is not intended to investigate here how this ratio [the ratio of profit to interest] is determined. This belongs to the section dealing with the real movement of capital, i.e. of many capitals [i.e., competition], while we are concerned here with the general forms of capital.[80]

Therefore, it appears that Marx was still thinking at that time that interest would be included in capital in general, because he was mainly considering the first 'illusionary' aspect of interest, but he already realised that the quantitative aspect of interest belongs to the level of abstraction of competition, along with the other individual parts of surplus-value.

This consideration of interest also seems to have led Marx to a more general clarity about his work during the preceding months, concerning the particular forms of surplus-value at the level of abstraction of competition, and how these fit together with his theory of the production of surplus-value already presented in the first 'section' on capital in general. Twenty pages into the section on interest, Marx sketched out a remarkable summary of how interest is related

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78   Marx MEGA, v. 32, p. 469 [TSV, v. III, pp. 470–1]; see also Marx MEGA, v. 32, pp. 471–8 [TSV, v. III, pp. 473–80].

79   Marx MEGA, v. 32, p. 451 [TSV, v. III, p. 455].

80   Marx MEGA, v. 32, p. 469 [TSV, v. III, p. 471]; see also Marx MEGA, v. 32, pp. 458–60 [TSV, v. III, pp. 462–3].

to his theory of surplus-value that he had already presented ('**the road traveled by capital** before it appears in the form of interest-bearing capital'), which in retrospect we can recognise as an overview of Marx's theory of the production and distribution of surplus-value presented in the three volumes of *Capital* (the reader is urged to read this remarkable summary).[81]

The main theme of this summary is also one of the main themes of Volume III of *Capital* – that the particular forms of surplus-value (which are analysed at the level of abstraction of competition) *obscure the origin of surplus-value*, which is surplus labour (which is analysed at the level of abstraction of capital in general). Each of these forms of surplus-value appears to capitalists and to bourgeois economists to have its *own separate and independent source* (interest from capital, rent from land, etc.); but this appearance is just a fetishistic illusion.

> It is clear that, as soon as surplus value [is split up] into different, *separate* parts, related to various production elements – such as nature, products, labour – which only differ *physically*, that is, as soon as in general surplus value acquires *special* forms, separate from one another, independent of one another and regulated by different laws, the common unit – surplus value – and consequently the nature of this common unit, becomes more and more unrecognizable and does not manifest itself in the *appearance* but has to be **discovered as a hidden mystery**.[82]

A few pages later, Marx summarised this fetishistic illusion as follows:

> The **breakdown of surplus value**, that is, of part of the value of commodities, into these special headings or categories, is very understandable and does not conflict in the least with the law of value. But the whole matter is mystified because these **different parts of surplus value acquire an independent form**, because they accrue to different people, because the titles to them are based on different elements, and finally because of the autonomy with which certain parts [of surplus-value] confront the process as its conditions. **From parts into which value can be divided, they become independent elements which** *constitute* **value**, they become *constituent elements*.[83]

81   Marx MEGA, v. 32, pp. 482–7 [TSV, v. III, pp. 481–6].
82   Marx MEGA, v. 32, p. 486 [TSV, v. III, p. 485].
83   Marx MEGA, v. 32, p. 511 [TSV, v. III, p. 511].

2.5   *Recently Published First Draft of Parts 1 and 3 of Volume III of Capital*[84]

The section on 'Revenue and its sources' is the end of the published version of *Theories of Surplus-Value*, with which we are familiar. However, it is not the end of Marx's manuscript, which continues, and continues to pursue the same general subject of the different forms of appearance of surplus-value, i.e., the distribution of surplus-value. Fortunately, because of the recent publication of the entire manuscript, we can now study the very interesting and important remaining sections of this manuscript, the continuation of Marx's development of his theory of the distribution of surplus-value, inspired by his critical confrontation with Rodbertus and Ricardo and the rest.

The next particular form of surplus-value that Marx began to consider in greater depth (again for the first time) in the continuation of these manuscripts was '*mercantile profit*' (which he later called 'commercial profit').[85] The question of the origin of mercantile profit was probably raised for Marx by a brief digression in the previous section on 'Revenue …' on 'different forms of capital', which include mercantile capital.[86] Mercantile capital is capital that functions solely in the sphere of circulation, i.e., performs only the pure circulation functions of buying and selling, and activities related to buying and selling (accounting, advertising, credit, etc.). Since, according to Marx's theory, these functions by themselves are 'unproductive', i.e., produce no value or surplus-value, the existence of mercantile profit appears to contradict this assumption of unproductive labour.[87]

Marx's explanation of this apparent contradiction is that mercantile capital receives its profit as a deduction from the surplus-value produced by industrial (productive) capital, and the general mechanism through which this deduction of mercantile profit from the total surplus-value occurs is through the difference between mercantile capital's buying price and its selling price. Mercantile capital buys commodities at less than their price of production and then sells these commodities at their price of production. This difference enables mercantile capital to recover its cost and to collect the average rate of profit.

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84   Marx MECW, v. 33, pp. 9–371.

85   Marx MECW, v. 33, pp. 9–68.

86   Marx MEGA, v. 32, pp. 467–9. Unfortunately, this important digression on the 'different forms of capital' is not included in the 'Addenda' to Volume 3 of *Theories of Surplus-Value* on 'Revenue and Its Sources'. See TSV, v. III, p. 470, where the digression should be.

87   See Moseley 1992, Chapter 2, for a further discussion of Marx's concept of unproductive labour.

> The *profit* which *mercantile capital* brings in is therefore merely a **part of the surplus value**, which is created by the total productive capital, and of which an aliquot part is transferred to mercantile capital.[88]

In this first discussion of mercantile profit, Marx sketches out this general method, but does not explain the details. We will see below that more details of this explanation of mercantile profit are provided in the *Manuscript of 1864–65* (Part 4 of Volume III of *Capital*).

While working on mercantile profit, Marx broke off again to write a draft of what he called 'Chapter 3' on 'Capital and Profit' (Marx MECW v. 33, pp. 69–153).[89] As discussed above, 'capital and profit' is the third section of capital in general. Marx's original plan, which was apparently still his plan while writing this draft in November–December 1862, was that this 'Chapter 3' on 'Capital and Profit' should be concerned only with capital in general, and therefore should not include competition and the various forms of the distribution of surplus-value that Marx had been working on during the preceding months. Consistent with this plan, this draft of 'Chapter 3' is concerned mainly with what we know as Part 1 of Volume III (the transformation of surplus-value into profit) and Part 3 (the falling of the rate of profit).[90]

Marx began this chapter on 'Capital and Profit' with a methodological comment similar to the one at the beginning of Section Three of the *Grundrisse* (discussed above):

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88   Marx MECW, v. 33, p. 62.

89   Marx began a new notebook with the draft of this chapter and wrote 'Ultimum' on the front of this notebook, suggesting that this was more of a final draft than the exploratory work of the previous notebooks; see Marx MECW, v. 33, p. 506, note 4. Section 6 of this draft on 'costs of production' (Marx MECW, v. 33, pp. 78–103) is one of the most interesting sections in all of the *Manuscript of 1861–63* (especially pp. 94–103) and will be discussed in Chapter 4.

90   Perhaps Marx's intention was to finish capital in general before continuing his exploratory work on the particular forms of surplus-value. This motive is suggested by a letter Marx wrote to Kugelmann on 28 December 1862, just after finishing this 'Chapter 3', in which he stated:

> *The second part has now at last been finished* … It is a sequel to Part I [*A Contribution to the Critique of Political Economy*] … In fact, all it comprises is what was to make the third chapter of the first part, namely '**Capital in General**'. Hence it includes neither the competition between capitals nor the credit system (Marx and Engels 1985, p. 435).

> Considered in its totality ... the movement of capital is a **unity of the process of production and the process of circulation**.
>
> The *surplus value* produced within a given period of circulation (let us take e.g. a year as the measure; see above Chapter II [the circulation process]) when measured against the *total capital* which has been advanced is called – *profit* ...
>
> Considered with respect to its material, **profit** is absolutely **nothing but surplus value itself**. Considered with respect to its absolute magnitude, it therefore does not differ from the surplus value produced by capital over a particular turnover time. **It is surplus value itself**, but **calculated** differently.[91]

Thus we can see that Marx defines profit in the same way as in the *Grundrisse* – as the *same quantity* as surplus-value. Marx's logic with respect to the determination of the magnitudes of surplus-value and profit is the same in this manuscript as in the *Grundrisse* – i.e., the *magnitude of surplus-value has already been determined* (by surplus labour) in the prior analysis of production and circulation, and the quantity of profit is defined as being identically equal to this already determined quantity of surplus-value.

Thirty pages later in this manuscript, Marx states explicitly that the identity between profit and the already determined surplus-value also applies to the *total surplus-value* of the total social capital and the capitalist class as a whole:

> Just as the surplus value of the individual capital in each sphere of production is the measure of the absolute magnitude of the profit – merely a converted form of surplus value – so is the *total surplus value* produced by the **total capital** the absolute *measure of the total profit of the total capital*, whereby profit should be understood to include all forms of surplus value, such as rent, interest, etc ... It is therefore the **absolute magnitude of value ...** which the *capitalist class* **can divide among its members under various headings**.[92]

In addition to the transformation of surplus-value into profit, Marx also discusses briefly in this section a 'second transformation' – the transformation of

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91   Marx MECW, v. 33, p. 69.
92   Marx MECW, v. 33, pp. 98–9.

profit into *average profit* and the determination of the general or average rate of profit. Marx argues that the second transformation is a necessary consequence of the first transformation – because capitalists measure their profit in relation to the total capital invested, competition will equalise profit in relation to the total capital, i.e., will equalise the rate of profit.[93] Marx also made it clear in these discussions that this second transformation 'belongs to the later investigation of *competition*.'[94]

Marx also clearly states several times in this section that the general or average rate of profit is determined by the ratio of the total surplus-value to the total capital advanced, and that the total surplus-value is determined prior to its division into individual parts:

> The empirical, or average, profit can therefore be nothing other than the **distribution of that total profit** (and the total surplus value represented by it or the representation of the total surplus labour) among the individual capitals in each particular sphere of production, in equal proportions ... It therefore only represents the result of the particular mode of calculation in which the different capitals divide among themselves aliquot parts of the total profit. **What is available for them to divide among themselves is only determined by the absolute quantity of the total profit or the total surplus value**.[95]

> Empirical or average profit ... relates the **total amount of surplus value**, hence the surplus-value realised by the whole capitalist class, to the **total capital**, or the capital employed by the whole capitalist class ...[96]

> ... the average rate of profit is nothing other than the **total surplus value** related to and calculated on this **total capital**.[97]

Marx also comments again that the equalisation of the rate of profit does not affect the magnitude of the total surplus-value:

> It needs no discussion here that if a commodity is sold above or below its value, there takes place **merely a change in the distribution of surplus**

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93   Marx MECW, v. 33, pp. 94–103.
94   Marx MECW, v. 33, pp. 83, 94, and 101.
95   Marx MECW, v. 33, p. 99.
96   Marx MECW, v. 33, p. 100.
97   Marx MECW, v. 33, p. 104.

value between different capitals, between the buyer and the seller. This difference in distribution, or alteration in the proportions in which different people share in the surplus value, ***does not change anything, either in the magnitude or in its nature***.[98]

In this draft of 'Chapter 3', interest does not appear in the title (as it did in the *Grundrisse*), nor is it discussed at all. Perhaps Marx was already thinking that he would relocate his theory of interest from the level of abstraction of capital in general to the level of abstraction of competition, in order to include the quantitative aspect of interest, along with the other individual parts of surplus-value.

2.6   *Decision to Expand Volume III to Include the Distribution of Surplus-Value*

After finishing this draft of 'Chapter 3', Marx returned to 'mercantile capital', and then returned to the discussion of Hodgskin (from which he had broken off three months earlier, as we saw above, in order to write the section on 'Revenue and Its Sources'). Then Marx continued with discussions of Ramsay, Cherbuliez, and Jones (mainly about issues related to the falling rate of profit). While working on a section on Cherbuliez in December 1862, Marx inserted into the manuscript a clear, detailed outline of what later became Part 2 of Volume III (which is of course the key part for the 'transformation problem'), and what Marx then called 'the second chapter of Part III on "Capital and Profit", where the *formation of the general rate of profit is dealt with'*. We can see from this outline that 'Chapter 3' on 'Capital and Profit' has become 'Part III' and that it now includes a 'second chapter' on the general rate of profit and prices of production. This outline consists of the following six points:

1.   Different organic composition of capitals ...
2.   Differences in the relative value of the parts of different capitals which do not arise from their organic composition ...
3.   The result of those differences is diversity of the rates of profit in different spheres of capitalist production.
4.   For the *total capital*, however, ***what has been explained in Chapter 1*** [i.e., Volume I] ***holds good. In capitalist production, each capital is assumed to be a unit, an aliquot part of the total capital.*** *Formation of the general rate of profit.* **(Competition).**

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98   Marx MECW, v. 33, p. 75.

5. *Transformation of values into prices of production ...*
6. To take up the Ricardian point: the influence of general variations in wages on the general rate of profit and hence on prices of production.[99]

This outline clearly indicates an expansion of the contents of 'Part III' from just a few weeks before, when Marx stated that the subject of the general rate of profit and prices of production would not be included (as discussed in the previous subsection). We can see that this outline is very close to the final outline of Part 2 of Volume III, with (1)–(3) the subjects of Chapter 8, (4)–(5) the subjects of Chapter 9, and (6) the subject of Chapter 11. (Chapters 10 and 12 are not included in this outline).

We can also see that Marx is utilising in this outline the logical structure of capital in general and competition. Volume I is about the total capital, i.e., about capital in general. Individual capitals in Volume I are assumed to be 'aliquot parts' of the total capital. The determination of the general rate of profit and prices of production belong to the level of abstraction of competition. The main conclusions of Volume I 'hold good' in the subsequent theory of the rate of profit and prices of production. The main quantitative conclusions of Volume I are that the value of commodities is proportional to the labour time required to produce them and that surplus-value is proportional to surplus labour. These conclusions 'hold good' for the total value and total surplus-value, even though individual prices of production and profit diverge from their values and surplus-value.

About fifty printed pages later, we get a more complete picture of the extent of Marx's expansion of the contents of 'Part III' (i.e., Volume III of *Capital*). While working on a section on Jones in December 1862,[100] Marx inserted a completely new outline of 'Part III', which he now called 'Section III', and which he probably had in mind when he wrote the earlier outline of 'Chapter 2' just a short time before. What is most remarkable about this outline is that the contents of 'Section III' have *expanded greatly* from the draft just a few weeks before:

1. Conversion of surplus value into **profit**. Rate of profit as distinguished from the rate of surplus value.
2. Conversion of profit into **average profit**. Formation of the **general rate of profit**. Transformation of values into **prices of production**.

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99   Marx MECW, v. 33, p. 299 [TSV, v. I, pp. 415–16]; brackets added.
100   Müller et al. 2002, p. 24.

3. Adam Smith's and Ricardo's theories of profit and prices of production.
4. **Rent**. (Illustration of the difference between value and price of production.)
5. History of the so-called Ricardian theory of rent.
6. Law of the fall of the rate of profit. Adam Smith, Ricardo, Carey.
7. Theories of profit …
8. **Division of profit** into **industrial profit** and **interest. Mercantile capital**. Money capital.
9. **Revenue** and its sources. The questions of the relation between production and distribution also to be included here.
10. Reflux movements of money in the process of capitalist production as a whole.
11. **Vulgar economy**.
12. *Conclusion. 'Capital and wage labour'*.[101]

We can see from this outline that 'Section III' now includes not only the aspects of capital in general included in the draft of a few weeks before (numbers 1 and 6), but now also all the particular forms of surplus-value that Marx had been working on in this manuscript over the past year, ever since his encounter with Rodbertus (general rate of profit, rent, interest, and mercantile profit), and also includes his critique of vulgar political economy written a month or two earlier. As Marx had made clear many times, these latter subjects belong to the level of abstraction of competition, beyond capital in general. Marx had made considerable progress on his theory of the distribution of surplus-value over the previous year, and this progress must have convinced him to include his theory of distribution in 'Section III', rather than waiting for a later separate volume on competition (with less chance of publication in his lifetime).

In addition, I think that another reason why Marx decided to expand 'Section III' in this way was that he wanted to include the critique of vulgar political economy that he had developed in the preceding months. It should be remembered that the subtitle of *Capital* is 'Critique of Political Economy'. Thus, a very important objective of *Capital* was not only to present Marx's theory of surplus-value and the individual parts of surplus-value, but also offer a critique of the explanation of these phenomena presented by all versions of political economy. In order to achieve this objective in an earlier volume, Marx expan-

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101   Marx MECW, v. 33, pp. 346–7 [TSV, v. I, pp. 414–15]. A page later, Marx also inserted an outline of 'Section I' on the 'production process of capital', which is very close to the final outline of Volume I of *Capital* (Marx MECW, v. 33, p. 347 [TSV, v. I, p. 414]).

ded 'Section III' beyond capital in general to include these important phenomena of competition and his critique of vulgar political economy's theories of these phenomena.

We can also see that in this outline *interest* is no longer located right after profit (#1), but is instead located in #8, along with mercantile profit, and after average profit and prices of production (#2) and rent (#4). Since all these particular forms of surplus-value have to do with the distribution of surplus-value, and thus belong to the level of abstraction of competition, this change of location of the chapter on interest suggests that Marx had decided to emphasise the quantitative aspect of interest, and to move the expanded chapter on interest to the level of abstraction of competition, where the quantitative aspect belongs.

This expanded outline of 'Section III' is the *main result* of Marx's very creative exploratory work on his theories of the distribution of surplus-value during the previous year. This outline is very close to the final version of Volume III, which Marx wrote in the next two years in the *Manuscript of 1864–65*.[102]

Unfortunately, this very important expanded outline of 'Section III' is misplaced in *Theories of Surplus Value*, and this misplacement obscures its significance. The outline is placed as an 'addendum' at the end of Volume One of TSV (pp. 414–16), right after the discussion of Smith, to which it is not related, and before the encounter with Rodbertus and the year-long development of Marx's theory of the distribution of surplus-value that led to this outline. Therefore, the reader does not realise that this outline is actually located at the *end* of the *Manuscript of 1861–63*, not at the beginning, and that it is the main result of all the work on this manuscript.

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102   One difference between this outline and the final outline of Volume III is that in this outline rent follows the general rate of profit and prices of production, presumably because of the logical connection between prices of production and rent that Marx had discovered while working on Rodbertus, and the falling rate of profit comes after rent.

        The falling rate of profit is a different type of analysis from the rest of the topics in this outline. The falling rate of profit is a *dynamic* theory of the trend over time in the rate of profit due to technological change. The rest of the topics in this outline are part of a *static* theory of how surplus-value is distributed in a given period of time. From this perspective, the falling rate of profit should perhaps be at the end of the book. However, from the perspective of capital in general and competition, the falling rate of profit should come after the first point (conversion of surplus-value into profit) because it is about the rate of profit for the economy as a whole, and thus belongs to the level of abstraction of capital in general. There is no logical necessity for the theory of prices of production to come before the theory of the falling rate of profit; the theory of the falling rate of profit does not depend in any way on the theory of prices of production.

Seeing the entire *Manuscript of 1861–63* together puts the *Theories of Surplus-Value* in a new perspective. We can see much more clearly from the manuscript as a whole that Chapter 8 of the *Theories of Surplus Value* (on Rodbertus's theory of rent) is an important turning point in Marx's work and the beginning of a long and creative exploration of the particular forms of surplus-value, at the level of abstraction of competition, beyond capital in general.

We have also seen that Marx repeatedly stated throughout this manuscript the *key quantitative premise* of his theory of the distribution of surplus-value – that the total surplus-value is determined prior to its distribution, i.e., prior to its division into individual parts. We have seen that one of the main themes of Marx's theory of the distribution of surplus-value is that the particular forms of appearance of surplus-value *obscure the real origin of surplus-value* (surplus labour), because each of the particular forms of surplus-value appears to have its own separate and independent source. Marx's theory is necessary in order to uncover the hidden real source of these particular forms of surplus-value – surplus labour ('has to be discovered as a hidden mystery').

Evidently, Marx's work on the *Manuscript of 1861–63* clarified his thinking on these issues to such an extent that he was now ready to write a full draft of this expanded 'Section III'. The fact that the draft of Volume III in the *Manuscript of 1864–65*, although certainly not polished for publication, is as clear and complete as it is (except for Part 5 on interest), is further evidence of the clarity Marx had achieved while working on the *Manuscript of 1861–63*.

2.7   *Other Interpretations – And Their Common Failing*

Roman Rosdolsky argued that the expanded outline of 'Section III' discussed in the previous subsection (and the later similar content of Volume III of *Capital*) is evidence that Marx *expanded his definition of capital in general* to include these many new topics, and reduced his definition of competition correspondingly.[103] Rosdolsky does not explain *why* Marx changed the definitions of capital in general and competition in this very significant way; he just states that the main purpose of the original distinction was 'self-clarification' and a 'blueprint', and that once it had served this purpose, it could be discarded.

I argue, to the contrary, that the main purpose of Marx's distinction between capital in general and competition was not self-clarification, but was instead to provide a logical framework for his theory of the production and distribution of

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103   Rosdolsky 1977, Chapter 2. Several MEGA editors (Müller et al. 2002) also present a similar argument that this expanded outline is evidence that Marx abandoned the logical method of capital in general and competition.

surplus-value. Therefore, capital in general *cannot* be expanded to include the distribution of surplus-value, because the production of surplus-value must be explained prior to the distribution of surplus-value, i.e., the total amount of surplus-value must be explained prior to its division into individual parts, and that is the main task at the level of abstraction of capital in general. The distinction between capital in general and competition cannot be discarded, because Marx would be left with no logical method for his theory of the production and distribution of surplus-value. Just because Marx pragmatically expanded the contents of 'Section III' to include both capital in general and competition does not mean that Marx changed the fundamental logical structure of his theory.

As discussed above, this expanded outline of 'Section III' was preceded by several weeks by a detailed outline of 'Part 2 of Section III' on the general rate of profit and prices of production, which clearly utilised the logical structure of capital in general and competition. The juxtaposition of these two outlines provides strong evidence that the expanded outline of Book III does *not* indicate the abandonment of the logical structure of capital in general and competition, but rather a further development and articulation of that logical structure and a practical decision to include the particular forms of surplus-value in the next volume.

On the positive side, Rosdolsky is to be applauded for calling attention to the importance of the *Grundrisse*, and to the importance of the logical structure of capital in general and competition in the *Grundrisse*. Rosdolsky recognised that, in the *Grundrisse*, the subject of equal rates of profit and prices of production are clearly assigned to the level of abstraction of competition, after the theory of capital in general, and that the total surplus-value is determined at the level of abstraction of capital in general, prior to the equalisation of the rate of profit, and is not affected by this equalisation.[104] Unfortunately, Rosdolsky did not discuss whether or not his interpretation of the expansion of the definition of capital in general affects this key quantitative premise of the prior determination of the total surplus-value. Perhaps Rosdolsky would say that this quantitative premise is not affected by this change in the definition of capital in general. In that case, our disagreement would have to do solely with the definitions of capital in general and competition, and not with the logical structure of Marx's theory of the production and distribution of surplus-value, and the prior determination of the total surplus-value.

Roberto Fineschi has presented a similar argument – that all the topics in the expanded outline of 'Book III' belong to the level of abstraction of capital in gen-

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104   Rosdolsky 1977, pp. 371–2.

eral, and that these new topics are to be included only as 'illustrations', and not as a part of the theoretical development.[105] However, like Rosdolsky, Fineschi's interpretation does not seem to recognise that Marx's levels of abstraction of capital in general and competition provide the logical structure for Marx's theory of the production and distribution of surplus-value, and that all these new topics have to do with the distribution of surplus-value, i.e., are particular forms of surplus-value, which means that including these topics goes beyond capital in general to competition. Marx's work on the *Manuscript of 1861–63* had expanded beyond capital in general to the particular forms of surplus-value, and Marx evidently wanted to include these important new topics in 'Section III' (the publication of which was still a long way off), rather than wait even longer for a later, separate book.

The main evidence that Fineschi presents to support his interpretation (that all the new topics in this expanded outline belong to capital in general) is a letter that Marx wrote to Kugelmann at about this time, quoted above in footnote 89. Fineschi interprets this letter to mean that all the topics that Marx had been working on in the *Manuscript of 1861–63* belong to capital in general. But that is not what the letter says; rather the letter says that the part of his theory that belonged to capital in general was 'now at last finished'. The recent exploratory work on the particular forms of surplus-value was beyond capital in general and was far from finished. What was finished was the part on capital in general, including the 'Section III' on 'capital and profit' that he had just written (as discussed in Section 2.3 above), and that is why Marx could now say that the part on capital in general was 'at last finished'.

Michael Heinrich has also argued that, while working on the *Manuscript of 1861–63*, Marx 'encountered difficulties' with regard to the logical structure of capital in general and competition, and that these difficulties eventually led Marx to abandon this logical structure.[106] The main 'difficulty' discussed by Heinrich is that the average rate of profit should be considered a common feature of all capitals, and thus belongs to capital in general; however, the average rate of profit also presumes competition and *cannot be explained without competition*. Therefore, the distinction between capital in general and competition 'began to break down' and was eventually abandoned.

However, it is *not true* that the average rate of profit cannot be explained without competition. As discussed in Chapter 2, Marx's theory explains the

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105   Fineschi 2013.

106   Heinrich 1989. I very much appreciate Heinrich's papers in English on the MEGA publications of Marx's economic manuscripts. I first learned about the *Manuscript of 1861–63* from his 1989 paper.

average rate of profit without any appeal to competition – by the aggregate ratio of the total surplus-value produced in the economy as a whole to the total capital invested – while the total surplus-value is determined at the level of abstraction of capital in general by the total surplus labour in the economy as a whole. The determination of the average rate of profit by this aggregate ratio *does not depend in any way on competition*. What competition does is *enforce the equalisation* of the rates of profit in individual industries to the social average, but this social average is determined by surplus labour, not by competition.

We will see below that Marx continued to emphasise this point in the *Manuscript of 1864–65* (Volume III of *Capital*), i.e., *after* he allegedly abandoned this logical method in 1863. I will just quote here one especially clear passage from Part 4 of Volume III:

> If *the limits of value and surplus-value are given*, it is easy to perceive how the **competition** between capitals transforms values into prices of production and still further into commercial prices, transforming surplus-value into average profit. But without these *limits*, there is absolutely no way of seeing why competition should reduce the general rate of profit to one limit rather than to another, to 15 per cent instead of 1,500 percent.[107]

There is no 'difficulty' here, nor is there any hinted at. The rate of profit is determined without appeal to competition. Competition only equalises, it does not determine; i.e., it does not explain why the rate of profit is 15 percent instead of 1,500 percent.

Further evidence against Heinrich's argument is that Marx never once mentioned this alleged 'difficulty' in the *Manuscript of 1861–63*, nor anywhere else in his published manuscripts, and never once stated that he was dropping capital in general and competition and changing the fundamental logical structure of his theory. I do not find it plausible that an eminent scholar like Marx, who had a Ph.D. in Philosophy, with a specialty in logic, and who discussed his logical method quite a bit in his manuscripts, would change the fundamental logical structure of his theory without ever writing about this fundamental change in his notebooks, or about the problems that allegedly led to this fundamental change.

The main textual evidence that Heinrich presents to support his interpretation is that Marx no longer used the term 'capital in general' in his writings after 1863. But this is very weak and unconvincing textual evidence. The fact

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107   Marx 1981, p. 429.

that Marx stopped using the Hegelian term capital in general, in an effort to popularise *Capital*, does not mean that Marx abandoned the logical structure of capital in general and competition. Capital in general and competition were Hegelian terms for the two main levels of abstraction of the production and distribution of surplus-value. Marx *definitely* did not abandon the two levels of abstraction of the production and distribution of surplus-value, and thus he did not abandon the logical structure of capital in general and competition.

Furthermore, in the later drafts (as in the earlier drafts) Marx used several *synonyms* for capital in general: 'the general formula for capital', 'capital as such', 'the inner nature of capital', and most frequently simply 'capital'. In addition, Marx continued to use the term *competition* frequently in the later drafts, which suggests that the logical structure of his theory was still the two levels of abstraction of capital in general and competition, even though he didn't use the Hegelian term 'capital in general'.

Finally, we will see in the next section that Marx stated in the first paragraph of the draft of Volume III in the *Manuscript of 1864–65* that this volume is about '*competition*' and the 'concrete forms' that arise in competition (i.e., the particular forms of surplus-value).[108] In addition, in the second paragraph of Marx's original manuscript (not included in Engels's edited Volume III), Marx referred explicitly to his prior analysis of capital in general (specifically to the circulation process of capital in general):

> We may presuppose any period of time we like as the unit of measurement for the turnover of capital, but for the reasons discussed earlier when we looked at [the circulation process of] **capital in general**, the *year* would be appropriate as such a unit.[109]

This point is important because the total surplus-value produced by the total capital in a year is the basis for the determination of the annual rate of profit and prices of production in Volume III. Thus, contrary to Heinrich's argument, Marx started writing this later manuscript with the key logical structure of capital in general and competition clearly in mind.[110]

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108   Marx 1981, p. 117.

109   Marx 2016, p. 49; brackets added.

110   For further critique of Heinrich's interpretation, see Moseley 1995; see also Burkett 1991.

3   Volume III of *Capital* (*Manuscript of 1864–65*)[111]

We saw in the previous section that Marx decided toward the end of the *Manuscript of 1861–63* to expand the contents of 'Section III' on 'Capital and Profit' in order to include his theory of the distribution of surplus-value and the particular forms of surplus-value at the level of abstraction of competition. This expansion was accomplished in the *Manuscript of 1864–65*, the third draft of *Capital*.[112] The theory of the distribution of surplus-value presented in the *Manuscript of 1864–65* is very clear and is essentially the same theory as that presented in the *Grundrisse* and the *Manuscript of 1861–63*, although much more detailed and further developed. The main themes remained the same: (1) the total surplus-value is taken as given, as determined by the prior analysis at the level of abstraction of capital in general; (2) the distribution of surplus-value into individual particular forms is analysed at the level of abstraction of competition; (3) the distribution of surplus-value does not affect the total surplus-value; (4) in particular, the theory of prices of production is essentially the same as Marx's first sketch of this part of his theory in the chapter on Rodbertus in the *Manuscript of 1861–63*; and (5) the theories of commercial profit, interest, and rent are also essentially the same as in the earlier manuscript.

Marx's *Manuscript of 1864–65* was heavily edited by Engels for the first German edition of Volume III of *Capital* published in 1894. Marx's original manuscript was published for the first time in 1992 in the MEGA, volume II/4.2, and an English translation (by Ben Fowkes) has recently been published by Brill.[113] On the basis of the existing secondary literature in English on Marx's manuscript and my reading of this manuscript, I consider Engels's edited Volume III to be a reliable substitute for Marx's original manuscript with respect to the subject of this book – Marx's logical method and the 'transformation problem' – and in particular with respect to the subject of this chapter – the determination of the total surplus-value prior to its division into individual parts.[114] The main difference is that Engels's editing made Volume III look much more organised and complete than it actually was, especially Part 5, and also

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111   See Moseley 2002 for a prior discussion of Marx's theory of the distribution of surplus-value in Volume III of *Capital*.

112   According to the MEGA editors (Müller et al. 2002), the *Manuscript of 1864–65* was a complete draft of all three volumes of *Capital*. The draft of Volume II was published in 1988 in Marx MEGA II/4.2. The draft of Volume I has never been found.

113   Marx 2016.

114   Heinrich 1989, Schefold 1998, Müller et al. 2002, Vollgraf and Jungnickel 2002.

Part 1 (Engels did very little to Part 2, the key part for the 'transformation problem'). It is very unlikely that Engels's editing affected the many passages quoted in this chapter to support this interpretation. The publication of Marx's original manuscript will enable us to further evaluate this conclusion.

However, there are two exceptions to this conclusion (at least that I have discovered so far) and they are both right at the beginning of the manuscript. The first exception is the title of the manuscript.[115] The title previously used by Marx in his expanded outline of December 1862 – 'Capital and Profit' – was no longer appropriate because that was the title of the third section of capital in general, which does not include all the particular forms of surplus-value analysed at the level of abstraction of competition that were now included in the book. Marx's new title in the *Manuscript of 1864–65* was *Gestaltungen des Gesammtprozesses* (*The Forms of the Process as a Whole*). We know from the contents of the book that the 'forms' presented there are *particular forms of appearance of surplus-value* – profit, average profit, commercial profit, interest, and rent. A better title for Volume III would be: *The Particular Forms of Surplus-Value*. That is what Volume III is primarily about.

Unfortunately, Engels deleted *Gestaltungen* from the title, and changed the title to *Gesammtprozesses der kapitalistischen Produktion* (*The Process of Capitalist Production as a Whole*). This title misses the main point of Marx's expanded volume (which Engels probably did not fully understand; see Section 5 below). The book is not about the process of capitalist production as a whole; the analysis of the whole has already been accomplished by the prior analysis of capital in general (production and circulation). Rather, this book is about the *particular forms of capital and surplus-value* that *develop out of the process as a whole* already theorised, i.e., out of capital in general and the general form of surplus-value already theorised.

The rest of this section will briefly review each of the particular forms of appearance of surplus-value that are analysed in the successive parts of Volume III of *Capital* at the level of abstraction of competition.

3.1   *Profit and the Rate of Profit* (*Part 1 of Volume III of Capital*)
The expanded content of this volume is announced in the first paragraph of the manuscript:

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115   The second exception has to do with the opening paragraphs of Chapter 1 and will be discussed in the next subsection.

In Volume 1 we investigated the phenomena exhibited by the *process of capitalist production*, taken by itself, i.e. the immediate production process, in which connection all secondary influences external to this process were left out of account. But this immediate production process does not exhaust the life cycle of capital. In the world as it actually is, it is supplemented by the *process of circulation*, and this formed our object of investigation in the second volume. Here we showed, particularly in Part Three, where we considered the circulation process as it mediates the process of social reproduction, that the capitalist production process, taken as a whole, is a unity of the production and circulation process. It cannot be the purpose of the present, third volume simply to make general reflections on this unity. Our concern is rather to discover and present the *concrete forms* which grow out of the *process of capital's movement considered as a whole*. In their actual movement, capitals confront each other in certain *concrete forms*, and in relation to these, both the shape capital assumes in the direct production process and its shape in the process of circulation appear merely as particular moments. The *configurations of capital* [*Gestaltungen*], as developed in this volume, thus approach step by step the *form* in which they appear at the surface of society, in the action of different capitals on one another, i.e., in *competition*, and in the everyday consciousness of the agents of production themselves.[116]

Thus we can see that this book is about *competition* and the concrete forms of appearance that 'grow out of' the general form of capital and surplus-value theorised in previous books.[117] One is reminded of Marx's description in the *Grundrisse* of these particular forms of surplus-value as 'developments coming out of the germ' of the general form of surplus-value.[118]

After the opening paragraph of Marx's manuscript, there are three important paragraphs that are similar to the opening paragraphs of the section on 'Capital and Profit' in the *Grundrisse* and the *Manuscript of 1861–63* discussed above, but unfortunately these paragraphs are left out of Engels's edited Volume III (this is the second exception mentioned above to the general conclusion that Engels's

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116   Marx 1981, p. 117. Engels's first three sentences are an expansion of one sentence in Marx's manuscript, but the rest of this important paragraph is the same.

117   As I said in my comments on Heinrich above, this opening paragraph of the *Manuscript of 1864–65* clearly states that this book is about the level of abstraction of *competition*, and thus indicates that Marx continued to maintain the logical structure of capital in general and competition.

118   Marx 1973, p. 310.

editing did not make a difference with respect to the prior determination of the total surplus-value). The following are excerpts from these paragraphs:

> In one year a capital produces a certain quantity of surplus value ... If one now calculates the surplus value produced in a year (or in any other specific circulation period) in relation to the *total capital advanced*, which consists of the constant capital advanced plus the variable capital advanced, the surplus value is transformed into *profit*. The *rate of profit* is the ratio of the annual surplus value to the total capital, a ratio which is similarly usually expressed as a percentage ...

> From the point of view of its material, the *profit* (in the shape in which it directly confronts us here) is nothing other than the *surplus value* itself. Its absolute magnitude does not therefore differ from the absolute magnitude of the surplus value which capital produces during a given turnover time. It is surplus value itself, but calculated differently, or, as it initially appears, viewed subjectively in a different way ...

> *Profit*, in a material sense, and therefore as an absolute magnitude or quantity, is not at all different from *surplus value*.[119]

As discussed above, Marx's statement that profit is the *same quantity* as surplus-value presumes that the quantity of surplus-value produced in a year has already been determined by the prior theory of capital in general.

Marx emphasised that the forms of appearance of profit and the rate of profit *obscure the source of surplus-value*, which is not recognised by capitalists (and economists). Profit appears to arise equally from constant capital and variable capital. Marx argued that this illusion is not an accident; rather it necessarily appears to capitalists because capitalists make no distinction between constant capital and variable capital; to capitalists, both components of capital are equally 'costs' and therefore surplus-value appears to arise equally from both of these 'costs'.

> Profit, as we are originally faced with it, is thus **the same thing as surplus-value** save in a mystified form, though one that necessarily arises from the capitalist mode of production. Because no distinction between constant capital and variable capital can be recognised in the apparent formation

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119   Marx 2016, pp. 7–11; translated by Ben Fowkes.

of the cost price, the origin of the change in value that occurs in the course
of the production process is shifted from the variable capital to the capital
as a whole.[120]

Marx's analysis of profit and the rate of profit in Part 1 of Volume III is
presented in terms of an individual capital, as was his theory of surplus-value
in Volume I. However, Part 1 of Volume III remains at the level of abstraction
of capital in general and thus is about what all individual capitals have in
common. In this case, what they have in common is that surplus-value appears
to be the result of both constant capital and variable capital, rather than just
the variable capital alone. So the individual capital in Part 1 is analysed as a
representative of the total social capital, or as 'an aliquot part of the total social
capital', just as in Volume I. Therefore, when Marx assumes in Part 1 that the
surplus-value has been determined, he means not just that the surplus-value
produced by a single individual capital has been determined, but rather that
the quantities of surplus-value produced by *all* capitals have been determined,
and hence that the *total quantity* of surplus-value in the economy as a whole
has been determined. As discussed above, this point is stated explicitly in an
earlier draft of this chapter in the *Manuscript of 1861–63*,[121] and we will see
below that it is also stated explicitly in a summary of Part 1 in a letter to Engels
written in April 1868. This assumption of a given, predetermined total quantity
of surplus-value remains the basic premise of Marx's theory of the distribution
of surplus-value throughout the remainder of Volume III.

3.2 *The General Rate of Profit and Prices of Production* (*Part 2 of Volume III*)

Part 2 is the beginning of Marx's analysis of competition and the distribution
of surplus-value. The distribution of surplus-value is first considered across dif-
ferent industries. Marx assumed more or less as an empirical fact that the rates
of profit in different industries tend to be equalised as a result of competi-
tion among capitalists (although he certainly recognised the many obstacles
to this equalisation). The important point is that this empirical fact of equal
rates of profit (or at least a tendency toward equality) appears to contradict the
labour theory of value and surplus-value, because profit appears to arise from
the total capital, rather than from the variable capital alone. This apparent con-
tradiction between the labour theory of value and equal rates of profit across

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120   Marx 1981, p. 127.
121   Marx MECW, v. 33, pp. 98–9.

industries was of course the main 'stumbling block' of Ricardo's labour theory of value.

The equalisation of profit rates across industries is accomplished through the determination of the prices of production of individual commodities, which are different from the values of individual commodities. Therefore, Marx's explanation of the equalisation of profit rates across industries is necessarily concerned with the determination of these prices of production. This is of course the 'transformation problem'. The key point that I wish to emphasise is that Marx's theory of prices of production and the equalisation of profit rates is based on the premise that the *general rate of profit itself* (to which individual rates of profit are equalised) *is determined logically prior to the determination of prices of production*, and is *taken as given* in the theory of prices of production.

The general rate of profit (R) is determined by the ratio of the total amount of surplus-value (S) produced in a year to the total capital invested (M) in the capitalist economy as a whole:

(1) $R = S / M$

The total amount of surplus-value produced in a year is determined by the prior analysis of capital in general in Volumes I and II of *Capital*, and the total capital invested is taken as given in this prior analysis of capital in general, as the amount of money-capital (M) advanced in the first phase of the circuit of capital (M–C ... P ... C′–M′) in the capitalist economy as a whole (see the next chapter for an extensive discussion of the presupposed M).

Marx expressed the determination of the general rate of profit by the ratio of the total surplus-value to the total capital in the following passages:

> The ***total sum of capitals*** applied in the five spheres is 500; the ***total sum of surplus-value*** they produce 1100 the total value of commodities they produce 610. If we treat 500 as one single capital, with I–V simply forming portions of it ... then the average composition of the capital of 500 is 78c + 22c. Treating the capitals of 100 as each simply a fifth of the total capital, its composition would be this average one of 78C + 22v; in the same way the average surplus-value of 22 would accrue to each of these capitals of 100, the average rate of profit would thus be 22 per cent ...[122]

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122   Marx 1981, pp. 254–5.

... the average rate of profit depends on the level of *exploitation of labour as a whole by capital as a whole*.[123]

... the value level of the *total capital* advanced (both constant and variable) ... [together] with a *given size of surplus-value or profit for the entire capitalist class*, *determines the rate of profit* ... We thus have a mathematically exact demonstration of why the capitalists, no matter how little love is lost among them in their mutual competition, are nevertheless united by a real freemasonry vis-à-vis the working class as a whole.[124]

Let us assume that the *total industrial capital* advanced during the year is 720c + 180v = 900 (say in millions of pounds sterling), and that s′ = 100 per cent. The product is then 720c + 180v + 180s. If we call this product or the commodity capital produced C, then its value or price of production (since the two coincide when we take the totality of commodities) = 1,080 and the rate of profit on the total capital of 900 is 20 per cent. This 20 per cent, as explained already, is the average rate of profit, since here we are reckoning surplus-value not on this or that capital of particular composition, but rather on the total industrial capital with its average composition.[125]

The general rate of profit depends in part on the distribution of capital across industries. Some industries have a higher 'value' rate of profit (the rate of profit that would occur if individual prices were equal to their values) than other industries, because the former industries have a higher proportion of labour for a given amount of capital (i.e., a lower composition of capital). If a given amount of capital is redistributed from industries with relatively more labour to industries with relatively less labour, then, because there is now less labour in the aggregate, there would also be less surplus-value produced in the aggregate, and hence a lower general rate of profit.

In order to show this dependence of the general rate of profit on the distribution of capital, Marx also expressed the general rate of profit as a weighted average of the individual 'value' rates of profit in different industries (S_i / M_i), with the weights determined by the relative size of the capital in each industry as a share of the total social capital (M_i / M), as follows:

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123   Marx 1981, p. 299.
124   Marx 1981, pp. 299–300.
125   Marx 1981, p. 398.

(2) $R = \Sigma \, (S_i / M_i) \, (M_i / M)$

Marx called the rate of profit determined in this way the 'average rate of profit'.

This expression of the general rate of profit as the average rate of profit obviously does not change its magnitude or its ultimate determination by surplus labour. Since the sums of the individual amounts of surplus-value and capital are by definition equal to the social totals, the average rate of profit is identically equal to the general rate of profit as the ratio of the social totals, which can be easily shown:

(3) $\Sigma \, (S_i / M_i) \, (M_i / M) = \Sigma \, (S_i / M) = S / M$

That is why Marx used these two terms synonymously ('general or average rate of profit') in many passages throughout his manuscripts (including the title of Chapter 9 of Volume III). The average rate of profit is simply a way of showing the dependence of the general rate of profit on the distribution of capital across industries.[126] In this formulation of the average rate of profit, the surplus-value produced in each and every industry is taken as given, as already determined. Hence, in effect the total surplus-value produced in all industries together is taken as given, and thus so is the general rate of profit.

In Volume III, Marx emphasised this point about the general rate of profit as a weighted average, in order to highlight the dependence of the general rate of profit on the distribution of capital across industries:

> For the formation of the general rate of profit, therefore, it is not only a question of the difference in *rates* of profit between the various spheres of production, from which a simple average is taken, but also of the relative weight which these different rates of profit assume in the formation of the average. This depends however either on the relative size of the capital invested in each particular sphere or on which particular aliquot part of the total social capital is invested in each particular sphere of production ...
>
> The general rate of profit is determined therefore by two factors: (1) the organic composition of the capitals in the various spheres of production,

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126   Chris Arthur (2002) has argued that the average rate of profit is determined in a fundamentally different way from the general rate of profit, although he does not explain what this different way is and he acknowledges that the two rates are identically equal.

> i.e. the different rates of profit in the particular spheres; and (2) the distribution of the total social capital between these different spheres ...[127]

The general or average rate of profit thus determined, it then becomes a given, a 'prerequisite' for the determination of prices of production:

> The *prerequisite* [of prices of production] is the existence of a general rate of profit ...[128]

Prices of production are then determined according to the following equation:

(4) $PP_i = K_i + R \, M_i$

where R is taken as predetermined by the prior aggregate analysis of capital in general, K_i is the costs of production of the given commodity (the sum of constant capital (consumed) and variable capital) (a flow variable), and M_i is the total stock of capital invested in the given industry. The magnitudes of individual capitals consumed and invested in each industry (K_i and M_i) are taken as given, as are the actual sums of money capital in circulation in each industry (see Chapter 4). Therefore, prices of production are determined by adding the average profit to the given costs of production for each commodity, with the average profit determined as the product of the general rate of profit and the given capital invested in each industry, and the general rate of profit determined by the prior analysis of capital in general. In this way, the predetermined total amount of surplus-value is distributed such that all industries receive the same rate of profit.

Later in Volume III, Marx expressed this conclusion as follows:

> The prices of production arise from an adjustment of commodity values under which, after the reimbursement of the respective capital values consumed in the various spheres of production, *the total surplus-value is distributed*, not in the proportion in which it is produced in the individual spheres of production ... but rather in proportion to the size of the capitals advanced ... It is the constant tendency of capitals to bring about, by

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127   Marx 1981, pp. 262–3.
128   Marx 1981, p. 257; brackets added.

competition, this adjustment of the total surplus-value which the total capital produces ...[129]

The average profit included in the price of each commodity (= $R\,M_i$) will in general not be equal to the amount of surplus-value actually contained in that commodity, and hence the price of production of each commodity will in general not be equal to its value or proportional to the labour time required to produce it. However, the total amount of surplus-value is not altered by this redistribution of surplus-value among the individual industries according to the total amount of capital invested. Taken all together, the divergences of individual profits from individual surplus-values balance out so that the sum of individual profits is equal to the total amount of surplus-value (S), as determined in the Volume I analysis of capital in general. This aggregate equality can be easily shown:

(5) $\Sigma\,(R\,M_i) = R\,\Sigma\,M_i = R\,M = (S/M)\,M = S$

This result follows tautologically from the logical method employed by Marx in the determination of prices of production. Because the total amount of surplus-value (the 'limit') is taken as given in the determination of prices of production, the total amount of surplus-value cannot possibly change as a result of this determination (cannot 'abolish the limits').

> The transformation of values into prices of production ***does not abolish the limits*** on profit, but simply ***affects its distribution*** among the various particular capitals of which the social capital is composed ...[130]

The equalisation of profit rates across industries further obscures the origin of surplus-value. Because profit is in fact distributed across industries according to the total capital invested, and not according to the amount of variable capital, profit appears to come equally from both the constant capital and variable capital components of the total capital. Marx argued that this illusion is a 'necessary form of appearance' in capitalism because competition enforces the equalisation of profit rates across industries.

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129   Marx 1981, p. 895.
130   Marx 1981, p. 1000.

It is now purely accidental if the surplus-value actually produced in a particular sphere of production, and therefore the profit, coincides with the profit contained in the commodity's sale price … The actual difference in magnitude between profit and surplus-value in the various spheres of production … now completely conceals the true nature and origin of profit, not only for the capitalist, who has a particular interest in deceiving himself, but also for the worker.[131]

3.3   *Commercial Profit* (*Part 4 of Volume III*)

The next particular form of surplus-value explained in Volume III is commercial profit, or the profit collected by commercial capital. As discussed above in relation to the *Manuscript of 1861–63*, commercial capital is capital which performs the circulation functions of buying and selling, and related activities (accounting, advertising, credit, etc.). According to Marx's theory, these functions by themselves are 'unproductive' of value and surplus-value; therefore, the existence of commercial profit appears to contradict this assumption of unproductive labour.

As explained above, Marx's explanation of this apparent contradiction is that commercial capital receives its profit as a deduction from the surplus-value produced by industrial (productive) capital. The general mechanism through which this deduction of commercial profit from the total surplus-value occurs is through the difference between commercial capital's buying price and its selling price. Commercial capital buys commodities at less than their price of production and then sells these commodities at their price of production. This difference enables commercial capital to recover its cost and to collect the average rate of profit. In this method of determination of commercial profit, the *prior determination of the total amount of surplus-value* is very clear. Commercial profit is 'a portion of the surplus-value produced by productive capital as a whole'. The 'limits of surplus-value' (i.e., the total amount of surplus-value) is given, prior to the distribution of surplus-value through competition among individual capitalists.

Since commercial capital does not itself produce any surplus-value, it is clear that ***the surplus-value that accrues to it in the form of the average profit forms a portion of the surplus-value produced by the productive capital as a whole***. The question now is this: How does commercial capital

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131   Marx 1981, pp. 267–8.

attract the part of the surplus-value produced by productive capital that falls to its share? ...

It is clear that the merchant can obtain his profit only from the price of the commodities he sells, and also that this profit which he makes on the sale of his commodities must be equal to the difference between his purchase price and his sale price; it must be equal to the excess of the latter over the former.[132]

Commercial capital does not have a direct effect on the creation of profit or surplus-value and it enters as a determining element into the formation of the general rate of profit only in so far as it draws its dividends from the mass of profit that industrial capital produces, according to the proportion that it forms in the total capital.[133]

If *the limits of value and surplus-value are given*, it is easy to perceive how the competition between capitals transforms values into prices of production and still further into commercial prices, transforming surplus-value into average profit. But without these limits, there is absolutely no way of seeing why competition should reduce the general rate of profit to one limit rather than to another, to 15 per cent instead of 1,500 percent.[134]

How then are the purchase price and the selling price of commercial capital determined?[135] With the inclusion of commercial capital, the general rate of profit (R′) is now determined as the ratio of the predetermined total amount of surplus-value to the sum of industrial capital (M_p) and commercial capital (M_c), not just to the industrial capital as before:

(6) $R′ = S / (M_p + M_c) < R = S / M_p$

Therefore, the general rate of profit is less than what it was at the higher level of abstraction in the absence of commercial capital.

Commercial capital's buying price or 'wholesale' price (WP) (or industrial capital's selling price) is then determined as follows (considering both the

132   Marx 1981, pp. 395–6.
133   Marx 1981, p. 424.
134   Marx 1981, p. 429.
135   I will consider here only the simple case in which there are no additional costs of circulation beyond those necessary to purchase the commodities. For a consideration of the more complicated case with additional costs of circulation, see Moseley 1997.

total industrial capital and the total commercial capital, rather than individual capitals):

(7) $WP = K_p + R' (M_p)$

where K_p is the cost price (the sum of variable capital and constant capital consumed). Since $R' < R$, the average profit added to the costs of production by industrial capital is less than in the absence of commercial capital. In this way, industrial capital appropriates a smaller share of the total surplus-value.

The remainder of the total surplus-value is then received by commercial capital by adding the average profit to its buying price to determine its selling or 'retail' price, or price of production (PP):

(8) $PP = WP + R' (M_c)$

Prices of production are now different from those determined in Part 2, because the proportion of commercial capital will vary across industries and because the addition of commercial capital reduces the general rate of profit that is taken as given.

This then is Marx's explanation of how commercial capital receives a share of the total surplus-value even though it produces no surplus-value. It is trivial to show that the sum of industrial profit ($R' M_P$) and commercial profit ($R' M_C$) determined in this way is equal to the predetermined total amount of surplus-value:[136]

(9) $R' M_P + R' M_C = R' (M_P + M_C) = [S / (M_P + M_C)] (M_P + M_C) = S$

The only difference is that a part of this total amount of surplus-value is now collected by commercial capital, rather than by industrial capital, by means of the above relative price mechanism. (Marx presented a numerical example of this method of determination on p. 398 of Volume III, and gave a similar example in an 1868 letter to Engels, which will be discussed below).

The appropriation of profit by commercial capital further obscures the origin of surplus-value. Since commercial profit receives a profit proportional to its total amount, just like industrial capital, it looks like profit is produced by

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136   Similarly, the sum of the 'retail' prices of commercial capital is equal to the total price of commodities determined in Volume I and the sum of prices of production in the earlier case without commercial capital.

commercial capital as well as by industrial capital. This illusion is enhanced by the effect that the rate of turnover of commercial capital has on the rate of profit, e.g., a faster rate of turnover of commercial capital increases the rate of profit (see Chapter 18 of Volume III). Again, these illusions arising from circulation necessarily arise in capitalism because the products of capitalism are commodities which must pass through the phases of circulation and because capital must be invested to carry our these necessary functions of circulation, even though these functions do not themselves directly produce surplus-value.

> As the reader will have recognised in dismay, the analysis of the real, inner connections of the capitalist production process is a very intricate thing and a work of great detail; it is the task of science to reduce the visible and merely apparent movement to the actual inner movement. Accordingly, it will be self-evident that, in the heads of the agents of capitalist production and circulation, ideas must necessarily form about the laws of production that diverge completely from these laws and are merely the expression in consciousness of the apparent movement. The ideas of a merchant, a stock-jobber or a banker are necessarily quite upside-down.[137]

3.4   *Interest (Part 5 of Volume III)*

The next particular form of surplus-value explained in Volume III is interest. According to Marx's theory, as discussed earlier in the *Manuscript of 1861–63*, interest is simply a part of the total surplus-value which the 'functioning' capital (either industrial capital or commercial capital) has to pay to the lenders of capital for the use of the lenders' capital. Again, the total amount of surplus-value is predetermined and taken as given in the analysis of the division of this total surplus-value into 'profit of enterprise' and interest.

> ***Interest ... is ... nothing but a part of the profit, i.e. the surplus-value***, which the functioning capitalist, whether industrialist or merchant, must pay to the owner and lender of capital in so far as the capital he uses is not his own but borrowed.[138]

> ***Where a given whole such as profit is to be divided into two, the first thing that matters is of course the size of the whole to be divided*** ... And the circumstances that determine the magnitude of the profit to be divided,

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137   Marx 1981, p. 428.
138   Marx 1981, p. 493.

the value produce of unpaid labour, are very different from those that determine its distribution among these two types of capitalist ...[139]

The ratio in which profit is divided, and the different legal titles by which this division takes place, already assume that profit is ready-made and presuppose its existence ... [P]*rofit is produced before this division takes place* and before there can be any talk of it.[140]

With the division into interest and profit of enterprise, the average profit itself sets the limit for the two together. ***It supplies the given amount of value they have to share between them, and this is all they have to share*** (C.III: 1001).

Marx developed for the first time in this manuscript his theory of the *rate* of interest, and he argued that there are no general, systematic laws that determine the rate of interest, as there is with the rate of profit. Therefore, there are no general laws that determine the relative shares of 'profit of enterprise' and interest in the total surplus-value. The rate of interest is instead determined by the supply and demand for capital as loan capital, which in turn depend on many other factors. The most relevant point for our purposes is that the maximum rate of interest is the rate of profit. This maximum limit for the rate of interest follows from the prior determination of the rate of profit, before the division of the total surplus-value into 'profit of enterprise' and interest.[141]

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139   Marx 1981, p. 482.

140   Marx 1981, pp. 504–5.

141   David Harvey (Harvey 2012) has argued that Marx's logical method 'cracked' in Part 5 of Volume III because there are no general laws that determine the rate of interest, and Marx's method in *Capital* was to analyse only the 'general laws' of capitalist production. But I have argued in this book that the main aspect of Marx's logical method is the prior determination of the total surplus-value and the subsequent determination of the individual parts of surplus-value, one of which is interest. This method does not 'crack' with the consideration of interest; interest is analysed as one part of the total surplus-value (along with the other parts), with the total surplus-value that is divided into profit and interest taken as a predetermined given. The fact that there is no general law governing this division of the total surplus-value into profit and interest does not alter the fact that the total surplus-value is determined first and is taken as given and is not altered by this division.

Marx called interest the 'most fetishistic form of surplus-value,' because interest appears to arise solely for the nature of capital itself, with no necessary relation to labour or even production. Marx argued that this fetishism necessarily arises in capitalism because of the actual emergence of loan capital and the consequent actual division of the total surplus-value into interest and profit of enterprise. Even capitalists who do not operate with borrowed capital nonetheless often divide their 'gross profit' into interest and 'net profit.'

> It is in *interest-bearing capital* – in the division of profit into interest and profit – that capital finds its most objectified form, its pure fetish form, and the nature of surplus-value is presented as something which has altogether lost its identity. Capital – as an entity – appears here as an independent source of value ...[142]

> The division of profit into profit of enterprise and interest ... completes the autonomisation of the form of surplus-value, the ossification of its form as against its substance, its essence ... [I]nterest then seems independent both of the wage-labour of the worker and the capitalist's own labour; it seems to derive from capital as its own independent source.[143]

3.5   *Rent (Part 6 of Volume III)*

The final particular form of surplus-value explained in Volume III is land rent. Rent is explained as another part of the total surplus-value which landlords are able, by their monopoly of the land (and other natural resources), to appropriate for themselves, rather than this surplus-value being distributed among all capitalists. In this theory of rent, the total amount of surplus-value is again taken as a given magnitude, as determined by the prior analysis of capital in general. This total amount of surplus-value is 'split' into profit and rent, and rent does not enter into the equalisation of profit rates across industries.

> All ground-rent is surplus-value, the product of surplus labour.[144]

> The analysis of landed property in its various historical forms lies outside the scope of the present work. We are concerned with it ***only in so***

142   Marx MEGA, v. 32, p. 498 [TSV, v. III, pp. 498].
143   Marx 1981, p. 968.
144   Marx 1981, pp. 772–3.

> *far as a portion of the surplus-value that capital produces falls to the landowner*.[145]

> In our analysis of ground-rent, we intend to proceed first of all from the assumption that products that pay a rent of this kind – which means that a *part of surplus-value ... is reducible to rent* – are sold like all other commodities at their prices of production ...[146]

Marx's theory of rent assumed that agriculture is organised on a capitalist basis, and that capital invested in agriculture receives the same average rate of profit as all other industries. However, agriculture is unique in that productivity differentials of different lands are due in part to unequal natural fertilities, which cannot be eliminated by competition and the transfer of capital. As a result, the price of production of agricultural goods is determined by the labour-time requirements on the least fertile land, rather than the labour-time requirements on the land of average fertility. The greater quantity of goods produced by the same amount of labour on the more fertile lands will sell at the same price as goods produced on the least fertile land. Therefore, the goods produced on the more fertile land will contain a sustainable 'surplus profit', i.e., a profit over and above the average rate of profit. This surplus profit is transformed into (differential) rent that must be paid to landlords because of the landlords' private ownership of the land and thus their monopolisation of the benefits of the greater natural fertility.

> Capital-profit (profit of enterprise plus interest) and ground-rent are thus nothing but particular components of the surplus-value; categories in which this surplus-value is distinguished according to whether it accrues to capital or landed property; designations which in no way affect its essence. Added together, they form the total of surplus-value. Capital directly pumps from the workers the surplus labour that is expressed in surplus-value and surplus product.[147]

The collection of rent by landlords further obscures the origin of surplus-value because it makes it appear as if surplus-value arises from the natural

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145   Marx 1981, p. 751.
146   Marx 1981, p. 779.
147   Marx 1981, pp. 959–60.

fertility of the land. Indeed to some, like the Physiocrats, it even appears that all of surplus-value, not just rent, originates from the natural fertility of the land.

> Finally, besides capital as an independent source of surplus-value, there appears landed property, as a limit to the average profit which transfers a portion of the surplus-value to a class that neither works itself nor directly exploits workers, and cannot even, like interest-bearing capital, launch forth in edifying homilies about the risk and sacrifice in lending capital. Since in this case one part of the surplus-value seems directly bound up not with social relations but rather with a natural element, the earth, the form of mutual alienation and ossification of the various portions of surplus-value is complete, the inner connection definitively torn asunder and its source completely buried, precisely through the assertion of their autonomy vis-à-vis each other by the various relations of production which are bound up with the different material elements of production process.[148]

3.6   *Revenue and Its Sources* (*Part 7 of Volume III*)

We come finally to Part 7, entitled 'Revenue and its Sources,' which is seldom discussed in the literature, but which I think is very important. Part 7 provides the culmination of Marx's theory of the distribution of surplus-value in Volume III of *Capital*. It makes the main points of Volume III very clear: (1) the distribution of surplus-value into its individual parts, (2) the prior determination of the total amount of surplus-value, and (3) the necessary, but false, appearance of the individual parts of surplus-value as separate and independent 'sources' of value. The main chapter is Chapter 50, on 'The Illusion Created by Competition'; the illusion is that each of the particular forms of surplus-value appears to have its own separate and independent source.[149]

The quantitative premise of the prior determination of the total surplus-value is clearly expressed throughout Part 7. The predetermined total surplus-value is the 'limit' of the sum of the individual parts.

> Profit (profit of enterprise plus interest) and rent are nothing more than characteristic forms assumed by particular portions of the surplus-value

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148   Marx 1981, p. 968.

149   Marx stated that in this false conception, the mutual relations of the individual parts of surplus-value appear like 'lawyer's fees, beetroot, and music' (Marx 1981, p. 953).

in commodities. The size of the surplus-value sets a *quantitative limit* for the parts it can be broken down into.[150]

The sum of average profit plus ground-rent can never be greater than the quantity of which these are parts, and this is already given before the division.[151]

We have thus an *absolute limit* for the value component that forms surplus-value and can be broken down into profit and ground-rent; this is determined by the excess of the unpaid portion of the working day over its paid portion, i.e., by the value component of the total product in which this surplus labour is realised. If we call *this surplus-value whose limits are thus determined* **profit**, when it is calculated on the total capital advanced, as we have already done, then this profit, considered in its absolute amount, is equal to the surplus-value, i.e. it is just as regularly determined in its limits as this is. It is the *ratio between the total surplus-value and the total social capital advanced in production*. If this capital is 500 ... and the surplus-value is 100, the absolute limit to the rate of profit is 20 percent. The division of the social profit as measured by this rate among the capitals applied in the various different spheres of production produces prices of production which diverge from commodity values and which are the actual averages governing market prices. *But this divergence from values abolishes neither the determination of prices by values nor the limits imposed on profit by our laws ... This surcharge of 20 per cent ... is itself determined by the surplus-value created by the total social capital*, and its proportion to the value of this capital; and this is why it is 20 percent and not 10 per cent or 100 per cent. The *transformation of values into prices of production does not abolish the limits to profit, but simply affects its distribution among the various particular capitals of which the social capital is composed ...*[152]

This last passage is a concise summary of Marx's theory of prices of production, in which it is clearly stated that the general rate of profit (the 'surcharge') is determined prior to prices of production, and is determined by the aggregate ratio of the total surplus-value to the total capital.

150 Marx 1981, p. 971.
151 Marx 1981, p. 972.
152 Marx 1981, pp. 998–1000.

Marx's theory of the total amount of surplus-value, presented in Volume I, is of course based on the labour theory of value. The labour theory of value is itself based on essentially the same premise of the relation between the whole and the parts – that the total amount of value, or the total price, is determined prior to its division into individual parts, or individual forms of income. The total surplus-value 'sets the limit' of the sum of the individual components. Leaving aside the constant capital component of the total price, the total new value produced in a given period is divided into wages plus the various forms of surplus-value discussed in Volume III. Marx emphasised repeatedly in Part 7 (and especially Chapter 50) that the labour theory of value assumes that the total amount of new value is determined prior to its division into wages and profit and rent, etc.

> The distribution rather presupposes this substance as already present, i.e. the total value of the annual product, which is nothing more than objectified social labour.[153]

> It is forgotten that the **value of commodities is the basis** and that the breakdown of this commodity value into particular components, and the further development of these value components into forms of revenue, their transformation into relations that the various owners of the different agents of production have to these particular value components, their distribution among these owners according to particular categories and titles, in no way alter the value determination and its law. Just as little is the law of value affected by the fact that the equalization of profit, i.e. the distribution of the total surplus-value among the various capitals ... gives rise to governing average prices for commodities that diverge from their values. This again affects only the addition of surplus-value to the various commodity prices; it does not abolish surplus-value itself, nor the total value of commodities as the source of these various price components.[154]

> The commodity value of $250 thus produced, and determined by the amount of labour objectified in it, **sets the limit** to the dividends that worker, capitalist, and landlord can draw from this value in the form of revenue – wages, profit, and rent.[155]

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153   Marx 1981, p. 961.
154   Marx 1981, pp. 984–95.
155   Marx 1981, p. 994.

> The value freshly added each year by new labour ... can be separated out
> and resolved into the different revenue forms of wages, profit, and rent;
> this *in no way alters the limits* of the value itself, the sum of the value that
> is divided between these different categories. In the same way, a change
> in the ratio of these individual portions among themselves cannot affect
> their sum, this given sum of value ... What is given first, therefore, is the
> mass of commodity values to be divided into wages, profit, and rent ...[156]

Marx also contrasted his theory of value and surplus-value with essentially
the *opposite* view held by the 'vulgar economists' – that the forms of income are
first determined separately and independently and then the total amounts of
value and surplus-value are determined as the sum of these individual forms of
income. According to this view, the different forms of revenue – wages, profit,
and rent – are themselves independent 'sources' of value, rather than being
parts of a predetermined total value. Marx called this opposite view the 'Trinity
Formula' or the 'illusions created by competition'.

> [I]t is correct to say that the value of a commodity, in so far as it represents
> freshly added labour, is always reducible to three elements, wages, profit,
> and rent, which constitute the three forms of revenue, while the respect-
> ive value magnitudes, i.e. the aliquot parts that these form of the total
> value, are determined by different specific laws that have already been
> developed. It would be wrong however to say that the value of wages, the
> rate of profit and the rate of rent are independent constituent elements
> of value, with the value of the commodity ... arising from their combina-
> tion; in other words, it would be wrong to say that these form constituent
> components of commodity value or the price of production.[157]

> Thus if the portion of commodity value representing labour freshly added
> ... breaks down into different portions, which assume mutually independ-
> ent shapes in the form of revenues, this does not in any way mean that
> wages, profit, and ground-rent are now to be considered as the constituent
> elements, with the governing price of commodities ... itself arising from
> their combination or sum ... In actual fact *commodity value is the quant-
> itative premise*, the sum total value of wages, profit and rent, whatever
> their relative mutual magnitudes might be. In the false conception con-

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156   Marx 1981, p. 998.
157   Marx 1981, p. 993.

sidered here, however, wages, profit and rent are three independent value magnitudes, whose total produces, limits and determines the magnitude of commodity value.[158]

This new value of 100 is all that is available for division into the three forms of revenue. If we call wages x, profit y and ground-rent z, the sum of x+y+z, in our present case, is always = 100. In the minds of the industrialists, merchants and bankers, and the vulgar economists as well, things proceed quite differently. For them it is not the commodity value that is given as 100, after this 100 then being divided up into x, y, and z. Instead, the price of the commodity is simply put together out of the value magnitudes of wages, profit, and rent, which are determined independently of the commodity's value and of one another ...[159]

Marx argued that this illusion (the opposite view) necessarily arises in capitalism because individual capitalists, in their everyday practical calculations, do in fact regard these different forms of income as given and independent magnitudes, i.e., as the magnitudes then prevailing in the economy. Individual capitalists are not interested in a scientific analysis of value and distribution. They simply take the forms of income as given, as they actually exist in the economy. These forms of income appear to be determined in separate and independent ways, and the total price appears to be determined as the sum of these individual parts.

Marx also argued in Part 7 that 'vulgar economics' simply took these everyday perceptions of individual capitalists as its starting point and tried to give these perceptions some coherence and profundity.

Vulgar economics actually does nothing more than interpret, systematise, and turn into apologetics the notions of agents trapped within bourgeois relations of production.[160]

[T]he vulgar economist does nothing more than translate the peculiar notions of the competition-enslaved capitalist into an ostensibly more theoretical and generalised language, and attempt to demonstrate the validity of these notions.[161]

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158   Marx 1981, p. 1002.
159   Marx 1981, p. 1007.
160   Marx 1981, p. 956.
161   Marx 1981, p. 338.

Therefore, at the end of Volume III, Marx arrived at the point that he promised in the first paragraph of Volume III – the explanation of the different forms of appearance of surplus-value on the surface of capitalist society and in the consciousness of individual capitalists.

4 Volume I of *Capital*

We come now to the final drafts of Volume I of *Capital*. In these final versions, Marx no longer used the term 'capital in general', but he simply used the term 'capital' or 'capital as such' or 'the inner nature of capital' to mean the same thing – the general form of capital, whose essential nature is the production of surplus-value, as opposed to individual capitals and particular forms of capital. The theory presented in these final versions of Volume I is essentially the same theory as presented in earlier drafts, and this theory is still primarily about the most essential property that all capitals have in common – the production of surplus-value. Therefore, it seems obvious that Marx is still using the same logical framework as before, only without using the Hegelian term 'capital in general', probably as an attempt to popularise his theory, at the incessant urging of Engels.

The fact that Volume I is about the total surplus-value produced by the working class as a whole is especially clear in a number of key chapters in Volume I that will be briefly reviewed. To begin with, *Chapter 4* is entitled 'The General Formula for Capital' and defines the general concept of capital in the same way as before, as M – C – M′, money advanced into circulation in order to make more money. Marx emphasises in Chapter 4 (as he had in the *Manuscript of 1861–63*) that this formula applies to all forms of capital, and that is why it is called the *general* formula (pp. 256–7). Since this general formula applies to all capitals, it also applies to the total social capital, as before. The theory explains the total surplus-value of the capitalist class as a whole.[162]

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162 One important – and unfortunate – popularisation by Marx is the title of Chapter 4 – 'The General *Formula* for Capital'. We have seen above that in the *Manuscript of 1861–63*, the title of this chapter is 'The Most General *Form* of Capital'. The content of Chapter 4 in Volume I is essentially the same as in the earlier manuscript; the general concept of capital is defined in the same way (as M – C – M′, as money advanced in order to become more money). However, Marx's apparent attempt to popularise by using the word '*formula*' (*Formel*) instead of '*form*' (*Form*) obscures the key distinction between the general form of capital and its particular forms, which Marx emphasised in previous manuscripts (and which, we will see below, he continued to emphasise in other ways). This popularisation

In *Chapter 5*, Marx argued (as in the *Manuscript of 1861–63*) that the 'capitalist class as a whole cannot defraud itself', thereby indicating again that Marx's theory is about the total surplus-value of the capitalist class as a whole. And he again made the methodological comment that the particular forms of commercial capital and interest-bearing capital can be explained only after the general form of capital has been explained, i.e., only after the general form of surplus-value, or the total surplus-value, has been explained – which is the task of Volume I.

Chapter 6 derives the necessary condition for the appropriation of surplus-value by the capitalist class as a whole – the existence of a *class of wage labourers* who own no means of production themselves, and therefore must sell their labour power to capitalists in order to survive. This precondition clearly applies to the capitalist mode of production as a whole. Marx states that capital (and wage labour) 'announces a new epoch in the process of social production'.[163] Marx is not talking here about individual capitals, nor about individual industries, but rather about the capitalist mode of production in its entirety. The capitalist mode of production requires a class of property-less workers.

In *Chapter 7*, the general theory of surplus-value is presented and illustrated again in terms of an individual worker, a spinner of yarn. However, Marx's theory is clearly not just about the surplus-value produced by this single yarn spinner, but is rather about the surplus-value produced by each and every worker, and thus about the total surplus-value produced by the working class as a whole. The determinants of surplus-value – the total working day, the intensity of labour, and the necessary labour time – are the same for all workers.

This important point is made explicit in *Chapter 11* ('The Rate and Mass of Surplus-value'), which provides a summary of Marx's theory of surplus-value to that point (which includes only absolute surplus-value, not yet relative surplus-value). This chapter begins with the same example of an average representative individual worker as in earlier chapters, with variable capital = 3 shillings and surplus-value = 3 shillings. Then Marx states that if 100 workers are employed simultaneously by a given capital, then the total variable capital of all workers together will equal 300 shillings and the total surplus-value will also equal 300 shillings; i.e., $V = n\,V_A$ and $S = n\,S_A$ (where V_A and S_A are the average variable capital and the average surplus-value per worker, respectively).

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also obscures the Hegelian roots of Marx's theory. The last sentence of Chapter 4 is a mixture of the rigorous term and the popularised term:

M–C–M′ is in fact therefore the general ***formula*** for capital, in the ***form*** in which it appears directly in the sphere of circulation (Marx 1977, p. 257).

163   Marx 1977a, p. 274.

Later in Chapter 11, Marx briefly applies the same method of aggregation to the economy as a whole. Marx states:

> The labour which is set in motion by the **total capital of society may be regarded as a single working day**. If, for example, the number of workers is a million and the average working day is 10 hours, the *social working day* consists of 10 million hours. With a given length of the working day, the **mass of surplus-value can be increased only by increasing the number of workers**, i.e., by increasing the size of the working population.[164]

This passage is clear evidence that the theory of surplus-value in Volume I applies to the total surplus-value produced by the working class as a whole. Marx's point here is that with a given working day (and given necessary labour), this total surplus-value can be increased only by increasing the number of workers.

Further important evidence that Volume I is about the total surplus-value produced by the working class as a whole is provided by Chapters 10–18, which are about the two main ways to increase the amount of surplus-value produced by the working class as a whole: (1) increase the length of the working day ('absolute surplus-value') and (2) reduce the necessary labour time by technological change which increases the productivity of labour ('relative surplus-value').

Chapter 10 is about the first determinant of surplus-value – the length of the working day. This chapter is about the determination of the length of the working day *for the working class as a whole*, not the length of the working day for individual workers or groups of workers. Marx argued that the length of the working day is determined by a *class struggle* between the capitalist class as a whole and the working class as a whole. Since the amount of surplus-value produced depends in part on the length of the working day (and varies positively with the working day), capitalists will strive to lengthen the working day or at least will resist attempts by workers to reduce it. Workers, on the other hand, have a vested interest in reducing the length of the working day in order to provide more 'free time' for leisure, recreation, etc. Therefore, the length of the working day will be determined by the society-wide class struggle between capitalists and workers, the outcome of which depends on the relative balance of forces between these two classes.

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164   Marx 1977, p. 422.

Chapter 12 on relative surplus-value derives capitalism's inherent tendency toward technological change, and Marx emphasises that this tendency is derived on the basis of the 'inner nature of capital' (i.e., of capital in general), and that a scientific analysis of competition is possible only after an explanation of the inner laws of capital:

> While it is not our intention here to consider the way in which the ***immanent laws*** of capitalist production manifest themselves in the ***external movement*** of the individual capitals, assert themselves as the coercive laws of competition, and therefore enter into the consciousness of the individual capitalist as the motives which drive him forward, ***this much is clear***: a scientific analysis of ***competition*** is possible only if we can grasp the ***inner nature of capital***; just as the apparent motions of the heavenly bodies are intelligible only to someone who is acquainted with their real motions, which are not perceptible to the senses.[165]

Once again, the theory of relative surplus-value and technological change is illustrated by a single worker. However, this theory clearly applies, not just to a single worker, but to all workers together. The effect of technological change on the price of wage goods, and hence on necessary labour and surplus labour, is a *general* effect, which happens to all workers. Therefore, technological change will not only reduce necessary labour and increase surplus labour for the single worker in this illustration, but will do so for the working class as a whole.

In the Introduction to *Part 7* of Volume I, Marx gives a preview of Volumes II and III to come. For Volume III, he says that surplus-value that is produced by productive capital is split into different individual parts, and that this will be the subject of Volume III.

> Its fragments fall to various categories of person, and take on various mutually independent forms, such as profit, interest, gains made through trade, ground rent, etc. We shall be able to deal with these modified forms of surplus-value only in Volume 3.[166]

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165   Marx 1977, p. 433.

166   Marx 1977, p. 701. A similar statement was again made in *Wages, Prices, and Profit*:
  Rent, Interest, and Industrial Profit are only different names for different parts of the surplus-value of the commodity, or the unpaid labour enclosed in it, and they are equally derived from this source, and from this source alone (Marx 1968b, p. 215).

Before the 'modified' forms of surplus-value can be dealt with, the general form of surplus-value must first be explained, and this is the task of Volume I.

Finally, the main point of *Chapter 25* ('The General Law of Capitalist Accumulation') is the effects of the accumulation of the total social capital on the working class as a whole (Marx says this in the first sentence of the chapter). The adjective 'general' in this title (similar to the title of Chapter 4) indicates that this law applies to all capitals, i.e., to capital in general, not to individual capitals or individual industries. The main factor in this analysis is the composition of the total social capital (the ratio of constant capital to variable capital for the economy as a whole), and the tendency of this ratio to increase over time as a result of technological change. The increase in the composition of the total social capital reduces the demand for the labour power of workers, and hence increases unemployment, or the 'industrial reserve army', of the working class as a whole. The 'general law' of capitalist accumulation is that the capitalist mode of production tends to produce both increasing wealth in the hands of capitalists and increasing poverty suffered by workers.

In sum, the macro nature of Marx's theory of surplus-value in Volume I is not always obvious, but it is clear from this review of these key chapters in Volume I and the earlier drafts of Volume I discussed in this chapter.

5   Three Important Letters in 1867–8

In the months following the publication of the first edition of Volume I, Marx wrote three important letters that are relevant to our subject. In August 1867, Marx wrote a letter to Engels in which he stated (in Hegelian terms) that one of the two 'best points' of his book was the treatment of the general form of surplus-value prior to and independently of its particular forms:

> The best points in my book are: ... 2) the treatment of *surplus-value regardless of its particular forms* as profit, interest, rent, etc ... The treatment of the **particular forms** by classical economy, where they are for ever jumbled up together with the **general form**, is an *olla potrida* [hotchpotch].[167]

Five months later (in January 1868), Marx made a similar comment in another letter to Engels. This time the prior treatment of the general form of

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167   Marx MEGA, v. 42, p. 407.

surplus-value is described as the first of 'three fundamentally new elements' of his book (and the 'particular forms' of surplus-value are expressed as 'different fragments'):

> 1) That in contrast to *all* previous political economy, which *from the outset* treats the **particular fragments of surplus-value** with their fixed forms of rent, profit, and interest as already given, I begin by dealing with the **general form of surplus value**, in which all these elements are still undifferentiated – in solution, as it were.[168]

These statements are reminiscent of the opening statement with which Marx began the *Theories of Surplus Value* in the *Manuscript of 1861–63* (discussed above). Clearly, this distinction between the general form of surplus-value and its particular forms was an extremely important part of Marx's logical method.

A few months later (April 1868), Marx wrote an important letter to Engels in which he explained to Engels what 'Book III' is all about ('Section III' has now become 'Book III' and will eventually become Volume III). Engels had asked Marx how he explained merchant profit and how the rate of profit is determined with merchant capital.[169] In order to answer this question, Marx replied with a long and detailed summary of 'Book III'.[170] By this time in his life and theoretical development, Marx had a very clear idea of the subject matter and the overall logical structure of Book III, and its relation to Books I and II. Therefore, this letter provides very important evidence concerning the logic of Book III (Volume III). I think it should be considered Marx's final and definitive statement on Book III. The reader is urged to read the four-page letter in its entirety.

Marx began his summary of 'Book III' by clearly stating its main overall subject:

> In Book III, we then come to the **conversion of surplus value** into its **different forms** and **separate component parts**.

In other words, we come to the distribution of surplus-value.

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168   Marx MEGA, v. 42, p. 514.
169   Marx MEGA, v. 43, p. 19.
170   Marx MEGA, v. 43, pp. 20–5. Unfortunately, Engels's question and Marx's long answer reveals how little Engels understood about Book III at the time. Marx appears to be explaining all this to Engels for the first time.

The letter then summarises each of the seven parts of Volume III, which correspond exactly to the seven parts of Marx's draft of Volume III in the *Manuscript of 1864–65*, which Marx no doubt had in front of him as he wrote the letter to Engels.

The summary of *Part 1* begins with the main points emphasised above: that profit is only 'another name' for surplus-value, and that there is no quantitative difference between them.

> Profit is for us, for the time being, **only another name** or another category of *surplus value*. As owing to the form of wages, the whole of labour appears to be paid for, the unpaid part of labour seems necessarily to come not from labour but from capital, and not from the variable part of capital but from capital as a whole. As a result, *surplus value* assumes the form of *profit*, without there being any **quantitative difference** between the one and the other.

After discussing the important concept of *cost price*,[171] Marx then summarised his analysis of the determination of the rate of profit by the rate of surplus-value and the relative quantities of constant capital and variable capital (i.e., by the composition of capital), which Marx said 'has of course been hitherto *inexplicable* to everybody'. Then Marx made the following important methodological comment:

> The **laws thus found** ... hold good *no matter how* the surplus-value is later divided among the producer, etc. This can only change the *form of appearance*. Moreover, they remain *directly* applicable if m/(c+v) is treated as the relation of the **socially produced surplus value to the social capital**.[172]

In other words, the laws concerning the relation between the rate of profit and the rate of surplus-value derived in Part 1 apply directly to the 'socially produced surplus-value' and the 'social capital'. These laws 'hold good no matter how surplus-value is later divided up among the producer, etc'. The later division of the total surplus-value only changes the *forms of appearance* of this total surplus-value; it does not change this total magnitude.

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171   See Chapter 4 for further discussion of the concept of cost price.

172   *m* here stands for surplus-value, because the German word for surplus-value is *Mehrwert*.

Marx's summary of *Part 2* clearly states the determination of the general rate of profit by the ratio of the total surplus-value to the total capital, prior to the determination of prices of production.

> This rate of profit, expressed absolutely, can be nothing but the *surplus value* produced (annually) by the *capitalist class* in relation to the total of *social* capital advanced. For instance, if the social capital = 400c + 100v and the surplus value annually produced by it = 100s, then ... the rate of profit is 20 per cent. This is the *general rate of profit*.

> ... The price thus equalised, which divides up the social surplus-value equally among the various masses of capital in proportion to their sizes, is the price of production of commodities, the center around which the oscillation of the market prices moves.

Marx called this equalisation of profit rates through prices of production a kind of 'capitalist communism', in which each capital receives a '*fractional part of the total surplus-value* proportionate to the *part of the total social capital* that it forms'.

Marx's summary of *Part 4* on merchant capital and merchant profit (which finally answers Engels's question) is another clear and unambiguous statement that the total amount of surplus-value is determined prior to its division into individual parts, in this case, prior to its division into industrial profit and commercial profit. Marx extended the numerical example in his summary of Part 2 (see above) to include a merchant capital = 100. Since *the total amount of surplus-value remains the same* (= 100), the general rate of profit is reduced from 20 percent to 16⅔ percent. This new, lower general rate of profit is then taken as given in the determination of both the selling price of industrial capital (what I have called the 'wholesale price') and the selling price of commercial capital (what I have called the 'retail price'), as discussed above.

> Until now we have only dealt with *productive capital*. Now there enters modifications through *merchant capital*.

> According to our previous assumption the *productive capital* of society = 500 (millions or billions, *n'importe*). And the formula was 400c + 100v + 100m. The general rate of profit p', = 20 %. Now let the merchant capital = 100.

> So, the 100m has now to be calculated on 600 instead of 500. The general rate of profit is therefore reduced from 20% to 16⅔%. The *price of production* ... now = 583. The merchant sells at 600 and therefore realises ... 16⅔% on his 100, as much as the productive capitalists; or in other words, he appropriates 1/6 of the social surplus value. The commodities – considered in their aggregate and on a social scale – are sold at their value.[173]

The summary of *Part 5* is very brief, but again makes clear that the total surplus-value and the general rate of profit are predetermined and presupposed in the division of the total surplus-value into profit and interest:

> We have now reduced profit to the form in which it appears in practice, i.e. according to our assumption, 16⅔%. *Next comes the division of this profit into entrepreneur's gain and interest.*

For *Part 6*, there is only one phrase (perhaps Marx was running out of steam in his letter):

> Transformation of surplus profit into rent.

This phrase by itself is not completely clear, but we know from the prior discussions of Marx's theory of rent in the *Manuscript of 1861–63* and the *Manuscript of 1864–65* that this means that landlords are able to appropriate a share of the total surplus-value as rent (the surplus profit produced in agriculture), due to their monopoly ownership of the land by the pricing mechanism discussed above.

Finally, Marx's summary of *Part 7* emphasises his critique of the 'vulgar conception', according to which each of the different forms of income (wages and profit and rent) has a separate and independent source, and the value of commodities is determined by adding up these independent forms of income.

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173   There is one terminological difference between this letter and the 1863–5 draft of Volume III: prices of production are here defined as the selling price of industrial capital (the 'wholesale price'), rather than the selling price of commercial capital (the 'retail price'), as in the 1863–5 draft. So either Marx changed his mind or perhaps he remained undecided about which of these two prices should be called prices of production. But the method of determination of these two prices is exactly the same, as described above, with the general rate of profit taken as given, as determined by the ratio of the total surplus-value to the total capital, now including commercial capital.

As discussed above, Marx's conception is the opposite: that the total value is determined prior to its division into individual parts, or individual forms of income.

> At last we have arrived at the *forms of manifestation* which serve as the *starting point* in the vulgar conception: rent, coming from the land; profit (interest), from capital; wages, from labour. But from our standpoint things now look different. The apparent movement is explained.

Therefore, I think this letter provides very strong evidence in support of the interpretation of Volume III presented in this paper. The main overall subject is the distribution of surplus-value and the particular forms of surplus-value, and the key quantitative premise of the prior determination of the total amount of surplus-value is clearly and unambiguously stated, especially in the summaries of Parts 1, 2 and 4.

6 Conclusion

I conclude from this long review of all the drafts of *Capital* and these important relevant letters that Marx was clear and consistent throughout all the drafts about the relation between the general form of surplus-value and the particular forms of surplus-value, which in quantitative terms is the relation between the total surplus-value and the individual parts of surplus-value. The general form of surplus-value and the total quantity of surplus-value are determined first at the level of capital in general, and then the particular forms and the individual parts of surplus-value are determined subsequently at the level of abstraction of competition. The total surplus-value is clearly primary and determined prior to its division into individual parts. In the subsequent division of the total surplus-value into individual parts, the total surplus-value is taken as given, as already determined by the prior analysis of capital in general, and its quantity does not change as a result of its division into individual parts. The general form of surplus-value must be determined prior to its particular forms; otherwise, there are 'theoretical errors' and a 'hotchpotch'.

Marx discovered this logical framework while developing his general theory of surplus-value in the *Grundrisse*, he began to develop his theory of the particular forms of surplus-value in the *Manuscript of 1861–63*, and then further developed this theory in the *Manuscript of 1864–65*. In the triumphant days after finally publishing Volume I, Marx referred to this aspect of his theory as 'one of the best points' of his theory and 'fundamentally new'. And one could add today

that this aspect of Marx's logical method is still fundamentally unique and different from all other economic theories.

TABLE 1   *Overview of Marx's* Manuscript of 1861–63

	PRODUCTION OF S.V. Capital in general	DISTRIBUTION OF S.V. Competition	MECW Volumes
Aug. 1861	*Parts 2–4 of Volume I*		30: 9–346
Mar. 1862	TSV. I Smith, etc.		30: 347 31: 250
Jun. 1862		TSV. II rent (Rodbertus, etc.) prices of production	31: 250–32: 208
Oct. 1862	TSV. III disintegration opposition (Hodgskin)		32: 209–49
Nov. 1862		TSV. III revenue and interest critique of vulgar economics	32: 449–541
		commercial profit	33: 9–68
Dec. 1862	*'Capital and Profit'* (Parts 1 and 3 of Vol. III)		33: 69–153
Jan. 1863		*commercial profit* *reflux of money*	33: 154–252
	TSV. III: Ramsay, etc.		33: 253–371
		EXPANDED OUTLINE OF VOLUME III (out of place in TSV)	33: 299 and 346–7
Mar. 1863	*Parts 4–8 of Volume I*		33: 373–34: 354

MECW: *Marx-Engels Collected Works*, Volumes 30–4
TSV: *Theories of Surplus-Value*, Volumes I–III
bold italics: recently published for the first time.

The Circuit of Money Capital: M Presupposed

The complete form of the process is therefore *M–C–M′*, where *M′* = *M* + *ΔM*, i.e. the original sum advanced plus an increment. This increment or excess over the original value I call 'surplus-value'.[1]

If the original capital is a quantum of value = x, it becomes capital and fulfills its purpose by changing into x + Δx, into a quantum of money or value = the original sum + a balance over the original sum. In other words, it is transformed into the *given amount of money* + *additional money*, into the *given value + surplus-value* ...[2]

Before production began, we had a *capital of £500. After production* is over, we have the **capital of £500 plus a** *value* **increment of £100.**[3]

The relation between the *value preposited to production* and the value which results from it – *capital as preposited value* is capital in contrast to profit – constitutes the *all-embracing and decisive factor* in the whole process of capitalist production.[4]

The *starting point* of this circulation [of capital] is *money*, exchange value become independent.[5]

Money therefore forms the *starting-point* and the conclusion of every valorization process.[6]

The *characteristic feature of variable capital* is that a definite, *given* (i.e. in this sense constant) part of capital, a *given* sum of value (assumed to be equal to the value of the labour power, although it is *immaterial* here whether the wage is the same as, or more or less than, the value of the

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1 Marx 1977a, p. 251.

2 Marx 1977b, p. 957.

3 Marx 1981, p. 124.

4 Marx MECW, v. 32, p. 318 [TSV, v. III, p. 131].

5 Marx MECW, v. 30, p. 15.

6 Marx 1977a, p. 255.

labour power), is exchanged for a force that valorises itself and creates value – labour power, which not only reproduces the value paid to it by the capitalist, but also produce a surplus-value, a value that did not previously exist and is not bought with an equivalent.[7]

If we take society at any one moment, *there exists* simultaneously in all spheres of production ... a *definite constant capital – presupposed as a condition of production ... a* postulated *value which must* reappear *in the value of the product*.[8]

Since ... the elements of capitalist production already enter the process of production as *commodities*, i.e. with *specific prices*, it follows that the value added by the constant capital is *already given in terms of a price*. For example, in the present case it is *£80* for flax, machinery, etc.[9]

The cost price of a commodity is a *given precondition* independent of the capitalist's production.[10]

value = cost price + surplus-value $V = K + s$
price of production = cost price + profit $P = K + p'$[11]

I argued in Chapter 1 that the basic logical framework of Marx's theory is the *circuit of money capital* – M – C ... P ... C′ – M′ – and that this logical structure implies that the initial money capital M is taken as given, as the initial data in Marx's theory, both in the theory of the production of surplus-value in Volume I and in the theory of the distribution of surplus-value in Volume III, for the following reasons: (1) M is the starting point of the circuit of money capital and thus M is the starting point of Marx's theory of the circuit of money capital, and (2) M–C is the first phase of the circulation of money capital, which takes place in the sphere of circulation, prior to production, so that the presuppositions of Marx's theory of surplus-value in the sphere of production come from previously existing quantities of money capital advanced in the sphere of circulation.

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7   Marx 1978, pp. 295–6.
8   Marx MECW, v. 30, p. 413 [TSV, v. I, p. 109].
9   Marx 1977b, p. 957.
10   Marx 1981, p. 265.
11   Marx MEGA II/4.2, p. 240.

The main goal and purpose of the circuit of money capital (i.e., of capitalism) is to convert a given, previously existing quantity of money capital M into a greater quantity of money capital M′ (= M + ΔM) through the production and sale of commodities. Therefore, the main question of Marx's theory of the circuit of money capital is precisely how the initial M becomes M + ΔM, and Marx's theory of ΔM takes M as given, the previously existing initial quantity of money capital advanced, that is to become capital by increasing its magnitude.

And the crucial point for the 'transformation problem' is that, in Marx's theory of prices of production in Volume III, the *same quantities of constant capital and variable capital* are taken as given, as in the Volume I theory of the total surplus-value – the *actual* quantities of money capital advanced to purchase means of production and labour power in the first phase of the circulation of money capital.[12] The only difference is that in Volume III the *individual* quantities of constant capital and variable capital advanced are also taken as given, in addition to the total constant capital and variable capital that are taken as given in Volume I (the M_i's in each industry, in addition to the total M for the economy as a whole). The question that Marx's theory of prices of production in Part 2 of Volume III is intended to answer is this: how is the original M_i advanced and consumed in each industry recovered, and the total surplus-value distributed in proportion to the M_i's advanced in each industry? For this question, the appropriate initial givens are the initial M_i's in each industry which have to be recovered before any surplus-value can be distributed. These given M_i's become 'determining factors' of the prices of production of commodities, similar to the total M in the theory of total surplus-value in Volume I.

That is why Marx did *not* 'fail to transform the inputs of constant capital and variable capital from values to prices of production' – because no such transformation is necessary or appropriate in Marx's theory. The inputs of constant capital and variable capital in Marx's theory of prices of production in Volume III are the *same actual* quantities of money capital advanced in the real capitalist economy as inputs in Marx's theory of total surplus-value in Volume I. There are not 'two systems' in Marx's theory – a 'value system' and a 'price system' – with two sets of magnitudes of constant capital and

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12   As discussed in Chapter 1, by 'actual' I mean quantities of constant capital and variable capital that tend to be equal to the actual long-run equilibrium prices (i.e., prices of production) of the means of production and means of subsistence, respectively; i.e., as opposed to hypothetical quantities of constant capital and variable capital that are equal to hypothetical long-run equilibrium prices of these inputs (the values of these inputs), as in the standard interpretation.

variable capital. Instead, there is only one system in Marx's theory, the actual capitalist economy (assumed to be in long-run equilibrium), with one set of magnitudes of constant capital and variable capital, which is first analysed at the aggregate level and then is analysed at the industry level. Therefore, there is no 'transformation' of constant capital and variable capital to be made; or the only 'transformation' is disaggregation. Constant capital and variable capital are the same actual quantities of money capital at both levels of abstraction.

This chapter will present considerable textual evidence to support this monetary interpretation of the initial givens in Marx's theory. We will examine the same four drafts of *Capital* as in Chapter 3, plus another short manuscript (the 'Results') which was written between the *Manuscript of 1861–63* and the *Manuscript of 1864–65*, and which was intended as a transition from Volume I to Volume II of *Capital*.

In this chapter, I use Marx's terminology of the 'value' of commodities rather than my term the 'value-price' of commodities (in Chapter 2) in order to be consistent with the many passages quoted from Marx's writings in this chapter. Marx's meaning of 'value' in these passages is almost always the *form of appearance of value* (i.e., money and prices), not the substance of value (abstract labour) or the magnitude of value (socially-necessary labour time). Therefore, Marx's meaning in these passages (unless otherwise noted) is the same as my term 'value-price'.

1 The Grundrisse

In the Introduction to the *Grundrisse* on the 'Method of Political Economy', Marx stated that '*capital* is the all-dominating economic power of bourgeois society', and therefore should be the central concept in a theory of capitalism.[13] Capital is itself defined by Marx in terms of *money*, and therefore the *Grundrisse* begins with the 'Chapter on Money', as the necessary preliminary for the much longer 'Chapter on Capital'.

1.1 Chapter on Money
The 'Chapter on Money' discusses three main functions of money: measure of value, medium of circulation, and *abstract representative of wealth* (money as money). The transition from money to capital is based on the third function of representation of wealth. This transition from money to capital is discussed

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13   Marx 1973, p. 107.

more fully in the *Urtext* (which is a draft of the last part of Chapter 2 of the *Contribution to a Critique of Political Economy* on 'Money', written soon after the *Grundrisse* and published for the first time in English in 1987 in *Marx and Engels Collected Works*, Volume 29); this draft will also be discussed along with the *Grundrisse* (referred to as Marx 1987b).

In the function of the abstract representative of wealth, Marx emphasised that money acquires an *independent and autonomous existence*, i.e., independent of circulation, simply as a quantity of money in the possession of some owner:

> Money, then, has an ***independent existence outside of circulation***; it has ***stepped outside it***.[14]

> Money, as 'universal form of wealth', as ***exchange value become independent***, confronts the whole world of wealth.[15]

This independently existing money is the starting point and the presupposition of the circuit of capital:

> ***Capital comes initially from circulation***, and, moreover, its ***point of departure is money*** ... ***Money*** is the first form in which ***capital*** appears as such.[16]

> ***Circulation***, and ***exchange value deriving from circulation*** [i.e., money], the ***presupposition*** of capital.[17]

This money as abstract wealth, which exists independently of circulation, is also a definite *quantity* of money. Indeed, since it is pure abstract wealth, the *only thing* that matters about money in this function is its quantity. The only difference between various holdings of money is their quantity.

> ... as money in this third role, ***the amount of itself as of a definite quantity is essential.*** If its general quality as general wealth is given, there is no difference within it, other than the ***quantitative***.[18]

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14   Marx 1973, p. 216.
15   Marx and Engels 1987b, p. 479.
16   Marx 1973, p. 253.
17   Marx 1973, p. 259.
18   Marx 1973, p. 229.

And if the quantity of money is all that matters in this function as abstract wealth, then it is a small step to the goal of '*more money*'. Therefore, in order to better perform its function of abstract wealth, money is 'thrown back into circulation' in order to *increase its quantity*. This is the way that a definite quantity of money is 'transformed into capital', and this is the starting point of that transformation. Independently existing money (that 'stands outside of circulation') is thrown back into circulation in order to increase its magnitude and extract *more money* from circulation, and in this way the presupposed independent quantity of money becomes capital.

> As the material representative of universal wealth, money is realised only when it is thrown back into circulation ...[19]

> As a form of universal wealth, as *exchange value become independent*, *money* is incapable of any other movement but the *quantitative* one: to expand itself.[20]

> Resulting from circulation as *adequate exchange value and independent* but again entering circulation, in it and through it perpetuating and valorising (multiplying) itself, *money is capital.*[21]

In order to express this circuit of money capital succinctly, Marx began to use the (now familiar) symbolic formula: M – C – M′, and to contrast it with the simple circuit of commodities: C – M – C. We will see in the next section that this formula becomes much more prominent in the *Manuscript of 1861–63*, and becomes the basic logical framework of Marx's theory of capital.

1.2   *Chapter on Capital*

In order to explain how money capital accomplishes this goal of becoming more money, and thus becomes capital, Marx's theory *takes as given* the initial independently existing quantity of money capital, and uses this presupposed M to explain M′ and ΔM, as explained in Chapter 2. Thus, when Marx makes the transition in his theory from money to capital, this *independently existing quantity of money* is assumed to exist, and to have been 'thrown into circulation', and this pre-existing quantity of money is the starting point of the circuit of

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19   Marx and Engels 1987b, p. 479.
20   Marx and Engels 1987b, p. 495.
21   Marx and Engels 1987b, p. 496.

capital, and is taken as given as such in the subsequent theory of how the initial M becomes M+ΔM.

> We have so far examined only one side [of capital], that of its self-preservation in and by circulation. The other equally important side is that exchange value is *presupposed ... as money*.[22]

> We have seen that the ***original presupposition*** of the coming into being of *capital* is the existence of *money as money*, i.e. as money which has ***withdrawn from circulation*** and asserts itself *negatively* towards it, i.e. *value* which has become ***independent*** from and against circulation [i.e., value as money] ...[23]

The 'Chapter on Capital' thus begins with given quantities of money as its elementary premise (the 'original capital'). Surplus-value is defined as the difference between the price of the product and the presupposed 'original components of capital'.

> *The surplus-value which capital has at the end of the production process –* a surplus-value which, as a higher price of the product ... is greater than that which was present in the ***original components of capital***.[24]

The original presupposed quantity of capital is divided into two main components – that which purchases means of production and that which purchases labour power (Marx had not yet articulated the concepts of constant capital and variable capital). Marx emphasises that these two components play *entirely different roles* in the determination of the value and surplus-value of the product. The part of the presupposed original capital that purchases means of production (i.e., what Marx later called constant capital) is *transferred* to the value of the product, and thus *remains unchanged* in quantity (60 thalers in Marx's main example).[25] There is a long discussion of the transfer of this 'means of production' component of the original capital to the value of the product.[26] This pre-existing 'old value' is *presupposed* and is 'preserved' in the

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22   Marx 1973, p. 262.

23   Marx 1973, p. 358.

24   Marx 1973, p. 321.

25   A thaler was a silver coin used throughout Europe from the 16th to the 19th centuries, including in Prussia where Marx was from.

26   Marx 1973, pp. 354–64.

value of the product. Since this component of the presupposed original capital remains unchanged, it cannot be a source of surplus-value. Surplus-value is possible only if the new value produced by labour is greater than the other component of the presupposed original capital that is exchanged for labour power (which Marx called 'labour capacity' in the *Grundrisse*); i.e., if the new value produced is greater than the presupposed price of labour (in Marx's example, 80 thalers > 40 thalers). In other words, surplus-value is possible only if it takes only a *part of the working day* for workers to produce new value which is equivalent to their presupposed money wages, so that the remainder of the working day produces surplus-value for capital. Marx put it this way:

> This [surplus-value] in turn is possible only if the **labour objectified in the price of labour** is smaller than the living labour time purchased with it.[27]

The 'labour objectified in the price of labour' is the labour required for workers to produce a value equivalent to the presupposed price of labour (power), or to the money capital advanced to purchase labour power. The presupposed price of labour power is equal to the price of the means of subsistence, which is assumed in this draft to be equal to the *value* of the means of subsistence, i.e., is proportional to the labour time required to produce means of subsistence. Marx also made a similar assumption about the price of the means of production (that it is proportional to the labour time required to produce means of production). Marx had not yet developed his theory of the distribution of surplus-value and prices of production, and thus he did not discuss in the *Grundrisse* the possibility that the prices of the means of subsistence and means of production might not be equal to their values. However, we will see below that in the *Manuscript of 1861–63*, Marx began to develop his theory of prices of production and he also began to discuss the possibility that the prices of the means of subsistence and means of production are also equal to their prices of production, not their values, and to consider the implications of this important point for his theory of value and surplus-value.

1.3   *Capital and Profit*
We saw in Chapter 3 that Section III of the *Grundrisse* introduces the concept of *profit*, which is defined as identical in magnitude to surplus-value, but this identical magnitude is viewed in relation to the total capital advanced (M), rather than just to the capital advanced to purchase labour power (its real

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27   Marx 1973, p. 321.

source, according to Marx's theory). The point to emphasise here is that the total capital to which profit is related is described as the '*presupposed*' capital, which must be replaced by the value of the product, and profit is defined as the excess of the price of the product over this *presupposed* capital:

> Surplus-value thus measured by the value of the **presupposed** capital ... is *profit* [*M*] ... Surplus-value in the form of profit is measured by the total value of the capital **presupposed** to production.[28]

> In relation to profit, the value of the capital **presupposed** in production appears as *advances – production costs* which **must be replaced in the product**. After deduction of the part of the price that replaces them [the production costs], the excess forms the profit.[29]

And two pages after this last passage, Marx made the important observation that, since capital obtains the means of production and labour through *exchange*, i.e., capital purchases them in the sphere of circulation, these initial elements of capital are '*already there*', prior to production, in the form of the *prices* paid for the means of production and labour, and these 'already there' elements of capital are *presupposed* as such in the determination of the value and surplus-value of the output:

> In so far as capital obtains, **purchases**, raw material, instrument and labour by means of **exchange**, its **elements** themselves are **already there** in the form of **prices**; **already posited** as **prices**; **preposited** to capital. The way the market price of its product compares with the [preposited] prices of its elements becomes **decisive** for it ...[30]

We can see that the 'decisive' comparison for capital is the difference between the price of the output and the *presupposed prices of the elements of production*; this difference is the quantity of surplus-value produced, which is the main phenomenon that Marx's theory is intended to explain.

The *Grundrisse* (together with the *Urtext*) is of course just the first draft of *Capital*, and there were three more drafts to come. But already Marx was clear that the general framework for his theory of capital would be the circulation of

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28   Marx 1973, pp. 746–7.

29   Marx 1973, p. 760.

30   Marx 1973, p. 762.

money capital (M – C – M′), that the main goal of his theory is to explain the total surplus-value (ΔM) produced in the capitalist economy as a whole, and that the original capital (M) would be presupposed in his theory of value and surplus-value, i.e., in his theory of how the initial presupposed M becomes M + ΔM as a result of the production and sale of commodities.

2   Manuscript of 1861–63

2.1   Second Draft of Theory of Surplus-Value

As discussed in the Chapter 3, the *Manuscript of 1861–63* began with a second draft of Marx's theory of surplus-value (which later turned out to be Parts 2–4 of Volume I of *Capital*). This second draft was published for the first time in English in 1988 in *Marx and Engels Collected Works*, Volume 30, and is very interesting and important. This draft is much more clearly developed than the rough and exploratory first draft in the *Grundrisse*, and it includes more methodological comments than the 'popularised' final versions of Volume I (similar in this respect to the *Grundrisse*), among which there are also remarks on the inputs to the valorisation process.

The title of the first section is the clear and significant 'Transformation of Money into Capital', which begins with a subsection entitled 'The general form of capital' and the symbolic representation M – C – M′, the logical framework for Marx's theory of capital. Thus, we can see again that capital is defined in terms of money, as money advanced into circulation in order to make more money.

> The starting-point [of the circulation of capital] is ***money***, the converted form of the commodity, ... in which the labour contained in it has the form of ***general social labour***, i.e. in which it is *exchange-value become independent*.[31]

> Value (*money*) resulting from circulation as adequate exchange value (***money***), taking on an ***independent*** form, but entering again into circulation, preserving and multiplying (increasing) itself in and through it, is *capital*.[32]

31   Marx MECW, v. 30, p. 11.
32   Marx MECW, v. 30, p. 12.

> The starting point of this circulation [of capital] is ***money***, ***exchange-value become independent***.[33]

> In the process M–C–M, the value (a ***given*** sum of value) should be maintained and increased while it enters into circulation.[34]

> Value, become ***independent in money***, was to maintain, increase itself in this exchange, assumes a self-sufficient character.[35]

As emphasised throughout this book, the main goal of Marx's theory is to explain how the initial M advanced becomes M + ΔM as a result of capitalist production. In his theory of M′ and ΔM, the initial 'independent' M is presupposed, both as the initial cost and also as a determinant of value and surplus-value.

Marx began his theory of surplus-value (in the section on 'The Valorisation Process') with some important methodological remarks that have to do with the inputs to the valorisation process – that the inputs to the valorisation process are *commodities*, with *already existing prices* (similar to his comment on p. 762 of the *Grundrisse* discussed above):

> Just one more preliminary remark before we proceed to this calculation. All the ***prerequisites*** of the labour process, all the things that went into it, were not just use values but ***commodities***, use values with a ***price*** expressing their exchange value. ***Commodities were present in advance*** as ***elements*** of this process, and must emerge from it again. Nothing of this is shown when we look at the simple labour process as material production. We assume that the ***elements*** of the labour process are ***not use values*** to be found in the possession of the money owner himself, but were ***originally acquired as commodities*** by purchase and that this forms the ***prerequisite*** of the entire labour process.[36]

Marx went on to say in this passage that this assumption that the inputs to capitalist production already have prices is '*methodologically necessary*' because the goal of his theory is to show 'how money is transformed into cap-

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33   Marx MECW, v. 30, p. 15.
34   Marx MECW, v. 30, p. 33.
35   Marx MECW, v. 30, p. 67.
36   Marx MECW, v. 30, pp. 67–8.

ital', i.e., how the initial presupposed money (advanced to purchase inputs) becomes more money:

> It is however an *essential **presupposition*** that the money owner should buy more than just the labour capacity. In other words, not only must ***money*** be exchanged for the labour capacity, but equally for the other objective conditions of the labour process, material of labour and means of labour ... To begin with, this presupposition is ***methodologically neces-sary*** at the stage of development presently being considered. ***We have to see how money is transformed into capital***.[37]

A few pages later, Marx stated that the price of the means of production that is transferred to the value of the output is *presupposed*, *because* the means of production are themselves *commodities* which are purchased at the beginning of the circulation of capital, and thus the labour time contained in the means of production *has already been expressed* as the *price* at which the capitalist purchased them. This already existing actual price of the means of production is presupposed and is transferred directly to ('re-appears' in) the value of the output and becomes a 'constituent' of the value of the output.

> This value [of the raw material] is however ***already expressed in the price*** at which the material of labour was bought, say e.g. a price of 100 thalers. ***The value of this part of the product enters into it already determined as price*** ... [The means of labour are] equally purchased. Hence the labour time contained in it, say of 16 working days, ***is expressed in its price of 16 thalers***.[38]

> Before we go further we ought to discuss here how the value of the material and means of labour is ***preserved*** in the labour process, so that it ***re-appears*** as a ***finished***, *presupposed **constituent*** of the value of the product, ... their value is not destroyed, ***reappearing*** as a ***constituent***, a *presupposed **constituent*** of its value.[39]

> *The values of the material and means of labour therefore appear again in the product as constituents of its value.* This value is *presupposed*, since

37   Marx MECW, v. 30, pp. 68–9.
38   Marx MECW, v. 30. p. 70.
39   Ibid.

the *labour time contained in the material and means of labour was expressed in their prices in its general form, as social labour*; these are the *prices at which the money owner bought them as commodities before he began the labour process*.[40]

But the values of the material and means of labour only *re-appear* in the product of the labour process to the extent that they were *preposited* to the latter as values, i.e. *were values before they entered the process*.[41]

The value of the material and means of labour only *re-appears* in the product *because* the material and means of labour possess this value *before* the labour process and *independently* of it.[42]

I think these passages provide strong textual support for the 'monetary' interpretation of the initial givens in Marx's theory of surplus-value presented in this book. The already existing prices of the means of production are a '*presupposed constitutent*' of the value of the product; an '*independent, given value, preposited*' to the current labour process.[43] The prices of the means of production *re-appear* in the price of the product *because* the means of production enter the valorisation process with existing prices.

As in the *Grundrisse*, Marx divided the original capital into two main components, and emphasised again that these two components *play entirely different roles* in the determination of value and surplus-value. Marx started in this draft to use the names of *constant capital* and *variable capital* to refer to these two components of the original capital.[44] The constant part of the original capital that is exchanged with means of production is *transferred* to the value of the product, and *remains unchanged in quantity* (100 thalers in Marx's main example), and thus is not a source of surplus-value. There is another long discussion of the value transferred from this component of the original capital

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40 Marx MECW, v. 30, pp. 73–4. It should be noted that when Marx states in this passage that the labour contained in the means of production was expressed in its 'general form, as social labour', he means that this labour was expressed in the form of *money*, or as the *price* of the means of production (see MECW, v. 30, pp. 11 and 34 for similar expressions of money as the general form of social labour). Social labour has no other general form in capitalism besides money.

41 Marx MECW, v. 30, p. 90.

42 Marx MECW, v. 30, p. 92.

43 Marx MECW, v. 30, p. 80.

44 Marx MECW, v. 30, pp. 165–8.

as a 'presupposed constituent' to the value of the product.[45] And later in the draft, Marx summarised the relation between the constant capital advanced and the value of the product:

> As regards the **part of the capital's value** that is contained in the used up raw material and means of production, we have seen that it simply **reappears** in [the value of] the product. This part of capital never adds more to the value of the product than the value it itself possesses independently of the production process. In reference to the **value of the product**, we can call this part of the capital its *constant* part.[46]

In this way, the constant part of capital which existed prior to the current production process is taken as given and is transferred to (becomes one component of) the value of the product of the current production process.

On the other hand, the other component of the original capital that is exchanged with labour power is *not* added to the value of the product, but instead this capital is exchanged for a value-creating power which makes the production of surplus-value possible.

> If a **given** value is exchanged for the value-creating activity, if objectified labour is exchanged for living labour, in short if **money is exchanged for labour**, the possibility seems to be available that by means of this process of exchange the **existing** value can be preserved or increased.[47]

The quantity of surplus-value produced is determined by subtracting this given quantity of capital exchanged for living labour from the new value produced by living labour in production. Surplus-value is produced because it takes only a part of the working day for living labour to produce new value that is equivalent to this component of the original money capital, leaving the rest of the working day for labour to produce surplus-value. Marx expressed this conclusion in the same way as in the *Grundrisse*:

> This is only possible ... because the **labour time objectified in the price of labour** (the wage of labour) is less than the living labour time by which it is replaced in the production process.[48]

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45   Marx MECW, v. 30, pp. 73–81.
46   Marx MECW, v. 30, p. 176.
47   Marx MECW, v. 30, p. 35.
48   Marx MECW, v. 30, p. 172.

Again, the 'labour time objectified in the price of labour' is the labour time required to produce an equivalent to the presupposed price of labour (power), i.e., to the money capital advanced to purchase labour power.

The previous passage comes from the first section of Chapter 2 on 'Absolute Surplus Value', which has the long title 'Surplus-value is to be conceived as a simple relation to a definite portion of capital, namely that **laid out in wages**.'[49] The capital 'laid out in wages' is presupposed and subtracted from the new value produced in order to determine the surplus-value produced. In this discussion, Marx uses the following algebraic formulation: A stands for the value of raw materials, B for the value of machinery, etc., x for the new value produced by current labour, P for the value of the product; and P = A + B + x (all these variables in term of money – thalers). Marx states that A and B are '*known*' at the beginning of the labour process, but x is 'not yet known' and will be determined in the labour process by the quantity of labour employed. Marx also states that we 'know' the price the money owner has paid to purchase labour power. These known quantities are taken as given in the determination of the value and surplus-value of the product.[50]

Later in the manuscript, Marx utilised his newly articulated names of constant capital and variable capital and some similar algebra to clearly summarise the relation between the *capital advanced* (c + v) and the *value of the product* (c + a):

> We have to distinguish between more parts in the *value of the product* than in the *value of the capital advanced*. The latter = $c + v$. The former = $c + a$. (The part of the product which expresses the newly added labour). But *a* = $v + s$, = value of variable capital + the surplus value.[51]

We can see that the components of the advanced capital (c and v) are also components of the value of the product, as discussed above. These components

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49   Ibid.

50   Marx MECW, v. 30, p. 81. In this respect, Malthus employed a logical method that was similar to Marx's. Malthus stated in his *Principles of Political Economy* that the advances of capital are *known* and the value of the product is unknown and remains to be ascertained: 'The advances may be **known** and measured beforehand, while the value of the product, and the proportion of that value which goes to replace the advances remains to be ascertained when the product is sold. The varying rate of profits therefore … depends upon the excess of its value when sold above the **known** value of the advances', Malthus 1964, pp. 266–7.

51   Marx MECW, v. 30, p. 168.

of the advanced capital are *presupposed*, and become components of the value of the product. Marx had finally hit upon the appropriate names for these two components of the original capital, including an algebraic formulation, which further clarified the relation between the capital advanced and the value of the product, and the different roles the two components of the original capital play in the determination of the value and surplus-value of the product.

As in the *Grundrisse*, Marx assumed in this second draft of his theory of surplus-value at the beginning of the *Manuscript of 1861–63* that the prices of the means of subsistence and means of production are equal to their values. Marx had still not yet developed his theory of prices of production and thus still did not consider in this section the possibility that the prices of the means of subsistence and means of production are also equal to their prices of production, not their values. However, Marx would soon thereafter begin to develop his theory of prices of production in this manuscript as a result of his chance encounter with Rodbertus's theory (discussed in the previous chapter) and also to apply this theory to the prices of the means of subsistence and means of production in a discussion of Samuel Bailey's theory (see Section 2.4 below).

2.2 *Constant Capital and Marx's Critique of 'Smith's Dogma'*

As discussed in Chapter 3, Marx broke off while working on Part 4 of Volume I (on relative surplus-value) and began to write the section of the manuscript entitled *Theories of Surplus-Value*, beginning with the discussion of the Physiocrats and Smith. There is an important passage early in Section 10 of the chapter on Smith that is relevant to the determination of constant capital in Marx's theory, including the issue of whether constant capital should be valued in historical or current costs. In this chapter, Marx discussed for the first time what he later called 'Smith's dogma', according to which the total price of the total commodity product can be resolved into wages + profit + rent. Marx argued that this cannot be true. The total price must also contain a component of constant capital; otherwise capitalists would not be able to recover the cost of the consumed means of production and repurchase the means of production and continue production in the next period.[52] The crucial point for our present purpose is that Marx states clearly in this passage that the magnitude of constant capital is a *'postulated value* which must *reappear* in the *value* of the product':

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[52] This criticism of 'Smith's dogma' was the main purpose of Marx's reproduction schemes, which he sketched for the first time in this chapter on Smith in the *Theories of Surplus-Value*; see Moseley 1998 for an extensive discussion of Marx's reproduction schemes.

> If we take society at any one moment, ***there exists*** simultaneously in all spheres of production, even though in very different proportions, a ***definite constant capital – presupposed as a condition of production –*** that once and for all belongs to production and must be given back to it ... It is true that the *value* of this constant part can fall or rise, depending on whether the commodities of which it is composed have to be reproduced at less or greater cost. This *change of value*, however, ***never alters the fact that in the process of production, into which it enters as a condition of production, it is a*** postulated [*vorausgesetzter*] **value** *which must* reappear *in the value of the product.*[53]

We can also see from this passage that, if the price of the means of production changes, then the magnitude of constant capital that is taken as given will also change; and this new magnitude of constant capital is still a '*postulated* value which must *reappear* in the value of the product'. This issue is discussed further in Chapter 9 on the Temporal Single System Interpretation of Marx's theory.

2.3 *Rodbertus and the First Draft of the Theory of Prices of Production*

We also saw in Chapter 3 that Marx's work on the *Theories of Surplus-Value* took an unexpected turn with a discussion of Rodbertus's theory of rent, in which Marx sketched for the first time the details of his theory of 'average prices', which equalise the rate of profit across industries, and thus are not equal to the values of commodities. The main point to emphasise here is that the inputs of Marx's theory of prices of production are quantities of *money capital advanced* (or 'capital *laid out*'), which are taken as given. Marx's examples in this draft of the given capital advanced are all in terms of British pounds (as are the quantities of values and average prices). The *same given quantities* of money capital advanced are used to determine both the values and prices of production of the five commodities in Marx's main example.

I mentioned in Chapter 3 the important letter that Marx wrote to Engels in August 1862, soon after working on Rodbertus, in which he explained in detail his recently developed theory of prices of production (called 'cost prices' at the time).[54] Marx concluded the summary by saying that prices determined in this way are equal to 'the ***expenses of capital*** + average profit'. The 'expenses of capital' are taken as given and the average profit is determined by the general

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53 Marx MECW, v. 30, p. 413 [TSV, v. I, p. 109]; the German word *vorausgesetzter* will be discussed below.

54 Marx MECW, v. 41, pp. 394–7.

rate of profit, which is determined by Marx's theory of the total surplus-value. Marx still does not discuss the possibility that the given 'capital advanced' might not be equal to the values of the means of subsistence and means of production. He was just for the first time working out his theory of the prices of production of the *outputs*, and perhaps he did not yet fully realise that the prices of the *inputs* would also be equal to their prices of production, not their values. The first evidence of such a realisation is in his discussion of Bailey later in the *Manuscript of 1861–63*, which is the subject of the next subsection.

2.4   Bailey's 'Contribution'

Later in the *Theories of Surplus-Value* portion of the *Manuscript of 1861–63*, Marx wrote a chapter entitled 'Disintegration of the Ricardian School' (Torrens, Bailey, MacCulloch, Mill, etc.). The discussion of Bailey is especially relevant for our subject of the determination of constant capital and variable capital in Marx's theory. Early in the section on Bailey, in a brief review of the relation between money and capital, Marx emphasised again that the money capital advanced in the circulation of capital is *presupposed*, and that the relation between the *presupposed* advanced money capital and the final money capital recovered that results from production is the '*all-embracing and decisive factor*' in capitalist production:[55]

> For its part, the development of capital already *presupposes* the full development of the exchange value of commodities and consequently its independent existence as ***money***. The ***point of departure*** in the process of the production and circulation of capital, is the ***independent form of value*** [i.e., money] which maintains itself, increases, ***measures the increase against its original amount*** … The relation between the ***value preposited*** [*vorausgesetzten*] ***to production*** and the value which results from it – capital as ***preposited*** [*vorausgesetzter*] ***value*** is capital in contrast to profit – constitutes the ***all-embracing and decisive factor*** in the whole process of capitalist production.[56]

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55   The reader will recall that Marx made a similar comment about the 'decisive factor' in capitalism in the *Grundrisse*, see Marx 1973, p. 762.

56   Marx MECW, v. 32, p. 318 [TSV, v. III, p. 131]. Unfortunately, the key word 'preposited' (*vorausgesetzten, -er*) in the last sentence of this passage is mistranslated in *Theories of Surplus-Value* as 'antecedent'. The word 'antecedent' suggests that original money capital *existed prior* to the value of the output, which is true and important, but it does not capture the further important connotation that this previously existing money capital is *presupposed* as a factor in the determination of the *value* of commodities resulting from

Toward the end of this section on Bailey, Marx made the important comment that 'the only new contribution' made by Bailey was his recognition that one part of the *value* of commodities – the constant capital part that is transferred from the means of production – may be due to *monopoly prices*. Marx quoted Bailey:

> 'A commodity, therefore, may owe part of its **value** to monopoly, and part to those causes which determine the value of unmonopolised products. An article, for instance, may be manufactured amidst the freest competition out of a raw material, which a complete monopoly enables it producer to sell at six times the actual cost ... In this case it is obvious, that although the value of the article might be correctly said to be determined by the quantity of capital expended upon it by the manufacturer, yet no analysis could possibly resolve the value of the capital into quantity of labour.' (pp. 223–24).[57]

Marx then commented: 'This remark is correct.' The remark that is correct is that 'a commodity ... may owe a part of its *value* to monopoly', if the means of production are purchased at monopoly prices. The presupposed actual constant capital advanced becomes a component of the *value* of commodities, even though this actual constant capital is a monopoly price and is not equal to the value of the means of production. The value that is transferred to the value of the product is the actual constant capital advanced, not a hypothetical value equal to the value of the means of production.

Marx then goes on to state that he is not concerned with monopoly, but only with the difference between the value and the price of production of the inputs to production. In this case, the magnitude of constant capital that is transferred to the *value* of commodities is equal to the *price of production* of the means of production, which in general is not equal to the *value* of the means of production. Marx's complicated comment on this crucial point is worth quoting at length:

> This remark is correct. But monopoly does not concern us here, where we are dealing with two things only, *value* and *cost price* [i.e., price of production].[58] It is clear that the **conversion of value into cost price works in**

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production. Oddly, *vorausgeseztes* is translated correctly (as presupposed) in *Theories of Surplus-Value* in the passage from the chapter on Smith quoted above in Section 2.2.

57   Marx MECW, v. 32, p. 351 [TSV, v. III, p. 166]. The numbers refer to pages in Bailey's text.

58   At this point in time, Marx was using the term 'cost price' to mean what he later called

two ways. First, the profit which is added to the capital advanced may be either above or below the *surplus value* which is contained in the commodity itself, that is, it may represent more or less *unpaid* labour that the commodity itself contains. This applies to the variable part of capital and its reproduction in the commodity. But apart from this, the cost price of **constant capital** – or of the commodities which enter the value of the newly produced commodity as raw materials, *matières instrumentales* and instruments and conditions of – may likewise be either above or below its value. Thus the commodity comprises a portion of the price which differs from value, and this portion is independent of the quantity of labour newly added, or of the labour whereby these conditions of production with *given* cost prices are transformed into a new product. It is clear that what applies to the difference between the cost price and the value of the *commodity* as such – as a result of the production process – likewise applies to the *commodity* insofar as, in the form of constant capital, it becomes an ingredient, a pre-condition, of the production process. **Variable capital**, whatever difference between the value and the cost price it may contain, is replaced by a certain quantity of labour which forms a constituent part of the value of the new commodity, ***irrespective of whether its price expresses its value correctly or stands above or below the value***. On the other hand, the difference between the cost price and value, insofar as it enters into the price of the new commodity independently of its own production process, is incorporated into the **value** of the new commodity as a **presupposed** [*vorausgesetztes*] element. ***The difference between the cost price and the value of the commodity is thus brought about in two ways***: by the difference between the cost price and the values of commodities which constitute the pre-conditions of the process of production of the new commodity; and by the difference between the surplus value which is really added to the conditions of production and the profit which is calculated.[59]

'price of production' in Volume III of *Capital*. And in Volume III, 'cost price' refers to the sum of the inputs, constant capital and variable capital (k = c + v). This change of terminology is potentially confusing, so please take note.

59   Marx MECW, v. 32, pp. 351–2 [TSV, v. III, pp. 166–7]. Unfortunately, the key word 'presupposed' (*vorausgesetztes*) in the next-to-last sentence is again mistranslated as 'antecedent' in *Theories of Surplus-Value*, as it was 36 pages earlier (see footnote 56) in which Marx stated that the 'all-embracing and decisive factor' of capitalist production is the relation between the quantity of money capital *presupposed* to production and the greater quantity of money-capital that results from production. Again the word 'antecedent' suggests

We can see that Marx states at the beginning of this paragraph that the conversion of value into price of production 'works in two ways', including a difference between the price of production and the value of the *inputs*. This statement presumes that the value transferred to the value of the product is the *value* of the means of production, which is not equal to the actual constant capital advanced, which seems to contradict his approval of Bailey two sentences earlier. Marx then continued in the rest of the paragraph with statements that are consistent with his approval of Bailey and which contradict the 'two ways' sentence. Marx states that the given constant capital may be above or below the value of the means of production, but is still a component of the *value* of commodities. The actual constant capital is 'incorporated into the *value* of new commodity as a *presupposed* element,' *whether or not* the constant capital is equal to the value of the means of production. This important point about constant capital is Bailey's 'only contribution', with which Marx agreed. Similarly, the variable capital advanced is replaced by living labour (which produces new value greater than the variable capital), *whether or not* the variable capital advanced is equal to the value of the means of subsistence ('whatever difference'). However, in the last sentence quoted above, Marx again seems to contradict himself with a repetition of the 'works in two ways' sentence at the beginning of this paragraph. How should we interpret Marx's apparent confusion or indecision on this crucial point? One possibility is that, since this was the first time that Marx had discussed this point in his manuscripts, perhaps he was still uncertain about it. But I don't think so. I think the most likely explanation is that Marx's new insight about the 'transferred value' component of the value of commodities (from Bailey) had not yet fully penetrated his thinking, and in these two contradictory sentences he slipped back into his previous simplistic thinking in which constant capital (the transferred value component of the value of the product) is assumed to be equal to the *value* of the means of production. However, once prices of production are considered, then the value transferred to the value of the product continues to be the *actual* constant capital advanced, which is now understood to be equal to the *price of production* of the means of production, not their value; in which case the difference between value and price of production of the product *works in only one way* (the differ-

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that the cost price [i.e., price of production] of the inputs *existed prior* to the value of the output, which is true and important, but it does not capture the further connotation that the previously existing cost price is *presupposed* as a factor in the determination of the *value* of commodities. Wolff, Roberts, and Callari also emphasise this passage in their interpretation that the *prices of production* of the inputs, not their values, are determinants of the value and surplus-value of commodities; see Chapter 10 below, Section 2.2.

ence between average profit and surplus-value), since constant capital is the same in both cases. We will see below that Marx is clearer about this crucial point in the *Manuscript of 1864–65* (Volume III of *Capital*).

2.5   'Costs of Production'

As discussed in Chapter 3, Marx broke off toward the end of the *Theories of Surplus-Value* to write the first draft of Parts 1 and 3 of Volume III entitled 'Capital and Profit'. As in the *Grundrisse*, profit is defined as the same quantity as surplus-value, but, understood from the point of view of capitalists, as an excess of the value of the product over the *total* capital advanced (not just the variable capital), and the total capital advanced is taken as given:

> The *surplus value* produced within a given period of circulation ... when measured against the **total capital which has been advanced**, is called – *profit*.[60]

   The section of this draft to emphasise here is the section on 'Costs of production' (pp. 78–103) (which Marx later called 'cost price' in Volume III). This section is very interesting and important and has not received the attention it deserves. Marx began this section with a clear restatement of his definition of capital in terms of money, as money 'thrown into circulation' in order to make more money:

> We have seen that the general form of capital is M–C–M′. In other words, **money**, an amount of value, is thrown into circulation in order to extract from it a larger amount.[61]

   As we have seen, according to Marx's theory of surplus-value, the initial money capital advanced (M) should be divided for explanatory purposes into two components (i.e., M = C + V): constant capital that does not produce surplus-value and variable capital that does (because it purchases labour power, which is the source of new value). However, capitalists and classical economists do not make this crucial distinction, but instead lump these two components of the capital advanced together as 'costs of production' ('everything the capitalist pays for'), as if they contributed equally to the production of surplus-value. The classical economists also often defined costs of production

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60   Marx MECW, v. 33, p. 69.
61   Marx MECW, v. 33, p. 78.

in terms of *money costs*, similar to Marx's concept of money capital advanced, but viewed from a different theoretical perspective, without distinguishing between constant capital and variable capital. And the classical economists also generally took the money costs of production as *given* in their 'costs of production' theories of value, again similar to Marx taking the initial money capital advanced as given in his theory of surplus-value and prices of production. Marx's important concept of costs of production, renamed as 'cost price' in the *Manuscript of 1864–65*, will be examined further below.

3   The 'Results'

The next manuscript that is important for the development of Marx's thinking about the determination of the magnitudes of constant capital and variable capital is the 'Results of the Immediate Process of Production', especially the first two sections.[62] The 'Results' was written in late 1863 and was intended to be a summary of Volume I of *Capital* and a transition to Volume II (and published for the first time in English in 1977 in the Penguin edition of Volume I).[63]

The first section of the 'Results' is entitled 'Commodities as Products of Capital'. In this section, Marx explains that commodities as products of *capital* are *different* from the simple commodities with which Marx's theory began in Part 1 of Volume I.[64]

> The *commodity* that emerges from capitalist production is **different** from the commodity we began with as the element, the precondition of capitalist production. We began with the individual commodity viewed as an autonomous article in which a specific amount of labour-time is objectified and which therefore has an exchange-value of a definite amount.[65]

Marx discussed three important differences between commodities as products of capital and simple commodities. The first difference is that the labour which produces capitalist commodities is divided into paid labour and unpaid labour (i.e., the value of capitalist commodities contains surplus-value). The

62   Marx 1977b.

63   See Mandel's introduction; Mandel 1977.

64   Other authors who have emphasised this distinction between simple commodities and commodities as products of capital include Wolff, Roberts, and Callari 1984 and Kliman and McClone 1988.

65   Marx 1977b, p. 953.

second difference is that the individual commodity is treated as an 'aliquot part' of the total commodity produced by a given capital, rather than an 'autonomous article', which means that the price of an individual commodity is not determined by the labour time required to produce this commodity (as with simple commodities), but is instead determined as a fractional part of the total price of all the commodities produced by a given capital, i.e., by dividing this total prices by the quantity of commodities produced.[66]

The most important difference for our purpose is the third difference, which has to do with the *transferred value* component of the value of commodities, and is similar to the passage on this point in the *Manuscript of 1861–63* discussed above – that the means of production in capitalist production are *commodities*, which have been purchased at the beginning of the circuit of money capital, and which therefore enter the valorisation process with *already existing specific prices*. As discussed in Chapter 2, the transferred value component of *simple commodities* is determined solely by the labour time required to produce the means of production. On the other hand, the transferred value component of commodities *produced by capital* is the already existing actual price of the means of production, or the actual constant capital that has already been advanced to purchase the means of production, which is taken as given and is 'already included in the calculations [of the value of the output] as sums of money':

> In other words, then, inasmuch as the commodity is treated as an ***autonomous exchange value***, it acts as *money*. Thus since wheat, hay, cattle, seed of all kinds, etc. are *sold* as ***commodities*** – and since without the sale they cannot be regarded as products – it follows that they ***enter production as commodities***, i.e. as ***money*** ... And as a consequence of the valorisation process ***they are included in the calculations as*** *sums of money*, i.e. in the ***autonomous form of exchange-value***.[67]

> Since ... the elements of capitalist production already ***enter the process of production as commodities***, i.e. ***with specific prices***, it follows that ***the value added by the constant capital is already given in terms of a*** *price*. For example, in the present case it is ***£80*** for flax, machinery, etc.[68]

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66   Note that this determination of unit prices is very different from Sraffian theory, in which unit prices are determined directly from given physical quantities and are not derived from total prices.

67   Marx 1977b, p. 952.

68   Marx 1977b, p. 957.

The 'Results' manuscript is still at the level of abstraction of capital in general (Volumes I and II), under the general provisional assumption that the prices of individual commodities are equal to their values:

> (When we speak of the price of commodities, it is always implicitly assumed that the *total price* of the quantity of goods produced by capital = its *total value*, and hence the *price* of the aliquot part of the individual = the aliquot part of that total value. *Price* in this context is in general just the money-expression of *value*. **Prices differing from underlying values have not yet entered our discussion**.)[69]

Under this general assumption, the actual constant capital advanced and the actual price of the means of production are provisionally assumed to be equal to the value of the means of production, i.e., to be determined solely by the labour time required to produce the means of production. Thus, at the level of abstraction of capital in general, the difference between the transferred value component of simple commodities and the transferred value component of commodities as products of capital is not yet apparent, and Marx treats the two magnitudes interchangeably. Marx does not mention in the 'Results' the complication that in reality the actual constant capital advanced and the actual price at which the means of production are purchased are equal to *price of production* of the means of production, not their value, and what effect that difference might have (if any) on the transferred value component of the value of commodities as products of capital. Nor does he mention Bailey's 'contribution' on this issue. However, Marx must have remembered what he had written about the transferred value component in his discussion of Bailey just a few months before. And the logic of Marx's theory implies that the transferred value component of the value of *commodities as products of capital* is equal to the actual constant capital advanced in the sphere of circulation and consumed in production ('the value added by the constant capital is already *given* in terms of a price'), which is equal to the price of production of the means of production, not their values, as Marx stated in his discussion of Bailey. The main point to note here is that the constant capital advanced to purchase means of production is *taken as given* and 'enters the process of production as commodities, i.e. with specific prices'. We will see in the next section that Marx developed this point further in his next draft of *Capital* in the *Manuscript of 1864–65*.

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69   Marx 1977b, p. 966.

The second section of the 'Results' is entitled 'Capitalist Production as the Production of Surplus-Value', thus emphasising once again that the most important aspect of capitalism is the production of surplus-value, i.e., the transformation of the initial capital advanced M into M + ΔM. Therefore, Marx's theory of capitalism focuses above all else on this specific question. This focus of Marx's theory is clearly expressed in the following important passage:

> In what we may call its first, provisional form of *money* (the **point of departure** for the formation of capital), capital exists as yet only as money, i.e. as a *sum of exchange-values* embodied in the *self-subsistent form of exchange-value*, in its *expression as money*. But the task of this money is to generate value. The exchange-value must serve to create still more exchange-value. The *quantity of value* must be increased, i.e. the available value must not only be maintained; it must yield an increment, Δ value, a surplus-value, so that the **value given**, the **particular sum of money**, can be viewed as a *fluens* and the increment as fluxion ...
>
> Here, where we are concerned with money only as the *point of departure* for the *immediate process of production*, we can confine ourselves to the observation: capital exists here as yet only as a *given quantum of value =* **M (*money*)**, in which all use-value is extinguished, so that **nothing but the monetary form remains** ...
>
> If the original capital is a quantum of value = x, it becomes capital and fulfills its purpose by changing into x + Δx, into a quantum of money or value = the original sum + a balance over the original sum. In other words, it is transformed into the **given amount of money** + **additional money**, into the *given value + surplus-value* ...
>
> As a *given sum of money*, x is a constant from the outset and hence its increment = 0. In the course of the process, therefore, it must be changed into another amount which contains a variable element. **Our task** is to discover this component and at the same time to identify the mediations by means of which a constant magnitude becomes a variable one.[70]

We can see that the *'point of departure'* for the circulation of capital, and therefore of Marx's theory of the circulation of capital, is a *'given sum of money'*

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70   Marx 1977b, pp. 975–7.

(x). Marx's theory is primarily about the 'transformation of money into capital', i.e., the transformation of the given initial sum of money capital advanced into the 'given amount of money + additional money' $(x + \Delta x)$. The main task of Marx's theory is 'to identify the mediations by means of which a constant [given] magnitude becomes a variable [larger] one.'

It should be remembered Marx had a Ph.D in Philosophy, with a specialty in logic, and he paid a great deal of attention throughout the various drafts of *Capital* to questions of logical method. Therefore, it seems reasonable to conclude that in this passage (and in many similar passages, as we have seen) Marx intended the usual methodological meanings to the terms 'given,' 'postulated,' 'presupposed,' etc., i.e., that they are the initial data (x) with which his theory of surplus-value (Δx) begins.

4   Volume III of *Capital* (*Manuscript of 1864–65*)

We discussed in Chapter 3 that Marx's original *Manuscript of 1864–65* was published in German for the first time in 1993 and has not yet been translated into English (an English translation is in the works). We also discussed the relation between Marx's manuscript and Engels's edited Volume III. As in Chapter 3, I consider Engels's Volume III to be a reliable substitute for Marx's manuscript with respect to the issue of this chapter – the determination of the magnitudes of constant capital and variable capital in Marx's theory of value and prices of production. There is one important exception to this general conclusion, which is discussed in Section 4.3. The immanent publication of Marx's manuscript in English will enable us to investigate this comparison more closely.

4.1   *Cost Price*
Chapter 1 of Volume III introduces Marx's concepts of cost price and profit. We have already discussed Marx's concept of profit in our Chapter 3 above. The main point to emphasise here is the concept of *cost price*, which plays a key role in Marx's theory of prices of production and has not received the attention it deserves (as we saw above, cost price was discussed in the first draft of this chapter in the *Manuscript of 1861–63* as 'costs of production'). Cost price is defined as the sum of constant capital and variable capital, i.e., the two components of the initial money capital advanced in the first phase of the circulation of money capital and consumed in production.[71] Thus the question

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71   The constant capital component of cost price refers only to the constant capital *consumed*

of how constant capital and variable capital are determined in Marx's theory is at the same time the question of how the cost price is determined.

Early in Chapter 1, Marx briefly reviewed his theory of value presented in Volume I, as the sum of these two components (constant capital + new value), referring back to an earlier summary of his theory in Chapter 9 of Volume I:

> We know from Volume I (Chapter 9, p. 320) that the value of the product newly formed, in this case £600, is composed of (1) the ***reappearing value of the constant capital*** of £400 spent on the means of production, and (2) a *newly produced value* of £200. The cost price of the commodity, £500, comprises the reappearing 400c plus a half of the newly produced value of £200, two elements of commodity value that are completely different as far as their origins are concerned.[72]

The 'reappearing value of the constant capital' existed prior to the current period, and is taken as given in the determination of the value of the commodities produced in the current period (i.e., it 'reappears' as one component of this value), and the 'newly produced value' is determined by the labour of the current period. (We will discuss below the passage in Chapter 9 referred to by Marx). Algebraically, the value of commodities as the sum of these two components can be expressed as follows (as we saw in Chapter 2):

(1)   P = C + N

Marx goes on in the following paragraphs to explain the different roles played by the constant capital and the variable capital in the determination of the commodity's value. The constant capital is transferred directly to the value of the product and thus becomes one component of this value. Hence, constant capital has a '*dual significance*' (C.III. 119) – it is both a component of the cost price and it is also a component of the value of commodities. Indeed, it is a component of the value of commodities precisely *because* it existed previously as a component of the cost price, i.e., of the capital advanced to purchase the means of production that are consumed in production.

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in one period, i.e., to one period's depreciation of the fixed capital, not to the total fixed constant capital advanced.

72   Marx 1981, p. 119.

> [T]he value of the means of production consumed, a total of £400, is *transferred* from the means of production to the product. This *old value reappears* therefore as a *component of the product's value*, though it does not originate in the production process of *this* commodity. It exists only as a component of the commodity's value *because it existed previously as a component of the capital advanced. The constant capital that was spent is thus replaced by the portion of commodity value that it itself added to this commodity value*. This element of the cost price has therefore a *dual significance*.[73]

The previously existing constant capital advanced and consumed is taken as given in both aspects of its 'dual significance' – both as a component of cost price and as a component of value. This is why constant capital cancels out in the determination of surplus-value (see equations (6) and (7) in Chapter 2) and the quantity of surplus-value is independent of the quantity of constant capital.

On the other hand, variable capital plays an entirely different role in the determination of the value of commodities. Variable capital is *not* transferred to the value of the product and thus does not become one component of this value. Instead, the variable capital is replaced by living labour in production, and this living labour produces new value, value which did not previously exist, and which becomes the second component of the value of commodities. Thus, variable capital does *not* have the 'dual significance' of constant capital; it is a component of the cost price, but it is not a component of the value of commodities.

> It is quite the reverse with the other component of cost price [variable capital] ... This advance of [variable] capital value does not in any way go into the formation of the new value.[74]

Instead, the variable capital is replaced by living labour in the production process which produces new value, and the surplus-value produced is equal to the difference between the new value produced by current labour and the given variable capital (as we saw in Chapter 2):

(2) $S = N - V$

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73   Marx 1981, pp. 119–20.

74   Marx 1981, p. 120.

In other words, the new value component of the value of commodities is divided into two parts: the given variable capital plus the surplus-value produced:

(3) $N = V + S$

Substituting equation (3) into equation (1), we obtain the familiar equation for the value of individual commodities:[75]

(4) $P = C + V + S$

However, this is not the way things appear to capitalists and to bourgeois economists. These latter make no distinction between constant capital and variable capital, and instead see surplus-value as somehow arising from both constant capital and variable together and equally. To express this point of view (the capitalist's point of view), Marx defined in this chapter the important new concept of the *cost price* of commodities – the sum of constant capital and variable capital, with no distinction between them.

> After deducting the surplus-value of £100, there remains a commodity value of £500, and this simply replaces the capital expenditure of £500. This part of the value of the commodity, which replaces the price of the means of production consumed and the labour-power employed, *simply replaces what the commodity cost the capitalist* himself and is therefore the *cost price* of the commodity, as far as he is concerned.[76]

From this point of view, the value of commodities now *appears* to be determined by the sum of the cost price and the surplus-value, and surplus-value appears to arise equally from both components of the cost price.[77] Algebraically, this appearance can be written as:

(5) $P = K + S$

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75 This familiar equation is somewhat misleading because it makes it appear as if there are three fundamental components of value, rather than two fundamental components, one of which is subdivided.

76 Marx 1981, p. 118.

77 Sraffian theory also makes it look like profit arises equally from wages and material costs. Labour in Sraffian theory is considered only as a *cost*, not as a producer of value. And in this respect (cost), labour is no different from materials.

Marx expressed the transformation of equation (4) into equation (5) as follows:

> If we call the cost price *k*, the formula $C = c + v + s$ is transformed into the formula $C = k + s$, or commodity ***value = cost price + surplus-value***.[78]

Equation (5) does not express the actual determination of the value of commodities, according to Marx's theory. Rather it expresses the capitalist's view of the determination of the value. However, the *magnitudes* in equation (5) are *the same* as the magnitudes in equation (4), which does express the determination of the value of commodities, according to Marx's theory. K in equation (5) is the sum of **(C + V)** in equation (4), **S** is the same in both equations as already determined in Volume I, and therefore **P** is the same in both equations:

$$P = C + V + S = K + S$$

Equation (5) is a 'mystified form' of the magnitudes in equation (4), but the magnitudes in the two equations are the same.

Marx then defined the related concept of *profit*, as the *same magnitude* as the surplus-value in equations (4) and (5), but now seen from the point of view of capitalists, i.e., in relation to the total capital advanced or the total cost price, rather than just in relation to the variable capital alone, as in Marx's theory of surplus-value.

> ***Profit***, as we are originally faced with it, ***is thus the same thing as surplus-value***, save in a mystified form, though one that necessarily arises from the capitalist mode of production. Because no distinction between constant and variable capital can be recognised in the apparent formation of the cost price, the origin of the change in value that occurs in the course of the production process is shifted from the variable capital to the capital as a whole.[79]

From this point of view, equation (5) for the value of commodities can be converted into:

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78   Marx 1981, p. 118.
79   Marx 1981, p. 127.

(6) $P = K + \pi$

where **p** stands for profit, as just defined. Marx expressed this conversion of (5) into (6) as follows:

> If we call profit p, the formula $C = c + v + s = k + s$ is converted into the formula $C = k + p$, or *commodity value = cost price + profit*.[80]

Again, the magnitudes in equation (6) are the same as the magnitudes in equation (5). The only difference between the two equations is that the given, predetermined magnitude of surplus-value is *given another name* – profit – as the surplus-value seen in relation to the total capital, rather than just to the variable capital alone. The profit (π) in equation (6) is the same magnitude as the (S) in equation (5), the cost price (K) is obviously the same in both equations, and therefore so is the value (P).

Two pages later, Marx criticised the idea of some classical economists who, from the point of view of capitalists, consider profit as a cost (similar to modern neoclassical economics):

> In actual fact, the excess over a ***given magnitude*** [cost price] can in no way form a part of that [given] magnitude; and so profit, the excess of a commodity's value over the capitalist's outlays, cannot form a part of these outlays.[81]

The main point for our purposes is that the cost price is the initial 'capitalist's outlays' and these initial outlays are *given magnitudes*, and profit is an excess over these given magnitudes.

4.2   Prices of Production

In Part 2 of Volume III, the level of abstraction shifts from capital in general (the total economy) to competition (individual industries), and Marx presents his theory of the determination of the *prices of production* of individual industries, on the basis of the theory and key concepts presented in Part 1. The price of production of individual industries (PP_i) is determined by the sum of two components – the *cost price* (K_i), as defined in Part 1, and the *average profit*

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80   Marx 1981, p. 127.

81   Marx 1981, p. 129. Expressed differently, ΔM cannot form a part of the initial given M.

(π_i). Therefore, the equation for the determination of the price of production of individual industries is:

(7) $PP_i = K_i + \pi_i$

We can see again that Marx's prices of production are *not unit prices*; a better name would be 'gross annual industry revenue'.

The average profit component of the price of production for each industry in turn is determined by the product of the general rate of profit (**R**) (determined below in equation (9)) and the total stock of capital invested in that industry (**M$_i$**) (taken as given):

(8) $\pi_i = R M_i$

As we saw in Chapter 3, the general rate of profit is itself determined by dividing the actual total surplus-value that is determined in Volumes I and II by the actual total capital invested, which is taken as given along with the individual amounts of total capital invested in each industry:

(9) $r = S / M$

In this way, the capital advanced in each industry is recovered and the total surplus-value that is produced in the economy as a whole is distributed across individual industries according to the general rate of profit and the share of capital invested in each industry.

The cost price component of price of production is *taken as given*, as the actual money capital advanced and consumed in production. Marx stated this key assumption in the following passages from Chapter 9:

> [T]he ***cost price is completely governed by the outlay*** within each respective sphere of production ...[82]

> The cost price of a commodity is a ***given precondition*** independent of the capitalist's production.[83]

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82   Marx 1981, p. 258.
83   Marx 1981, p. 265.

Furthermore, the crucial point with respect to the 'transformation problem' is that the cost prices that are taken as given in Marx's theory of prices of production in Volume III at the level of abstraction of competition are the *same quantities* of constant capital and variable capital that are taken as given in Marx's theory of value and surplus-value in Volume I at the level of abstraction of capital in general. At both levels of abstraction, the given constant capital and variable capital are the *actual* (long-run equilibrium) quantities of money capital advanced to purchase means of production and labour power in the first phase of the circuit of capital and consumed in the second phase of production. In a given period of time, there is only one set of actual quantities of money capital advanced and consumed. Therefore, the quantity of money capital taken as given in Volume I must be the same in Volume I and Volume III. The only difference is that, in Volume III, not only are the *total* quantities of constant capital and variable capital taken as given, but also the *individual* quantities of these two components of money capital for each industry. The sums of the industry quantities of constant capital and variable capital are of course by definition equal to the actual total quantities of these two components of capital.

This is the reason why the quantities of constant capital and variable capital *do not change*, or *do not have to be transformed*, in the transition from the macroeconomic theory of the total surplus-value in Volume I to the microeconomic theory of individual prices of production in Volume III – because *the same quantities* of constant capital and variable capital *are taken as given* in both stages of the theory: actual aggregate quantities and actual disaggregated quantities. In other words, these given quantities of money constant capital and variable capital advanced in the first phase of the circuit of capital 'remain invariant' in the transition from the macro theory in Volume I to the micro theory in Volume III. It is for this reason that Marx did *not* 'fail to transform these inputs' – because the inputs do not have to be transformed, but instead remain invariant, as the actual given quantities of money capital advanced and consumed. The quantities of constant capital and variable capital are not first determined as hypothetical quantities equal to the values of the means of production and means of subsistence in Volume I, which then have to be transformed into the actual prices of production in Volume III, as in the standard interpretation. Instead, the *same quantities* of constant capital and variable capital are taken as given in both the theory of surplus-value in Volume I and the theory of prices of production in Volume III – the actual (long-run equilibrium) quantities of money capital advanced and consumed in the actual capitalist economy.

Since the cost price is the same in equations (5) and (7), the *only possible difference* between the value and the price of production of individual com-

modities is the difference between the surplus-value (S_i) produced in a given industry and the average profit (π_i) received in that industry.[84] If equation (5) is interpreted in terms of individual commodities, then:

$$
\begin{aligned}
(10) \quad P_i &= K_i + S_i \\
PP_i &= K_i + \pi_i \\
P_i - PP_i &= (K_i + S_i) - (K_i + \pi_i) \\
&= \mathbf{(S_i - \pi_i)}
\end{aligned}
$$

The standard interpretation of Marx's theory is that the cost price in the determination of the price of production of commodities is *different* from the cost price in the determination of the value of commodities. In other words, *there are two sets of cost prices* – one for the determination of the value of commodities, equal to the values of the means of production and means of subsistence ($\mathbf{VK_i}$), and the other for the determination of the price of production of commodities, equal to the prices of production of the means of production and means of subsistence ($\mathbf{PK_i}$). The standard critique of Marx's theory is that he *failed to transform* $\mathbf{VK_i}$ into $\mathbf{PK_i}$. I will demonstrate in the next subsection that Marx repeatedly assumed and stated that *the cost price is the same* in the determination of both the value and the price of production of commodities; i.e., that there is *only one set of cost prices*, not two, and thus there is *no transformation* of the cost price that has to be accomplished.

4.3   *The Cost Price is the Same*

As is well known, in the opening pages of Chapter 9 Marx explained the determination of prices of production and illustrated this theory with three tables.[85] The first table makes no distinction between fixed and circulating capital, but the second and third tables do make this distinction. The second and third tables determine the *value* of each of the five commodities as the sum of the *cost price* (constant capital and variable capital) and the surplus-value produced in each industry, as in equation (5) above. The third table also determines the *prices of production* of the five commodities as the sum of the *same cost prices* and the average profit appropriated in each industry, as in equations (7)–(9) above. The point I wish to emphasise is that in all these tables the *cost price*

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84   Ramos 1996, pp. 66–7, also emphasises that the cost price is the same in the determination of both values and prices of production, and thus the only possible difference between the value and the price of production of a commodity is the difference between average profit and surplus-value.

85   Marx 1981, pp. 254–8.

is the same for the determination of both values and prices of production. The only difference between the values and the prices of production presented in these tables is the difference between the surplus-value produced and the average profit appropriated in each industry. And this identity of the cost price in the determination of values and prices of production is repeated many times in the surrounding text, as we shall see.

It is of course widely argued that this unchanging cost price in Marx's tables is a *mistake*; i.e., that Marx *should have changed* the magnitudes of cost price in his tables, and that he failed to do so. I argue that this long-standing criticism of Marx's tables overlooks the fact that Marx emphasised repeatedly in the surrounding text that the *cost price is supposed to be the same* in the determination of both values and prices of production, and thus that his tables are consistent with the surrounding text, and are also consistent with all the other textual evidence discussed in this chapter. The 'mistake' interpretation of Marx's tables is contradicted by the surrounding text and the other evidence.

A few pages after the tables, Marx states that 'the cost price is *completely governed by the outlay* within each respective sphere of production' (as we have seen above). I interpret 'completely governed by' to mean 'determined by'. As I understand it, Marx is saying here that *the* (one and only) cost price is determined by the capital outlay, the actual quantity of money capital advanced to purchase means of production and labour power, which is taken as given. There is no mention here of *two* cost prices, one determined by the values of the means of production and the means of subsistence and the other determined by the prices of production of these bundles of goods. There is only one cost price mentioned ('the' cost price) and this one cost price is determined by the capital outlay, which is taken as given. If the cost price is determined by the capital outlay, then there cannot be two cost prices, because *there is only one capital outlay*.

On the next page, Marx states the important aggregate equality between the sum of prices of production and the sum of values:

> And in the same manner, the sum of prices of production for the commodities produced in society as a whole – taking the totality of all branches of production – is equal to the sum of their values.[86]

As we saw in Chapter 2, this aggregate equality follows from the assumptions in Marx's theory of prices of production: (1) *the cost prices are the same* in

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86   Marx 1981, p. 259.

the determination of both values and prices of production, and (2) the total surplus-value is taken as given (predetermined) in the determination of the general rate of profit, the average profit, and prices of production.

Two pages later, Marx noted that, after the determination of prices of production, the quantities of constant capital and variable capital that are taken as given ('governed by the outlays'), can now be explained more fully than before. In Volume I, it was assumed that the given outlays of constant capital and variable capital are equal to the *values* of the means of production and means of subsistence, but now we can understand that these given outlays are really equal to the *prices of production* of these inputs. This important passage is as follows:

> Apart from the fact that the price of the product of capital B, for example, diverges from its value, because the surplus-value realised in B is greater or less than the profit added in the price of the products of B, ***the same situation also holds for the commodities that form the constant part of capital B, and indirectly, also, its variable capital, as means of subsistence for the workers***. As far as the constant portion of capital is concerned, it is itself equal to cost price plus surplus-value, i.e. now equal to cost price plus profit, and this profit can again be greater or less than the surplus-value whose place it has taken. As for the variable capital, the average daily wage is certainly always equal to the value product of the number of hours that the worker must work in order to produce his necessary means of subsistence; but this number of hours is itself distorted by the fact that the production prices of the necessary means of subsistence diverge from their values. However, this is always reducible to the situation that whenever too much surplus-value goes into one commodity, too little goes into another, and that the divergences from value that obtain in the production prices of commodities therefore cancel each other out.[87]

This passage is sometimes cited by critics of Marx to support their interpretation that the quantities of constant capital and variable capital *should change* from Volume I to Volume III. However, Marx does not state in this passage that the quantities of constant capital and variable capital change or should change in Volume III. Rather, Marx states that the quantities of constant capital and variable capital (which are taken as given and do not change) can now

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87   Marx 1981, p. 261.

be explained more fully, to be equal to the *prices of production* of the means of production and means of subsistence, rather than equal to their values. Marx does not say anything in this passage about the need to change the quantities of constant capital and variable capital in his earlier tables. He just says that the explanation of these given quantities is different and more complete than before.

The standard interpretation jumps to the conclusion that, because the quantities of constant capital and variable are now explained to be equal to prices of production, this means that the quantities of constant capital and variable capital *must change*, and must be different in the determination of prices of production than in the determination of values. But Marx does not say this. Marx discusses only one set of quantities for constant capital and variable capital throughout this passage, which is now understood to be equal to prices of production, rather than to values. This more complete understanding of constant capital and variable capital does not mean that there are two sets of quantities of constant capital and variable capital. There is only one set of constant capital and variable capital, which is now understood to be equal to prices of production. Furthermore, at the end of this same paragraph, Marx states again the conclusion that the divergences between profits and surplus-values for individual commodities cancel each other out, so that the aggregate equality between the sum of prices of production and the sum of values continues to be true. We have seen in Chapter 2 that this conclusion requires as a logical precondition that the quantities of constant capital and variable capital be the same for the determination of both values and prices of production.

Therefore, I conclude that this passage does not support the standard critique of Marx's theory of prices of production. It is certainly not a clear statement that Marx made a mistake in his earlier presentation and that his tables need to be corrected. Nor is it a clear statement that there are two sets of the inputs of constant capital and variable capital, and that these inputs need to be transformed from values to prices of production. Furthermore, the standard interpretation contradicts the aggregate equality between total value and total price of production that Marx emphasises in this paragraph and the surrounding paragraphs.

Five Key Paragraphs

Beginning four pages after the passage just discussed, there are five key consecutive paragraphs in the middle of Chapter 9 of Volume III, including an important 'missing paragraph' to be discussed below, which clearly assume that *the cost price is the same* in the determination of both values and prices of

production. These key paragraphs will be examined in detail because of their significance and prominence in the debate over the 'transformation problem', especially the fifth paragraph.

The first of these five paragraphs introduces the subject:

> In Volumes I and II we were only concerned with the *value* of commodities. Now a part of this value has split away as the *cost price*, on the one hand, while on the other, the *production price* of the commodity has also developed, as a transformed form of value.[88]

Notice that in this introductory passage, there is no mention of *two* cost prices. Rather, there is only *one* cost price mentioned – '*the* cost price', which is described as having 'split away' from the *value* of commodities. In other words, as we have seen above, the single cost price is a component of the *value* of commodities ($P_i = K_i + S_i$, as in equation (5) above, expressed in terms of a single commodity). The price of production, on the other hand, is a developed form of value (i.e., of the price of the output). We have also seen above that the single cost price is also a component of the price of production of commodities ($PP_i = K_i + a\pi_i$, as in equation (7) above). Therefore, in these sentences the same single cost price is a component of both the value and the price of production of commodities.

The next paragraph is something of a mystery. In Marx's *Manuscript of 1864–65*, from which Engels edited what we know as Volume III, this paragraph is an important one, in which Marx defined again the value of commodities and stated again the relation between the value, the cost price, and the price of production of commodities (the subject of these paragraphs), this time in clear unambiguous algebraic terms. However, Engels for some reason *left out this important paragraph* in his edition of Volume III.[89] This 'missing paragraph' was discovered by Alejandro Ramos (1998), and is translated from the German below by Ben Fowkes (Ramos also emphasises the importance of this passage, and our interpretations are similar – that *k is the same* in the determination of both values and prices of production).

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88   Marx 1981, p. 265.

89   This is the one important exception to the general conclusion stated at the beginning of this section that Engels's Volume lII is a reliable substitute for Marx's original *Manuscript of 1864–65*, with respect to the issue of the determination of constant capital and variable capital, i.e., the determination of the cost price, in Marx's theory of value and prices of production. Engels must not have understood the significance of this clear paragraph.

As we have seen, ***the*** *cost price* is always lower than the *value* of the commodity. The *production price* can be lower than, *higher than, or equal to the value* of the commodity. **The value of the commodity is equal to the value of the capital consumed to produce it plus the surplus-value.** If we take **the** cost price as equal to the **value of the capital advanced** in the production of the commodity, as we did in our original analysis of cost price (*in chapter one*), we arrive at following **equivalences**:

Value = Cost Price + surplus-value	$V = K + s$
or profit as identical with surplus-value	or $= K + p$
cost price = value – surplus-value	or $K = V - s$
price of production = cost price + profit	$P = K + p'$
calculated according to the general rate of profit = p'.	

Because $K = V - s$ and $V = K + s$, the value of the commodity is always > than the cost price. Depending on whether s or p′ of each special production sphere is bigger or smaller or equal, > < or = to the average profit determined by the general rate of profit, then P > < or = V. Because $V = K + s$ or p, and $P = K + p'$, $V = P$ when $s = p'$, > P when $p' < s$, and < P when $p' > s$.[90]

Notice that in this very interesting 'missing' paragraph, there is *only one cost price* mentioned throughout – the value of the capital advanced and consumed – represented algebraically by K. There are not two cost prices, one a component of value (VK?) and the other a component of price of production (PK?). The paragraph begins with '*The* cost price …' The *same* cost price is presented as a component of both the value and the price of production of the commodity. The value of the commodity is defined as equal to the cost price plus surplus-value ($V = K + s$), and the price of production is equal to the *same cost price* plus the average profit ($P = K + p'$). The K is the same quantity in all these equations. Since K is the same, whether the price of production is equal to, greater than, or less than, the value depends solely on whether the average profit is equal to, greater than, or less than the surplus-value (as we have seen above in equation (10)). All this is clearly and unambiguously stated, including in algebraic terms, and all this assumes that *there is only one cost price* in the determination of both values and prices of production.

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90   Marx 2016, pp. 275–6.

Marx continued in the next paragraph to repeat and elaborate these same points, again with algebraic formulations and numerical examples.

> If we take it that the composition of the average social capital is 80c + 20v, and the annual rate of surplus-value s′ = 100 per cent, the average annual profit for a capital of 100 is 20 and the average annual rate of profit is 20 per cent. For any cost price k of the commodities annually produced by a capital of 100, their price of production will be k + 20. In those spheres of production where the composition of capital is (80–x)c + (20+x)v, the surplus-value actually created within this sphere, or the annual profit produced, is 20+x, i.e. more than 20, and the commodity value produced is k + 20 + x, more than k + 20, or more than the price of production. In those spheres of production where the composition of capital is (80+x)c + (20–x)v, the surplus-value actually created within this sphere, or the annual profit produced, is 20–x, i.e. less than 20, and the commodity value produced is k + 20 – x, i.e. less than the price of production, which is k + 20. Leaving aside any variation in turnover times, *the production prices of commodities would be equal to their values only in cases where the composition of capital was by chance precisely 80c + 20v.*[91]

It is clear again from this paragraph that the *cost price is the same* in the determination of both the value and the price of production of commodities. In these examples, the cost price **k** is always equal to 100, both in the determination of value and in the determination of price of production of the different commodities. The value of commodities is equal to the given cost price plus surplus-value (k + 20 +/– x), and the price of production of commodities is equal to the cost price plus the average profit (k + 20). The cost price k *does not change* from one magnitude in the determination of value to another magnitude in the determination of price of production. The only difference between values and prices of production is whether surplus-value or average profit is added to the same identical cost price.

Especially interesting is the case of *commodities produced with capital of average composition*, in which case the prices of production of these commodities are equal to their values. Since the cost price k is the same for both value and price of production, and since for these average commodities average profit = surplus-value ($a\pi_i = S_i$), it follows that the prices of production of these average commodities are equal to their values (see equation (10) above). This conclu-

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91   Marx 1981, p. 263.

sion of the equality between the price of production and the value of average commodities, which is emphasised by Marx, is valid *if and only if the cost price is the same* in the determination of both the price of production and the value of these commodities. If the cost prices were different (i.e., if the cost price changed from values to prices of production, as in the standard interpretation), then the prices of production of average commodities would *not* be equal to the values of average commodities, even though the average profit is equal to the surplus-value produced in these industries. Therefore, Marx's argument in these pages (and in later chapters, to be discussed below) that the prices of production of average commodities is equal to their values is further evidence that he assumed that the cost price is the same for the determination of both values and prices of production.

It should also be noted that the very concept of *the* average composition of capital makes sense *only if the cost price is the same* for the determination of both values and prices of production; i.e., only if the constant capital and variable capital are the same. If the cost prices were different for values and prices of production, then constant capital and variable capital would be different, in which case the composition of all (or most) capitals would change, and thus the average composition of capital would also in general change. Thus, according to this interpretation, there would be no such thing as *the* average composition of capital, as Marx repeatedly discussed it. Instead, there would be *two* average compositions of capital, one for the values of commodities and the other for prices of production. But Marx never said or hinted that there might be *two* average compositions of capital. Either Marx is talking complete nonsense in all his discussions of *the* average composition of capital, or the cost price is the same in the determination of both value and price of production. In light of Marx's repeated, explicit statements that the cost price is the same for the determination of both values and prices of production, it would seem that the only fair interpretation (to Marx), and the most reasonable one, is that Marx intended for the cost price to be the same in his theory.

In the next paragraph, Marx again divides the total social capital into three groups of average, higher than average, and lower than average composition of capital. In Marx's original manuscript, this paragraph does not include any further calculation of values and prices of production. According to Ramos, the last half of this paragraph in the Engels edition of Volume III was added by Engels.[92] The part of this paragraph added by Engels is as follows:

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92   Ramos 1998, pp. 63–4.

How these capitals function after the average rate of profit is established, on the assumption of one turnover in the year, is shown by the following table, in which capital I represents the average composition, with an average rate of profit of 20 per cent.

I.   80c + 20v + 20s. Rate of profit = 20 per cent.
        Price of the product = 120. Value = 120.
II.   90c + 10v + 10s. Rate of profit = 20 per cent.
        Price of the product = 120. Value = 110.
III.   70c + 30v + 30s. Rate of profit = 20 per cent.
        Price of the product = 120. Value = 130.

Commodities produced by capital II thus have a value less than their price of production, and those produced by capital III have a price of production that is less than their value. *Only for capitals such as I, in branches of production whose composition chanced to coincide with the social average, would the value and the price of production be the same.*[93]

Engels's addition seems to be an accurate interpretation of Marx's paragraph immediately preceding. The cost price is the same for both values and prices of production for all three types of commodities. As a result, the price of production of the commodity produced with capital of average composition (and only this average commodity) is equal to its value.

We come now to the *fifth and final paragraph* of Marx's discussion of the relation between value, cost price, and price of production. In this key paragraph, Marx discusses 'an **important modification in the determination of a commodity's cost price.**' We saw above that it was originally assumed that the cost price (the given actual money constant capital and variable capital advanced and consumed) is equal to the *value* of the inputs. After having explained the determination of prices of production, Marx notes in this paragraph that this given actual cost price is instead equal to the *price of production* of the inputs, not their value. However, Marx goes on to say in this paragraph that *the* cost price is still a *'given precondition'*, and that the *value* of commodities is still equal to the sum of this *given cost price* plus surplus-value (i.e., $P_i = K_i + S_i$, as in equation (5) above), just as before this more complete explanation of the given cost price (e.g., in Part 1 of Volume III).

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93   Marx 1981, p. 264.

The first five sentences of this long and important paragraph are often cited by critics of Marx, who argue that this 'modification in the determination of a commodity's cost price' means that the *magnitudes of the cost price are different and must change* in the determination of values and prices of production, and thus that his theory of prices of production presented earlier in Chapter 9 – including the tables illustrating the theory – is *incomplete* and a *mistake*, because it assumes that the cost price in the determination of prices of production is equal to the *values* of the means of production and means of subsistence, but it really should be the prices of production of these inputs. In other words, these key sentences are interpreted to mean that Marx is acknowledging that he 'failed to transform the inputs' and that this mistake needs to be corrected. These first five sentences of this paragraph are the following:

> The development given above also involves a ***modification in the determination of a commodity's cost price***. It was originally assumed that ***the*** cost price of a commodity equalled the value of the commodities consumed in production. But for the buyer of a commodity, it is the price of production that constitutes ***its*** cost price and can thus enter into forming the price of another commodity. As the price of production of a commodity can diverge from its value, so ***the*** cost price of a commodity, in which the price of production of other commodities is involved, can also stand above or below the portion of its total value that is formed by the value of the means of production going into it. It is necessary to bear in mind this ***modified significance of the cost price***, and therefore to bear in mind too that if ***the*** cost price of a commodity is equated with the value of the means of production used up in producing it, it is always ***possible to go wrong***.[94]

The standard interpretation of these sentences is that the 'modification in the determination of the cost price' means that there is a change in the magnitude of the cost price, so that there are *two different cost prices*, one equal to the value of the inputs, which is a determinant of the value of the output, and the other equal to the price of production of the inputs, which is a determinant of the price of production of the output. In other words, the *magnitude of the cost price changes* from the determination of value in Volume I to the determination of prices of production in Volume III. However, this interpretation is not supported by a close examination of these sentences

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94   Marx 1981, pp. 264–5.

and certainly not by the surrounding paragraphs. Marx never states in these sentences that there are two different cost prices, one for the determination of values and the other for the determination of prices of production. To the contrary, Marx refers repeatedly to 'the' cost price, suggesting again that there is only one cost price. Marx's point in these sentences is *not* that there are two magnitudes of cost prices, but rather that 'the' given cost price is now more completely understood to be equal to the price of production of the inputs, rather than equal to the value of the inputs. Furthermore, the standard interpretation of these sentences is contradicted by the previous four paragraphs, which we have just reviewed, and in which Marx clearly and consistently assumed that the *cost price is the same* in the determination of both the value and the price of production of commodities. These earlier paragraphs are generally ignored by the proponents of the standard interpretation. If the five sentences just quoted are to be consistent with these earlier paragraphs, then the standard interpretation of these sentences must be wrong.

Finally, the standard interpretation of these sentences is also contradicted by the rest of the *very same paragraph*, which is also generally ignored by Marx's critics. The rest of this paragraph is as follows:

> Our present investigation does not require us to go into further detail on this point. It still remains correct that the cost price of commodities is always smaller than their value. For even if a commodity's cost price may diverge from the value of the means of production, this error in the past is matter of indifference to the capitalist. *The cost price* of a commodity is a ***given precondition***, independent of his, the capitalist's, production, while ***the result of his production is a commodity that contains surplus-value***, and therefore an excess value over and above *its* cost price. As a general rule, the principle that *the* cost price of a commodity is less than its value has been transformed in practice into the principle that *its* cost price is less than the price of production. For the total social capital, where price of production equals value, this assertion is identical with the earlier one that *the* cost price is less than the value. Even though it has a different meaning for the particular spheres of production, the ***basic fact remains*** that, taking the social capital as a whole, ***the*** cost price of the commodities that this produces is less than their value, or than the price of production which is identical with this value for the total mass of commodities.[95]

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95   Marx 1981, pp. 264–5.

We can see that, after stating in the beginning sentences of this paragraph that the cost price is equal to the price of production of the inputs, rather than the value of the inputs, Marx goes on to say that 'the' cost price is still a 'given precondition' (in the determination of value and surplus-value), and that surplus-value is still the excess of the value of commodities over *this given cost price*. I think this is a very clear, succinct expression of Marx's overall logical method – *the cost price is a precondition of production, and surplus-value is the result of production*, the excess of the value produced over the given cost price presupposed to production. In other words, the value of commodities is equal to the sum of *this given cost price* plus the surplus-value (i.e., $P_i = K_i + S_i$), as in the previous paragraphs, even though this given cost price is now understood to be equal to the price of production of the inputs, rather than the value of the inputs. This 'modification in the determination of the cost price' *does not mean a change the magnitude* of the single, given, actual cost price. The only thing that changes is the *explanation* of this single, given cost price (the actual cost price), from a partial explanation (equal to the value of the inputs) to a more complete explanation (equal to the price of production of the inputs).

Marx then goes on to say that for *individual* commodities, the principle that the cost price is less than the value (i.e., $K_i < P_i$) is transformed into the principle that the cost price is less than the price of production (i.e., $K_i < PP_i$). Notice again that the *cost price is the same* in both of these comparisons. Marx does *not* say that the 'cost price in value terms' is less than the value of commodities and the 'cost price in price of production terms' is less than the price of production of commodities. Instead, Marx says that *the same cost price* (K_i) is less than both the value and the price of production of commodities. Therefore, the same cost price is a component of both the value and the price of production of commodities (i.e., $P_i = K_i + S_i$, and $PP_i = K_i + \pi_i$, as in equations (5) and (7) above).

Marx goes on to say, for the *total* social capital, there is no change in this principle whatsoever, either in the total cost price or in the total value of commodities. Even though the cost price is now understood to be equal to the price of production of the inputs, and not to the value of the inputs, 'the basic fact remains' that the total surplus-value is the difference between the total value of commodities and the *given total cost price* (i.e., $S = P - K$). The fact that the given cost price diverges from the value of the inputs makes no difference whatsoever in the total magnitudes of any of these variables.

4.4   *More Complete Explanation of Constant Capital, Variable Capital, and the Value of Commodities Produced by Capital*

Therefore, I conclude that the 'modification in the determination of the cost price' in the opening sentences of this crucial paragraph does not mean that

the magnitude of the cost price changes, or that there are two cost prices, one for the determination of values and another for the determination of prices of production. Rather, it means that the *same cost price*, that is taken as given in the determination of both value and price of production (as discussed in previous paragraphs), *is itself now explained more fully than in Volume I*. Marx originally assumed in Volume I that this single, given cost price is equal to the value of the inputs (because no other assumption is possible at that abstract 'macro' stage of the theory). However, after the determination of prices of production in Volume III, Marx provides a more complete explanation of the given cost price, as equal to the prices of production of the inputs. But this more complete explanation of the given cost price *does not change the magnitude* of the given cost price itself. The *same* cost price continues to be taken as given in the determination of both the value and the price of production of commodities, as the actual (long-run equilibrium) quantities of money capital advanced to purchase means of production and labour power and consumed in production.

According to this interpretation, Marx is *not* acknowledging in this passage that he failed to transform the cost prices from values to prices of production earlier in the chapter, and that his earlier presentation needs to be corrected. Marx does not say anything about needing to correct the numbers in his tables earlier in the chapter, in which the cost price is the same for the determination of both values and prices of production. Rather, this passage says that we can now understand that the given cost prices (which remain the same for the determination of both values and prices of production) are themselves equal to the prices of production of the inputs, rather than to the values of the inputs. When Marx says that 'it is always possible to go wrong' if one assumes that the cost price is equal to the value of commodities, he means that it would be wrong to make this assumption, not only in the determination of the *price of production* of commodities (as in the standard interpretation), but also in the determination of the *value* of commodities as products of capital.

This interpretation of the meaning of the 'modification in the determination of the cost price' in the opening sentences of this paragraph, unlike the standard interpretation, is consistent with the preceding paragraphs and is also consistent with the rest of the same paragraph, in which Marx clearly states that the *cost price is the same* in the determination of both value and price of production of commodities. Thus we can see that in these five key paragraphs in Chapter 9 Marx repeatedly assumes that the *cost price is the same* in the determination of both value and price of production. The single magnitude of cost price is a 'given precondition' in the determination of both the value and the price of production of commodities. This single magnitude of cost price is now explained

more fully, as equal to the prices of production of the inputs, rather than the value of the inputs, but the magnitude of the given cost price does not change. There are not two cost prices, one for the determination of value and the other for the determination of price of production, such that the former has to be transformed into the latter. No such transformation of the cost price from value to price of production is necessary. Therefore, Marx did not 'fail' to make such an unnecessary transformation.

Value of Commodities Produced by Capital

We can also see that this more complete explanation of the given cost price (constant capital + variable capital) also provides a more complete explanation of the *value* of commodities *produced by capital*. As discussed in Chapter 2, the value of commodities produced by capital is different and more complicated than the value of simple commodities.[96] The value of commodities continues to be *determined* by the sum of the given constant capital (one component of the cost price) and the new value produced by current labour ($P = C + N$, as in equation (1) above). However, the given constant capital component of the value of commodities is no longer assumed to be equal to the *value* of the means of production, but is instead now explained more fully to be equal to the *price of production* of the means of production. The value transferred from the constant capital to the *value* of commodities produced by capital is the *actual constant capital* consumed in production, even though this actual constant capital is not equal to the value of the means of production. The labour time required to produce the means of production *has already been objectively expressed* as the price of production of the means of production (as 'general social labour'), and the already existing constant capital (equal to the price of production of the means of production) 'reappears' and becomes a 'presupposed constituent' of the value of commodities produced by capital.

Similarly, the *value* of commodities produced by capital also continues to be equal to the given cost price plus the surplus-value, as Marx repeatedly emphasised in the paragraphs from Chapter 9 discussed above (i.e., $P_i = K_i + S_i$, as in equation (6) above). However, the given cost price (K_i) is no longer

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96 Ramos 1996, pp. 65–8, also emphasises this more complete explanation of the value of commodities, after prices of production have been determined. Wolff, Roberts, and Callari (1982) also make a similar argument, although they define all the key variables in Marx's theory (value, surplus-value, constant capital, variable capital, cost price, price of production) in terms of labour times, rather than in terms of quantities of money capital; see Chapter 10.

assumed to be equal to the *value* of the inputs, but is instead now more fully explained to be equal to the *price of production* of the inputs. The cost price component of the value of commodities is the actual constant capital and variable capital consumed in production, even though these actual quantities of money capital are not equal to the values of the inputs.

4.5   *Value and Price of Production of 'Average' Commodities*

In Chapters 10, 11, and 12 of Volume III, Marx returned to the subject of the price of production of commodities produced with capital of *average* composition, already discussed in Chapter 9. At the beginning of *Chapter 10*, Marx again stated briefly that the prices of production of such average commodities are equal to their values.

> In some branches of production the capital employed has a composition we may describe as 'mean' or 'average', i.e. a composition exactly or approximately the same as the average of the total social capital. In these spheres, the production prices of the commodities coincide exactly or approximately with their values as expressed in money.[97]

Marx repeated the same point in the first sentence of the next paragraph. Again, as discussed above, this equality between the price of production and the value of average commodities can be true *only if the cost price is the same* for both the value and the price of production.

Chapter 11 is about the effects of a change of wages on the prices of production of commodities (i.e., Ricardo's main question). Marx's method of analysis in this chapter is to first *assume a given magnitude of money wages*, and then assume a 25% increase or decrease of the given money wages, and analyse the effects of these changes of money wages on the prices of production of three types of commodities: (1) commodities produced with the *average* composition of capital; (2) commodities produced with *below average* composition of capital; and (3) commodities produced with *above average* composition of capital. In both cases of an increase and a decrease of wages, the price of production of commodities produced with average composition *does not change*. This result is possible only if the price of production of average commodities is equal to their value, which in turn is true, as we have seen, only if the cost price is the same for both the value and the price of production of average commodities.

Marx returned again to the subject of the effect of a change of wages on the price of production of average commodities in a short, but important, 'sup-

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97   Marx 1981, p. 273.

plementary remark' in Chapter 12, Section 2, entitled 'The Production Price of Commodities of *Average* Composition'. We have just seen that Marx concluded in Chapter 11 that a change of wages would have *no effect* on the price of production of average commodities. In Chapter 12, Marx returns to this question, with the explicit consideration of the fact that the cost price of commodities is *not* equal to the value of the inputs, but is instead equal to the price of production of the inputs, as he had discussed earlier in Chapter 9. The question addressed in this section is this: does the fact that the cost price of commodities is equal to the price of production on the inputs, rather than their value, alter the earlier conclusion (in Chapter 11) that a change of wages would have no effect on the price of production of average commodities? We will see below that Marx's conclusion is that the answer to this question is *no*, i.e., that this earlier conclusion is *not altered* by the fact that the cost price of commodities is equal to the price of production on the inputs. Marx's argument in this section assumes that the *cost price is the same* in the determination of both the value and the price of production of commodities, and Marx states this assumption explicitly. However, in first paragraph of this section, Marx makes a statement that appears to contradict this conclusion reached at the end of the section. This first paragraph is often cited by critics of Marx to support their interpretation that there are two sets of cost prices, not just one, one for the determination of values and one for the determination of prices of production, and that Marx 'failed to transform' the cost prices from values to prices of production. The first paragraph in this section is as follows:

> We have already seen that the divergence of price of production from value arises for the following reasons: (1) because the average profit is added to the cost price of a commodity, rather than the surplus-value contained in it; (2) ***because the price of production of a commodity that diverges in this way from its value enters as an element into the cost price of other commodities***, which means that a ***divergence*** from the value of the means of production consumed ***may already be contained in the cost price***, quite apart from the divergence that may arise for the commodity itself from the difference between average profit and surplus-value.[98]

This paragraph could be interpreted in the standard way – that there are two sets of cost prices and thus two reasons for divergence between values and prices of production. However, we will see below that the standard interpreta-

98   Marx 1981, pp. 308–9.

tion of this paragraph is contradicted by the remaining two paragraphs in this section (and is also contradicted by all the other textual evidence presented in this chapter). On the other hand, this paragraph can also be interpreted in a different way, and in a way that is consistent with the rest of the section (and the other textual evidence). This different interpretation of this first paragraph will be explained after examining the other two paragraphs in this section.

In the second paragraph of this section, Marx elaborates on the second reason for the divergence of price of production from value – namely that the cost price diverges from the values of the means of production and means of subsistence, including for commodities of average composition. Marx first discusses constant capital and then variable capital.

> It is quite possible, accordingly, for the cost price to diverge from the value sum of the elements of which this component of the price of production is composed even in the case of commodities that are produced by capitals of average composition. Let us assume that the average composition is 80c + 20v. It is possible now that, for the actual individual capitals that are composed in this way, the 80c may be greater or less than the value of *c*, the constant capital, since this *c* is composed of commodities whose prices are different from their values. The 20v can similarly diverge from its value, if the spending of wages on consumption involves commodities whose prices of production are different from their values. The ***workers must work for a greater or lesser amount of time in order to buy back these commodities*** (to replace them) and ***must therefore perform more or less necessary labour*** than would be needed if the prices of production of their necessary means of subsistence did coincide with their values.[99]

Notice that Marx speaks again here of a capital of *average composition*, which (we have seen above) presumes that there is only one cost price, which is a component of both the values and the prices of production of commodities.

Then in the final paragraph of this section, Marx emphasises the main point that he is trying to make in this section about the prices of production of commodities of average composition – that even though the cost price is not equal to the value of the inputs, this divergence does not affect the 'correctness of the principles put forward' in previous chapters regarding the price of production of commodities of average composition. These principles are of course (1) that the prices of production of average commodities are equal

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99   Marx 1981, p. 309.

to their values and (2) that the prices of production of average commodities are not affected by a change of wages. As we have seen above, these two principles about the price of production of average commodities can be true *if and only if the cost price is the same* for both the value and the price of production of average commodities; in other words, only if there is *only one cost price*, not two. In this final paragraph, Marx once again explicitly expresses this identity of the cost price in the value and the price of production of average commodities, including in terms of the familiar algebraic formulations. This crucial concluding paragraph is the following:

> *Yet this possibility* [cost price = price of production on inputs] *in no way affects the correctness of the principles put forward for commodities of average composition.*
>
> The quantity of profit that falls to the share of these commodities is equal to the quantity of surplus-value contained in them. For the above capital, with its composition of 8oc + 20v, for example, *the important thing as far as the determination of surplus-value is concerned is not whether these figures are the expression of actual values, but rather what their mutual relationship is*, i.e. that v is one-fifth of the total capital and c is four-fifths. As soon as this is the case, as assumed above, the surplus-value v produces is equal to the average profit. On the other hand, because it [the surplus-value v produces] is equal to the average profit, the price of production = cost price + profit = $k + p = k + s$, which is equal in practice to the commodity's value. In other words, *an increase or decrease in wages in this case leaves $k + p$ unaffected, just as it would leave the commodity's value unaffected*, and simply brings about a corresponding converse movement, a decrease or increase, on the side of the profit rate.[100]

Please note the very important clarification – that what really matters ('the important thing') in the determination of surplus-value, and hence also in the determination of value, is *not* whether the quantities of constant capital and variable capital are the equal to the *values* of the inputs, but rather what these quantities *actually are* and the relation between them, i.e., whether or not the ratio of the actual quantities is equal to the actual average composition of capital. As long as the actual composition of an individual capital is equal to the actual average composition of capital, then the average profit of this capital

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100   Marx 1981, pp. 309–10.

will be equal to the surplus-value produced, and the price of production of this average commodity will be equal to its value. It follows that the constant capital that is transferred to the *value* of the output is the *actual* constant capital, even though this actual constant capital is not equal to the value of the means of production, and that the variable capital that is subtracted from the new value produced to determine the actual surplus-value is the *actual* variable capital, even though this actual variable capital is not equal to the value of the means of subsistence. Therefore, we can see that the standard interpretation of the first paragraph this section – that there are two cost prices and 'two reasons for divergence' between value and price of production – is directly contradicted by the conclusions reached at the end of this section – and in previous chapters – about the price of production of average commodities. The prices of production of average commodities are equal to their values, and are not affected by a change of wages, *only if the cost price is the same* in the determination of both the value and the price of production of commodities. And if the cost price is the same in the determination of both value and price of production, then there can be *only one reason for divergence* between value and price of production – namely the difference between the average profit and the surplus-value produced.

Therefore, in interpreting Section 2 of Chapter 12, we have two options: (1) either Marx's arguments about the prices of production of average commodities in this section and in earlier chapters are all completely wrong, *or* (2) Marx simply misspoke in the first paragraph of this section when he said that there are 'two reasons for divergence' between value and price of production.

I think that Marx misspoke in the first paragraph of Section 2. I think that Marx by habit used the term 'value' in the first paragraph of Section 2 in its earlier simplified meaning, under the provisional assumption that the cost price of commodities is equal to the value of the inputs. With this simplified meaning of 'value', there would be 'two reasons' for divergence of price of production from value – because the cost price is different and because the average profit is not equal to the surplus-value produced. However, we saw above that Marx argued in Chapter 9 that, after prices of production are determined, the cost price component of the value of commodities is more fully explained as equal to the *price of production* of the inputs, rather than to the value of the inputs, and, consequently, that the value of commodities is also more fully explained in that the cost price component of the value of commodities is equal to the price of production of the inputs. This more complete explanation of the cost price and the value of commodities implies that the *cost price is the same* in the determination of both value and price of production, and thus that there is *only one reason* for divergence between the value and the price of produc-

tion of commodities – i.e., the divergence between the average profit and the surplus-value produced. The divergence of cost prices from the values of the inputs is 'already contained' in the magnitude of the cost price, and this single cost price is a component of both the values and the prices of production of commodities; that is: value = k + s and price of production = k + π.

4.6   *Value and Price of Production of Agricultural Commodities*

Toward the end of Volume III, in Chapter 45 on absolute rent, Marx stated again clearly and algebraically that the *cost price is the same* ('a given constant') in the determination of both the values and the prices of production of agricultural goods specifically:

> Since one part of the *value* and the **price of production** is in fact a ***given constant***, i.e. the ***cost price, the capital = k consumed*** in the course of production, the distinction lies in the other, variable part – the surplus-value, which in the price of production = *p* is profit, i.e. the total surplus-value reckoned on the social capital and on each individual capital as an aliquot part of this, but which in the value of the commodity is equal to the actual surplus-value which this particular capital has produced, forming an integral part of the commodity value it has created. If the value of a commodity is above its price of production, the price of production = *k + p*, and its value = *k + p + d*, so that *p + d* = the surplus-value contained in it. ***The difference between the value and the price of production is thus d***, the excess of the surplus-value produced by this capital over the surplus-value allotted to it by the general rate of profit.[101]

Note that because k is the same, the difference between the value and price of production of commodities is due *solely* to the difference between surplus-value and profit, symbolised in this passage by **d**. There are not 'two reasons for divergence' between values and prices of production, but only one reason.

5   Volume I of *Capital*

The determination of the constant capital and variable capital in the final published versions of Volume I is not as clear as it is in the earlier drafts, especially the key Chapter 7. At the urging of Engels, and because of his own

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101   Marx 1981, p. 897.

desire to make his book more accessible to the working class, Marx simplified the exposition of his theory considerably, compared to the earlier drafts. There are many fewer methodological comments about the initial presuppositions of his theory of surplus-value. However, the fact that the analytical framework of his theory remains the same – the circuit of money capital (M – C ... P ... C′ – M + ΔM) – strongly suggests that the initial presupposition of Marx's theory of ΔM continues to be the initial quantities of money capital M advanced to purchase means of production and labour power at the beginning of the circuit of capital, as emphasised in earlier drafts.

It should also be kept in mind that the final published versions of Volume I (beginning in 1867) were written *after* Marx had written the draft of Volume III in the *Manuscript of 1864–65*, including Part 2 on prices of production which we have just reviewed, in which Marx emphasised that the *cost price is the same* in the determination of both values and prices of production. Therefore, Marx was fully aware (at least since his discussion of Bailey in 1863, as we have seen) that, in the determination of value and surplus-value, the actual constant capital and variable capital are equal to the *prices of production* of the means of production and means of subsistence, not equal to their values. Marx was also fully aware that there is a significant difference between the value of *simple commodities* and the value of *commodities as products of capital*, as he discussed in the 'Results' manuscript. However, these points are somewhat difficult to explain to a popular readership, so Marx tried to finesse the difficulty with a simplified version of his theory. It was a poor decision, in my view.

Part 2 of Volume I ('The Transformation of Money into Capital') is similar to earlier drafts. Capital is clearly defined in terms of *money*, as money which is advanced into circulation in order to make more money, symbolised once again by the 'general formula for capital' M – C – M′.[102] Surplus-value is again defined as ΔM, the excess of the money capital recovered (M′) over the initial money capital advanced (M).

> The complete form of the process is therefore M–C–M′, where M′ = M + ΔM, i.e. the original sum advanced plus an increment. This increment or excess over the original value I call '***surplus-value***'. The value originally advanced, therefore, not only remains intact while in circulation, but

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102   Marx humorously refers to capitalists as 'money bags', and his humour (as usual) carries an important message – that the circuit of capital begins with money and a given quantity of money in the pockets of capitalists.

increases its magnitude, adds to itself a surplus-value, or is valorised. And this movement converts it into *capital*.[103]

The components of capital in the general formula for capital are *actual* quantities of money capital which 'appear every day before our eyes' (C.I. 247) and 'appear directly in the sphere of circulation' (C.I. 257). Marx does not state so explicitly, but we have seen in the earlier drafts that these actual previously existing quantities of money capital are *presupposed* in his theory of ΔM, because the actual M has already been advanced at the beginning of the circuit of money capital and is assumed to be a known quantity, and because the 'decisive factor' about capitalism is the difference between the money capital recovered at the end of the circuit of capital (M′) and the pre-existing money capital advanced at the beginning of the circuit (M). What is decisive for capitalism and for the production of surplus-value is the actual pre-existing money capital, not a hypothetical money capital equal to the values of the means of production and means of subsistence.

As in previous drafts, Marx divided the original presupposed money capital (M) into two components, which he now clearly defined as constant capital and variable capital (Chapter 8). As we know from the previous discussion, these names refer to the *different roles* played by these two components of the original capital in the determination of value and surplus-value. The presupposed quantity of *constant capital* is transferred to the value of the product, and thus remains constant, and is not a source of surplus-value.

> That part of capital, therefore, which is turned into means of production ... ***does not undergo any quantitative alteration of value*** in the process of production. For this reason, I call it the constant part of capital, or more briefly, ***constant capital***.[104]

Marx emphasises again (as he had in previous drafts) that constant capital is 'preserved' and 're-appears' as a 'constituent part' of the value of the product, thus implying that constant capital *existed prior* to the current production process, and is taken as given as such. In a footnote, Marx criticises the American economist Wayland for trying 'to squeeze an explanation of surplus-value out of the mere *re-appearance* of *previously existing* values'.[105]

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103   Marx 1977a, pp. 251–2.
104   Marx 1977a, p. 317.
105   Marx 1977a, p. 316.

On the other hand, the presupposed quantity of variable capital increases its magnitude, and thus is the only source of surplus-value, because it is exchanged for labour power, which produces a quantity of new value that is greater than the quantity of variable capital advanced (N > V).

> On the other hand, that part of capital which is turned into labour power *does undergo an alteration of value* in the process of production. It both reproduces the equivalent of its own value and produces an excess, a surplus-value ... This part of capital is continually being transformed from a constant into a variable magnitude. I therefore call it the variable part of capital, or more briefly, *variable capital*.[106]

5.1   *Chapter 9*

I will discuss Chapter 9 ('The Rate of Surplus-Value') before Chapter 7, Section 2 ('The Valorisation Process') because Section 1 of Chapter 9 presents a clearer summary of Marx's theory of surplus-value, in part because the theory is presented in terms of the concepts of constant capital and variable capital, which are introduced in Chapter 8. Chapter 9 begins with the observation that surplus-value appears at first sight to be the difference between the initial capital advanced (or 'laid out' or 'expended') (denoted as C) and the final value of the product (C′).[107]

> The surplus-value generated in the production process by C, the *capital advanced*, i.e. the valorisation of the value of the capital C, presents itself to us first as the amount by which the value of the product exceeds the value of its constituent elements.
>
> The capital *C* is made up of two components, one the *sum of money c laid out* on means of production, and the other the *sum of money v expended* on labour power.[108]

Marx then presents a numerical example:

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106   Marx 1977a, p. 317.

107   Marx substitutes C and C′ for M and M′ because he is discussing only the constant capital *consumed* in a given period, not the total constant capital advanced.

108   Marx 1977a, p. 320. Marx clarifies in the next paragraph that he is talking about the constant capital advanced *and consumed* in a given period, not the total constant capital advanced.

At the beginning, then C = *c* + *v*; for example, if £500 is the **capital advanced**, its components may be such that £500 = £410 constant + £90 variable.[109] After production, there is a product whose value is C′ = (*c* + *v*) + *s*, and *s* = £90. The original capital of £500 has increased its magnitude to £590. When the process of production is finished, we get a commodity whose value = (*c* + *v*) + *s*, where *s* is the surplus-value; or taking our former figures, the value of this commodity is (£410 constant + £90 variable) + £90 surplus.[110]

Marx then states that, since constant capital and variable capital are 'constituent elements' of *both* the capital advanced and the value of the product, it is a 'mere tautology' (i.e., mere definition, no theory) to say that surplus-value is the excess of the value of the product over the capital advanced. Algebraically:

$$s = [(c + v) + s] - (c + v)$$

Thus we can see once again that the presupposed components of the advanced capital – constant capital and variable capital – are also components of the value of the product.

Marx then focuses on the constant capital component of the advanced capital, and repeats again that the pre-existing constant capital is *transferred* to the value of the product and 'merely *reappears* in it'. Therefore, from the perspective of the determination of new value and surplus-value, constant capital plays no role, and can be abstracted from. The new value produced in the current period is only (*v* + *s*) and does not include *c*.

... let us return to the formula C = *c* + *v*, which we saw was transformed into C′ = (*c* + *v*) + *s*, C becoming C′. We know that the value of the constant capital is transferred to the product, and merely re-appears in it. The new value actually created in the process, the 'value-product', is therefore not the same as the value of the product; it is not, as it would at first sight appear, (*c* + *v*) + *s* or £410 constant + £90 variable + £90 surplus, but rather *v* + *s* or £90 variable + £90 surplus.[111]

109   Ibid.
110   Ibid. One is reminded of Marx's comments in his discussion of Bailey and earlier in the *Grundrisse* (p. 762) that the 'all-embracing and decisive factor' of capitalist production is the difference between the money *presupposed* to production and the money that results from production.
111   Marx 1977a, p. 321.

Therefore, surplus-value is purely the result of an 'alteration' of the variable capital.

Marx then mentions a 'further difficulty' with respect to variable capital: in the beginning (i.e., before production), variable capital is a *given, constant* magnitude, and thus it 'appears absurd' to treat a given constant magnitude as a variable one. Marx's explanation of this apparent absurdity is of course that the initial given amount of variable capital is exchanged for labour power, which is a value-creating power. The given variable capital becomes a 'symbol' for the whole process undergone by this component of the advanced capital, from money capital to labour power to living labour in production to new value produced.

> A further difficulty is caused by the original form of the variable capital. In our example, $C' = £410$ constant + £90 variable + £90 surplus; but £90 variable is a ***given*** and therefore a constant magnitude and hence it appears absurd to treat it as variable. In fact, however, the £90 variable is here merely a symbol for the process undergone by this value. The portion of the capital invested in the purchase of labour power is a definite quantity of objectified labour [£90], a constant value like the value of the labour-power purchased. But in the process the place of the £90 is taken by the labour-power which sets itself in motion, dead labour is replaced by living labour, something stagnant by something flowing, a constant by a variable. ***The result is the reproduction of v plus an increment of v.***[112]

For our purpose, the main point to note in this passage is that the initial variable capital is a *given* magnitude, whose value must be reproduced before any surplus-value can be produced. Surplus-value is then *determined* (not just a tautological definition) by subtracting the given variable capital from the new value produced by living labour:

> Given that the new value produced = £180, a sum which consequently represents the whole of the labour expended during the process, if we subtract £90 from it, being the value of the variable capital, we have £90 left, the amount of the surplus-value.[113]

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112   Marx 1977a, p. 322.

113   Marx 1977a, p. 324.

Marx then introduces the key concept of *necessary labour time*, which is defined as the labour time necessary for workers to produce *an equivalent to the variable capital*, or an equivalent to value of labour power which was bought with the variable capital:

> But as we have seen, during that part of his day's labour in which he produces the value of his labour-power, say 3 shillings, he produces only an equivalent of the value of his labour-power already advanced; **the new value only replaces the variable capital advanced** … I call the portion of the working day during which this reproduction takes place **necessary labour-time** …[114]

Marx does not state explicitly here, but necessary labour time (NLT) (the time necessary to 'replace the variable capital advanced') is implicitly determined by dividing the presupposed variable capital (v) (e.g., 3 shillings) by the rate at which living labour produces new value per hour (m) (i.e., the MELT, which is determined by the quantity of gold produced per hour, e.g., 0.5 shillings per hour). Algebraically: $\textbf{NLT} = v \, / \, \textbf{m}$ (e.g., 6 hours = 3 shillings / 0.5 shillings per hour). *Surplus labour time* is then defined as the remainder of the working day, in which workers continue to produce new value, but this additional new value no longer goes to 'replace the variable capital advanced' by capitalists to workers, but instead becomes the surplus-value of capitalists.

This summary of Marx's theory of surplus-value in Chapter 9 is very clear. The presupposed components of the original advanced capital (constant capital and variable capital) are also components of the value of the product, and surplus-value is determined by the difference between the new value produced by living labour and the actual variable capital advanced ('laid out') to purchase labour power. Necessary labour time is the time necessary to produce an equivalent to the actual variable capital advanced, and surplus labour time is the rest of the working day.

Volume I is at the level of abstraction of capital in general, which assumes that price = value, and thus that the price of the means of subsistence = the value of the means of subsistence, i.e., is proportional to the labour time required to produce the means of subsistence ($P_{ms} = m \, L_{ms}$). Under this assumption, the necessary labour time required to produce an equivalent to the variable capital advanced (NLT) is the same as the labour time required to produce the means of subsistence (L_{ms}):

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114 Marx 1977a, pp. 324–5.

$$\text{NLT} = v \ / \ m = P_{ms} \ / \ m = m \ L_{ms} \ / \ m = L_{ms}$$

Marx uses these two quantities of labour time interchangeably in Chapter 9 (as in the above quotation), which leaves the impression that these two quantities of labour time are always identically equal. However, these two quantities of labour time are not always equal. Once the general assumption that price = value is dropped in Volume III, then the labour time required to produce an equivalent to the actual variable capital is not the same quantity as the labour time required to produce the means of subsistence.

$$\text{NLT} = v \ / \ m = P_{ms} \ / \ m \neq m \ L_{ms} \ / \ m = L_{ms}$$

What matters for the determination of the actual total surplus-value in Volume I is the actual total variable capital, not a hypothetical variable capital proportional to the labour time required to produce means of subsistence. The actual variable capital that was expended to purchase labour power at the beginning of the circuit of capital must be recovered before any actual surplus-value can be accrued. Necessary labour time is the labour time necessary for the recovery of this actual variable capital, and the beginning of the production of actual surplus-value.[115]

In the beginning of Section 2 of Chapter 9, Marx clearly summarised his theory of value, as determined by the sum of two components:

> The product of a working day of 12 hours is 20 lb. of yarn, having a value of 30s. No less than eight-tenths of this value, or 24s., is formed by the mere re-appearance in the value of the means of production ... In other words, this part consists of constant capital. The remaining two-tenths, or 6s., is the new value created during the spinning process; one half of this

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115   Chapter 12 of Volume I provides further strong evidence of this definition of necessary labour. Chapter 12 begins with the question: how can necessary labour be reduced (in order to increase surplus labour)? If necessary labour were defined as L_{ms}, then the answer to this question would have been simple and straightforward: reduce L_{ms}. However, this is not Marx's answer. Instead Marx's answer in Chapter 12 can be summarised in the following logical steps: (1) in order to reduce necessary labour, variable capital must be reduced (because NLT = V/m); (2) in order to reduce V, P_{ms} must be reduced (because V = P_{ms}); and finally Marx arrives at the conclusion: (3) in order to reduce P_{ms}, L_{ms} must re reduced (because L_{ms} is the main determinant of P_{ms}). Thus NLT depends mainly, but not entirely, on L_{ms}.

replaces the value of the day's labour-power, or the variable capital, the remaining half constitutes a surplus-value of 3s.[116]

This is another clear statement that the value of commodities is determined by the sum of two components: (1) the 'reappearing value' of the constant capital and (2) the 'new value created' by the quantity of current labour. The 'reappearing value' of constant capital existed previously and is taken as given and the 'new value created' is determined by current labour. The new value produced by current labour is in turn subdivided into two parts: one part which replaces the given variable capital and the remainder which is the capitalists' surplus-value.

5.2   *Chapter 7*

Chapter 7 of Volume I, in which Marx's basic theory of surplus-value is first presented, is less clear than Chapter 9 and the earlier drafts. There are no methodological comments as in the draft of Chapter 7 in the *Manuscript of 1861–63*, in which Marx clarified that the initial money capital M in the valorisation process is *presupposed*, because this initial money capital has already been advanced and thus is a known quantity, and because the main thing about capitalism is the difference between the money capital recovered and the initial money capital advanced. And there are no remarks similar to the 'Results', that the initial M is presupposed because the main goal of Marx's theory is to explain how the initial given M becomes M + ΔM. Most importantly, Marx also does not discuss in Chapter 7 the fundamental distinction between *simple commodities* and *commodities as products of capital*, as emphasised in the 'Results'. Instead, in the interest of simplification, Marx tried to finesse this important difference, and this attempt at simplification has left a legacy of ambiguity and confusion. Part of the difficulty with the exposition in Chapter 7 is that the key concepts of constant capital and variable capital have not yet been introduced. Therefore, Marx could not present his theory of value and surplus-value clearly and explicitly in terms of these key components of the original capital advanced, as he did in Chapter 9 (that the presupposed components of the advanced capital become determinants of the value and surplus-value of the product). In Chapter 7, constant capital is described as 'the value of the means of production' and variable capital as 'the value of labour power'. With this formulation, it is less clear that these components of the value and surplus-value of the product are the two

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116   Marx 1977a, p. 329. This is the passage that Marx referred to in Chapter 1 of Volume III (discussed above), with a different numerical example.

components of the *original capital advanced* (M = C + V), and it appears that the magnitudes of these two components are *determined solely* by the values of the means of production and means of subsistence, rather than presupposed as the actual quantities of money capital advanced, which are only partially explained by these values.

In the following discussion of Chapter 7, I will utilise the concepts of constant capital and variable capital as appropriate in order to improve the exposition.

Marx began his theory of surplus-value in Chapter 7 by referring back to his labour theory of value in Chapter 1, and stating that 'this rule holds good' in the case of commodities handed over to capitalists:

> We know that the value of each commodity is determined by the quantity of labour materialised in its use-value, by the labour time necessary to produce it. *This rule holds good* in the case of the product handed over to the capitalist as a result of the labour process. Assuming the product to be yarn, our first step is to calculate the quantity of labour objectified in it.[117]

Thus, in the interest of presenting a simplified labour theory of value, Marx appears to be ignoring the important distinction between *simple commodities* and *commodities produced by capital* that he emphasised in the 'Results', and even to suggest that there is no difference between the two.

Marx then proceeds to calculate the total quantity of 'labour objectified in the yarn', starting with the past labour time transferred from the means of production (cotton and spindle). As discussed in Chapter 2, this 'transferred value' component of value is one of the crucial differences between simple commodities and commodities produced by capital. Marx began by stating that there is no need to investigate the value of the cotton because it is assumed that the capitalist has purchased the cotton at its value, e.g., *10 shillings*, and thus the value of the cotton *already exists* as these 10 shillings and is taken as given as such in the determination of the value of the product.

> We have no need at present to investigate the value of the cotton, for our capitalist has, we will assume, bought it at its full value, say 10 shillings. In this *price* the labour required for the production of the cotton is *already expressed* in terms of *average social labour*.[118]

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117   Marx 1977a, p. 293.
118   Ibid.

This statement that the labour required to produce the cotton has already been expressed as 'average social labour', i.e., as the price of the cotton (i.e., as money), is similar to the passages in the *Manuscript of 1861–63* and the 'Results' discussed above. It is also assumed that the depreciation of the spindle is equal to 2 shillings, which also already expresses the labour time required to produce the spindle, pro-rated over its lifetime.

Next there is a sentence which is difficult to understand, especially without a knowledge of the similar passages in the earlier drafts discussed above:

> If then, twenty-four hours of labour, or two working days, are *required to produce the quantity of gold represented by 12 shillings*, it follows first of all that two days of labour are objectified in the yarn.[119]

The logic here seems to be that the 24 hours of past labour 'objectified in the yarn' is derived, not from the labour time required to produce cotton and spindles, but rather from the 12 shillings paid for the cotton and the spindle, and the quantity of labour required to produce the quantity of gold that is equal to the 12 shillings, i.e., the quantity of labour that is represented by that amount of money. The past labour objectified in the yarn is *not* derived directly from the labour required to produce the cotton and the spindle because that past labour *has already been expressed in their price*, i.e., as 'average social labour'. This quantity of past labour (L_p) could be determined by dividing the price of the consumed means of production (P_{mp}), or the constant capital advanced to purchase the consumed means of production (c), by the quantity of gold produced per hour (m) (e.g., 0.5 shillings per hour):

$$L_p = P_{mp} / m = c / m = 12 \text{ s} / 0.5 \text{ s} / \text{hr} = 6 \text{ hr}$$

Of course, it is assumed as a first approximation in Volume I (capital in general) that the prices of individual commodities are equal to their values, including the prices of means of production, which implies that constant capital is proportional to the labour time required to produce the means of production (L_{mp}); that is: $c = P_{mp} = m L_{mp}$. In this case, there appears to be no difference between L_p and L_{mp}:

$$L_p = c / m = P_{mp} / m = m L_{mp} / m = L_{mp}$$

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119   Marx 1977a, p. 294.

In Chapter 7, Marx uses these two quantities (L_p and L_{mp}) interchangeably, again leaving the wrong impression that the two quantities are always identically equal. But these two quantities of labour time are not in general equal. Once the provisional assumption that the prices of individual commodities are equal to their values is dropped in Volume III, then L_p is no longer equal to L_{mp}:

$$L_p = c \: / \: m = P_{mp} \: / \: m \neq m \: L_{mp} \: / \: m = L_{mp}$$

And we have seen from the above discussion of 'Bailey's contribution' in the *Manuscript of 1861–63* and Part 2 of Volume III (the *Manuscript of 1864–65*) that, in this case, the transferred value component of the value of commodities produced by capital is the *actual constant capital advanced*, which implies that the past labour objectified in the product is L_p, not L_{mp}.

The crucial point is that the quantity of constant capital – or the price of the means of production – is *not determined by* the labour value of the means of production. The quantity of constant capital is *presupposed*, as the *actual* quantity of money capital advanced to purchase means of production in the actual capitalist economy, and this presupposed actual quantity of money capital is transferred directly to the value of the product. This actual quantity of constant capital is equal to the price of production of the means of production, which depends mainly, but not entirely, on the labor time required to produce the means of production.

The fact that constant capital is taken as given is especially clear in the case of *fixed constant capital* (advanced to purchase long-lasting means of production) and the method Marx used to determine the annual depreciation costs of fixed constant capital, which he discussed in Chapter 8 (pp. 311–14). Marx's method of depreciation was the so-called 'straight-line' method, according to which the annual depreciation costs (d) are determined by dividing the original fixed constant capital (F) by the expected lifetime of the means of production (t); i.e., d = F / t. This 'straight-line' method of determining depreciation is not possible unless the original fixed constant capital is taken as given, along with the expected lifetime.[120]

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120   Sraffa (1960, Appendix D) interpreted Marx's theory of fixed capital as a forerunner (along with Ricardo, Malthus, and Torrens) of his own 'joint product' method of treating fixed capital – the price of 'partially used' fixed capital goods is determined simultaneously with the prices of the output. I have argued that this is a complete misunderstanding of Marx's treatment of fixed capital (Moseley 2009b). In Marx's theory, fixed constant capital is taken as given, as the actual money capital advanced to purchase machines, etc., and is not determined simultaneously with the prices of the outputs. (Sraffa's interpretation

Moving on (in Chapter 7) to the living labour of the current period, Marx then considers the value of labour power and the new value produced by living labour. Marx's one sentence summary of the value of labour power is not entirely clear:

> We assumed, on the occasion of its sale, that the value of a day's labour-power was 3 shillings, and that 6 hours of labour was incorporated in that sum; and *consequently* that this amount of labour was needed to produce the worker's average daily means of subsistence.[121]

The logic of this ambiguous passage seems to be that the labour power was purchased for 3 shillings, which is taken as given, and it takes 6 hours to produce 3 shillings worth of gold (also taken as given), from which Marx deduces ('consequently') that the 'labour needed to produce the worker's average daily means of subsistence' is 6 hours (similar to the determination of 'past labour' discussed above). Thus the 'labour needed to produce the worker's average daily means of subsistence' is not tied directly to the means of subsistence themselves, but is instead derived from the given money wage (i.e., the given money variable capital) and the number of hours it takes the worker to produce a quantity of new value that is equivalent to the given variable capital that was advanced. In the theory of surplus-value that follows this passage, the 'labour needed to produce the means of subsistence' does not directly determine the quantity of surplus-value. What directly determines the quantity of surplus-value is instead the actual given quantity of money variable capital (e.g., 3 shillings) and the given rate at which the worker produces new value per hour (e.g., 0.5 shillings / hour). As discussed above, these latter two given quantities determine 'necessary labour time' (i.e., the labour time necessary to produce new value equivalent to the variable capital advanced; NLT = V /m), beyond which time the worker starts to produce surplus-value. In the continuation of the paragraph just quoted, Marx first assumes that the working day is 6 hours and that 6 hours of labour produces 3 shillings of gold (at a rate of 0.5 shillings / hour). Therefore, with a working day of 6 hours, the worker produces only enough new value to replace the advanced variable capital and no surplus-value is produced ('our capitalist stares in astonishment').

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of Ricardo's treatment of fixed capital is also incorrect; his interpretations of Torrens and Malthus are more correct, although not entirely).

121 Marx 1977a, p. 297.

However, with a working day of 12 hours, the worker produces an additional 3 shillings of new value, which becomes the surplus-value of the capitalist ('all the charms of something out of nothing'). The labour time required to produce the means of subsistence plays no direct role in this determination of the quantity of surplus-value. Of course, the labour time required to produce the means of subsistence plays a substantial *indirect* role in the determination of the quantity of surplus-value, because the given variable capital is equal to the price of the means of subsistence, which depends mainly (but not entirely) on the labour time required to produce the means of subsistence. However, the labour time required to produce the means of subsistence is *not the only determinant* of the price of the means of subsistence; this price, like all prices of individual commodities or subsets of individual commodities like the means of subsistence, also depends on the equalisation of profit rates across industries, which cannot be explained in Volume I at the level of abstraction of capital in general. Therefore, in the Volume I theory of surplus-value, the actual variable capital is taken as given and is subtracted from the new value produced in order to determine the actual quantity of surplus-value produced.

5.3 *Partial Explanation of the Given Constant Capital and Variable Capital*

In addition to taking constant capital and variable capital as given in the determination of value and surplus-value, Volume I also provides a partial explanation of the given constant capital and variable capital, in terms of the prices of the means of production and means of subsistence. This partial explanation is clearest in the case of variable capital.

Variable capital is exchanged for labour power, and therefore is identically equal to the price of labour power. Marx assumes that the price of labour power is equal to the (long-run equilibrium) price of the average quantity of means of subsistence ($V = P_{ms}$), with this quantity of means of subsistence taken as given. In Volume I, Marx assumed as a first approximation that the (long-run equilibrium) prices of commodities are proportional the labour time required to produce them: ($P_{ms} = m\,L_{ms}$) (this is the only assumption consistent with the macro labour theory of value in Volume I). Under this assumption, $V = P_{ms} = m\,L_{ms}$ (i.e., V is proportional to L_{ms}). For example, Marx stated in Chapter 6:

> Suppose that [the] mass of commodities required for the average day contains 6 hours of social labour … This quantity of labour forms the value of a day's labour-power … If half of a day of average social labour is present

> in 3 shillings, then 3 shillings is the price corresponding to the value of a
> day's labour-power ... and ... the owner of money ... pays this value.[122]

However, this equality $V = P_{ms} = m L_{ms}$ is not exactly true; it is only a first
approximation, and should be written as $V = P_{ms} \approx m L_{ms}$. L_{ms} is the *main*
determinant of P_{ms} and V, but not the *only* determinant; P_{ms} and V also depend
on the general rate of profit (i.e., $V = P_{ms} = f (L_{ms}, r)$). But the general rate of
profit cannot be explained in Volume I. So L_{ms} is only a partial explanation of
the given P_{ms} and the given variable capital.

Nonetheless, this explanation of the given variable capital as depending
primarily on L_{ms} is very important in Marx's theory. It shows how the labour the-
ory of value can explain the 'price of labour', by distinguishing between labour
and labour power, which was a significant theoretical advance over the clas-
sical economists who were trapped in the absurdity of 'the quantity of labour
required to produce labour'. It also enabled Marx's theory to explain surplus-
value and exploitation as the difference between the total working day and the
labour time necessary to sustain the worker, and also to explain the important
effects of a change of L_{ms} on V and S and the rate of surplus-value (i.e., Marx's
theory of relative surplus-value). These conclusions do not require the provi-
sional Volume I assumption that variable capital is proportional to the labour
time required to produce means of subsistence; the same general conclusions
follow even without the strict proportionality.

The standard interpretation of this passage in Chapter 6 and others similar
to it is that these passages are evidence that Marx assumed in Volume I that
the magnitude of variable capital is *determined solely* by this equality ($V = m L_{ms}$), i.e., that variable capital is proportional to L_{ms}. I agree that these passages
in isolation could be interpreted in that way. However, I also argue that the
standard interpretation of these passages ignores and is contradicted by all the
textual evidence presented in this chapter – that the *circuit of money capital*
is the analytical framework of Marx's theory, and the circuit of money capital
begins with an independently existing quantity of money capital (M) (one
component of which is variable capital) which is 'thrown into circulation' in
order to make more money; the many passages that state explicitly that this
initial M is '*presupposed*' in the determination of M′ and ΔM; the fact that the
inputs to capitalist production and the valorisation process are *commodities
with already existing prices* (and thus the labour time required to produce these
commodities have already been expressed in the form of 'general social labour',

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122   Marx 1977a, p. 276.

i.e., as money); and finally that *the cost price is the same* in the determination of both values and prices of production. All this important textual evidence suggests that variable capital is *taken as given* in Marx's theory of M′ and ΔM, as the actual money capital advanced to purchase labour power at the beginning of the circuit of money capital. It is this actual quantity of variable capital (not a hypothetical quantity proportional to L_{ms}) that is subtracted from the actual new value produced in order to determine the total actual surplus-value in Volume I.

Furthermore, I argue that the above passage from Chapter 6 (and other similar passages) can be interpreted in an alternative way, and in a way that is consistent with all the rest of this textual evidence. As discussed above, these passages provide a *partial explanation* of the given actual variable capital in Volume I – that this actual variable capital depends mainly (but not entirely) on the labour time required to produce means of subsistence. However, the crucial point is that this provisional assumption *does not solely determine* the magnitude of variable capital that is subtracted from the new value produced in order to determine the magnitude of surplus-value; instead, the magnitude of variable capital is *taken as given*, as the *actual* money capital advanced to purchase labour power in the first phase of the circuit of capital, and this actual variable capital is subtracted from the actual new value produced to determine the actual surplus-value produced. Therefore, this 'monetary' interpretation, unlike the standard interpretation, is consistent with *both* sides of the textual evidence – both with passages like the one from Chapter 6 and also with all the other textual evidence discussed above.

A similar argument could be made about constant capital. There are some passages in Volume I, when viewed in isolation, that could be interpreted to mean that the magnitude of constant capital is determined solely by and is proportional to the labour time required to produce the means of production ($C = P_{mp} = m\ L_{mp}$). However, again this interpretation ignores and is contradicted by all the other textual evidence presented in this chapter. I argue that the purpose of Marx's provisional assumption that constant capital is equal to the value of the means of production is *not to determine* exactly the magnitude of constant capital, but rather to provide a provisional explanation of the actual quantity of constant capital advanced to purchase means of production in the real capitalist economy (because a full explanation is not yet possible). This actual quantity of constant capital is taken as given and becomes the first component of the value of commodities produced by capital (i.e., this actual quantity of constant capital is transferred directly to ('re-appears' in) the value of commodities produced by capital). This provisional assumption in Volume I allowed Marx to analyse the trend in the composition of capital (the ratio of

constant capital to variable capital) and the effect of technological change on the composition of capital.

I acknowledge that Marx's exposition of this key point in Volume I of *Capital* is ambiguous. For the sake of simplicity, Marx omitted from the final published versions of Volume I the 'methodological remarks' of earlier drafts and the complications of analysing 'commodities as products of capital'. In his numerical examples, he sometimes seems to be presenting a simple labour theory of value, in which the magnitudes of constant capital and variable capital are assumed to be determined solely by the labour times required to produce means of production and means of subsistence, rather than taken as given actual quantities of money capital advanced. But I don't think Marx changed his mind about this key methodological point – taking constant capital and variable capital as given, as actual quantities, in order to determine the actual total value and the actual total surplus-value – between 1865 and 1867. Marx simplified the exposition, and one can understand why, but it has resulted in ambiguity and confusion ever since. The labour theory of value in Marx's theory of capitalism is not a simple labour theory of value; it is a more complicated labour theory of value for commodities *produced by capital*, especially with respect to the constant capital ('transferred value') component of the value of commodities (produced by capital).

5.4   *Key Footnote in Chapter 5*

An important clue to Marx's logical method in Volume I is a long footnote at the end of Chapter 5. In the final paragraph of this chapter, Marx posed the central question of his theory in clear (and humorous) terms, and issued the following well-known challenge to himself and all others:

> The **transformation of money into capital** [Marx's main question] has to be developed on the basis of the immanent laws of the exchange of equivalents. The **money-owner**, who is yet only a capitalist in larval form, must buy commodities at their value, sell them at their value, and yet at the end of the process withdraw more value from circulation than he threw into it in the beginning. His emergence as a butterfly must, and yet must not, take place in the sphere of circulation. *Hic Rhodus, hic salta!*[123]

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123   Marx 1977a, p. 269.

In the footnote to this passage, Marx clarifies the meaning of these important sentences:

> The reader will see from the foregoing discussion that the meaning of this statement is only as follows: the ***formation of capital*** must be possible even though the price and the value of a commodity be the same, for it cannot be explained by referring to any divergence between price and value. The continual oscillations in prices, their rise and fall, compensate each other, cancel each other out, and carry out their own reduction to an *average price* which is their internal regulator. This average price is the guiding light of the merchant or the manufacturer in every undertaking of a lengthy nature ... If therefore, he [the reader] were at all interested in disinterested thinking, he would formulate the problem of the formation of capital as follows: How can we account for the ***origin of capital*** on the assumption that ***prices are regulated by average prices***, i.e. ultimately by the value of the commodities? I say 'ultimately' because ***average prices do not directly coincide with the values of commodities***, as Adam Smith, Ricardo, and others believe.[124]

We can see from this footnote that Marx's theory in Volume I is about the 'formation of capital' (i.e., the production of surplus-value), and that this theory assumes that commodities exchange at their actual 'average prices', which are the 'guiding light' of capitalists in making investment decisions. In Volume I, it is provisionally assumed that these actual average prices are equal to their values (the only assumption that is consistent with the labour theory of value at the macro level of abstraction of capital in general), but in Volume III it will be seen that these actual average prices 'do not directly coincide' with their values. Marx does not say so here, but this point applies especially to the prices of the *inputs* of means of production and labour power. As we have seen, Volume I is mainly about the total economy and the total surplus-value, and individual commodities are not really considered, except as a representative of the total commodity product. The necessary exception to this general rule are the inputs of means of production and labour power, which are purchased at the beginning of the process of the 'formation of capital', and whose prices must therefore be taken into consideration. The means of production and means of subsistence are subsets of the total commodity product, and hence their average prices will in general not be equal to their values. This footnote

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124   Ibid.

at the end of Chapter 5 clarifies for us that Marx's theory of surplus-value in Volume I is in terms of the actual *average prices* of the means of production and means of subsistence, which are not equal to their values, even though the divergences cannot yet be explained. It is provisionally assumed in Volume I that the average price of the means of production and means of subsistence are equal to their value, but this assumption is not exactly true ('do not directly coincide'). This simplification does not affect the main conclusions of Volume I. A more complete explanation is provided in Volume III.

In my view, in order to be clearer and more rigorous on this important point, Marx should have at least included in Chapter 7 a footnote similar to the one in Chapter 5, which would say something like the following: Constant capital and variable capital are the actual quantities of money capital advanced and consumed in the real capitalist economy, and these actual quantities of money capital are taken as given in the theory of value and surplus-value in Volume I. These actual quantities of constant capital and variable capital are equal to the actual *average prices* of the means of production and means of subsistence, and in Volume I it is assumed that these average prices are equal to their respective values, and hence that the actual constant capital and variable capital are equal to the value of the means of production and means of subsistence. However, this partial explanation is not exactly true; the actual average prices of individual commodities, including means of production and means of subsistence, are in general not equal to their values, but are instead equal to their prices of production. However, this lack of equality between average prices and values does not affect the main conclusion of Volume I concerning the actual total quantity of surplus-value produced in the economy as a whole. This actual total surplus-value is determined by the difference between the actual new value produced by labour and the actual variable capital advanced to purchase labour power, even though the actual variable capital is equal to the prices of production of the means of subsistence, not their values. An explanation of prices of production and a more complete explanation of the actual constant capital and the actual variable capital will be given in Volume III.

We have seen above that in Volume III (Marx's *Manuscript of 1864–65*) Marx did indeed provide a more complete explanation of the given actual quantities of constant capital and variable capital, as equal to the prices of production of the means of production and means of subsistence. However, this more complete explanation of the actual constant capital and variable capital *does not change their actual given magnitudes*; 'k is the same' in the determination of both values and prices of production: value = k + s and price of production = k + p'.

6   Volume II of *Capital* (1870s)

After Volume I was published, Marx worked mainly on Volume II of *Capital* in the 1870s (he also worked some on Volume III, mainly on many algebraic variations of the relation between the rate of surplus-value and the rate of profit, the subject of what later would become Chapter 3 of Volume III). Volume II is of course mainly about the *turnover time of capital*, the concepts of fixed and circulating capital, and the reproduction schemes. Marx continued to assume in Volume II, as a first approximation, that the prices of individual commodities are equal to their values (because this is still the only assumption that is consistent with the macroeconomic labour theory of value at the level of abstraction of capital in general presented thus far), but the main conclusions of Volume II do not depend on the exact equality between prices and values.

Since Volume 2 is not about the theory of the production of surplus-value, nor the theory of the distribution of surplus-value and prices of production, it is not directly relevant for our subject.[125] However, Marx's discussion of the turnover time of capital and fixed and circulating capital certainly supports the 'monetary' interpretation of the initial givens in Marx's theory presented here. The turnover time of capital is defined as the length of time between the *advance* of money capital (M) and the *recovery* of more money capital (M′ and ΔM). This concept of the turnover time of capital obviously implies that the initial money capital M *exists* at the time it is advanced, and as a *definite quantity*. It is this previously existing advanced M that is taken as given in Marx's theory of M′ and ΔM, as well as in his analysis of turnover time.

With respect to fixed capital, Marx's method of determining the annual depreciation cost is to take the total fixed capital advanced as given and to divide this given fixed capital by the expected lifetimes of the machines and buildings, etc. that were purchased with this fixed capital. Thus this method of determining depreciation is further clear evidence that constant capital is taken as given in Marx's theory of value.

With respect to variable capital, Marx states clearly that the variable capital that is advanced to purchase labour power is *taken as given*. Marx comments that the '*characteristic feature*' of variable capital is that a *given fixed* quantity of money is exchanged for a 'value-creating power', which produces more value (a greater quantity of money value) than the given fixed quantity with which it is purchased. And a crucial point is that Marx states that it is '*immaterial*' whether

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125   The turnover time of capital affects the magnitude of advanced capital and thus indirectly affects the general rate of profit and the distribution of surplus-value.

or not the given quantity of variable capital is equal to the value of labour power (or the value of the means of subsistence). What matters is the actual given variable capital, which is the quantity that is subtracted from the new value created by this labour power in order to determine the actual surplus-value produced:

> The **characteristic feature** of variable capital is that a **definite, given** (i.e. in this sense constant) part of capital, a *given* sum of value (assumed to be equal to the value of the labour-power, although **it is immaterial here whether the wage is the same as, or more or less than, the value of the labour-power**), is exchanged for a force that valorises itself and creates value – labour-power, which not only reproduces the value paid to it by the capitalist, but also produces a surplus-value, a value that **did not previously exist** and is not bought with an equivalent.[126]

This passage is reminiscent of a passage in Chapter 12 of Volume III discussed above, which states that the 'important thing as far as the determination of surplus-value is concerned' is not whether or not constant capital and variable capital are equal to values, but what their actual magnitudes are. Marx repeats essentially the same sentence two pages later:

> The **essential feature** of the definition of variable capital – and hence of the transformation of any sum of values at all into capital – is that it exchanges a **definite, given** (and in this sense constant) value for value-creating power; a [given] magnitude of value for the production of value, for self-valorisation.[127]

Clearly, Marx should have discussed this crucial point about variable capital more extensively, especially in Volume I. Nonetheless, these passages are clear evidence that this continued to be Marx's assumption with respect to variable capital at this late stage of his life – for the determination of surplus-value, it doesn't matter whether or not variable capital is equal to the value of the means of subsistence; what matters is the actual variable capital and its relation to the actual new value produced.

The same point also applies to constant capital. It is 'immaterial' whether or not the actual constant capital is equal to the value of the means of production.

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126   Marx 1981, pp. 295–6.
127   Marx 1981, p. 297.

What matters is the actual constant capital, which is the quantity that is transferred to the value of the output and becomes the first component of the value of the output. In the first passage quoted above, Marx emphasised that variable capital is exchanged for labour power which creates value that *did not previously exist*. This is in contrast to constant capital, the other component of the value of commodities, which *did previously exist*, prior to the current period. The previously existing constant capital is taken as given as a cost and is transferred as a component to the value of the output. This is what Marx called the 'dual significance' of constant capital (in Chapter 1 of Volume III, discussed above in Section 4.1 of this chapter).

Further evidence to support this 'monetary interpretation' of the initial givens in Marx's theory is also provided by the reproduction schemes in Part 3 of Volume II. I have written elsewhere that the main purpose of Marx's reproduction schemes was to criticise what he called 'Smith's dogma', according to which the total price of commodities is resolved into wages plus profit plus rent, with no component for constant capital or the price of the consumed means of production.[128] Marx argued that Smith's assertion could not possibly be true, because, if it were true, capitalists would not be able to recover the constant capital advanced and consumed in production, and thus would not be able to repurchase the consumed means of production and continue production. The point to emphasise for our purposes is Marx's focus on the question: *how is the advanced constant capital recovered*? Marx's answer to this question is that the advanced constant capital is taken as given and this given magnitude is transferred (re-appears) to the price of the output, and thus is recovered as one component of the price of the output. The relevant point here is that this entire analysis assumes that the constant capital advanced is a *given magnitude*, and the question is: how is this given magnitude recovered through the sale of the output?[129]

Conclusion

To sum up this long discussion: The textual evidence related to Marx's method of determination of constant capital and variable capital presented in this

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128   Moseley 1998.

129   A widespread misinterpretation of Marx's reproduction schemes is that they are similar to Leontieff's and Sraffa's input-output matrix. To the contrary, the key variables in Marx's reproduction schemes (constant capital, variable capital, and surplus-value) are *quantities of money capital*, not physical quantities of inputs and outputs.

chapter is not as clear-cut and unambiguous as the evidence presented in Chapter 3 on the 'two levels of abstraction' and the prior determination of the total surplus-value, although I think that the entire body of evidence favours the 'monetary' interpretation presented here. The circuit of money capital by itself is strong evidence that the initial givens in Marx's theory is the quantity of money capital that is advanced at the beginning of this circuit. The circuit of money capital starts with money, and starts in the sphere of circulation with the advance of money capital, and the main goal of Marx's theory is to explain how this initial quantity of money capital becomes a bigger quantity of money capital (ΔM). For this all-important question, the appropriate given is the initial money capital M advanced.

In addition, there are many passages in all the drafts of *Capital* in which Marx stated explicitly that the initial M in the circuit of money capital is 'given' or 'presupposed'. For example, in the *Theories of Surplus-Value* and in the *Grundrisse*, Marx stated that the 'all-embracing and decisive factor' of capitalist production is the quantitative relation between the initial money capital that is *presupposed* to production (M) and the greater quantity of money capital that results from production (M + ΔM). Marx's theory is intended, above all else, to explain this all-embracing and decisive factor. And in order to explain the greater quantity of money capital that results from capitalist production (the ΔM) Marx's theory presupposes the initial money capital (the M) at the beginning of the circuit. In other passages, Marx states clearly and repeatedly that the *point of departure* for his theory of the production of surplus-value is a *given quantity of money* that must be increased in order to function as capital (e.g., in the 'Results'). In the beginning of this process, capital exists only as a given quantity of money in which 'all use-values are extinguished' (i.e., no physical quantities of means of production or means of subsistence), and 'nothing but the money form remains'. 'Our task', Marx said, is to explain how the given pre-existing money capital M becomes more money M + ΔM at the end of the process.

Another set of textual evidence that supports the monetary interpretation presented here has to do with the concept of *cost price* (the sum of consumed constant capital and variable capital). In Chapter 9 of Volume III, Marx assumed and stated the point repeatedly that the *cost price is the same* in the determination of both values and prices of production (especially clearly in the 'missing paragraph' which unfortunately Engels left out of his edited version of Volume III). The only difference between value and price of production is between the surplus-value produced in a given industry and the average profit collected in that industry. Therefore, the cost price is not supposed to be transformed from values to prices of production. And the single cost price is the

actual cost price, which is equal to the price of production of the inputs, not the value of the inputs.

In other passages, Marx distinguished between the value of 'simple commodities' and the value of 'commodities as products of capital'. The main difference has to do with the 'transferred value' component of the value of commodities. The 'transferred value' component of the value of commodities produced by capital is the *actual constant capital* advanced to purchase the means of production (P = C + N), which is equal to the *price of production* of the means of production, and which in general is not proportional to the labour time required to produce the means of production. The means of production are purchased with constant capital, and thus the labour time required to produce the means of production has already been represented as this quantity of money constant capital (even if somewhat misrepresented; i.e., not proportional), and it is this quantity of already existing money capital advanced that becomes the first component of the value of commodities produced by capital. This previously existing money constant capital is taken as given and transferred directly to the value of commodities produced by capital, as a quantity of money capital.

On the other hand, there are also some passages in *Capital* that, when viewed in isolation, could be interpreted to provide contrary evidence, i.e., to mean that the quantities of constant capital and variable capital in Volume I are *determined solely* by the labour times required to produce the means of production and means of subsistence (i.e., are proportional to these labour times), and these quantities must be changed in Volume III into the actual prices of production of these inputs (as in the standard interpretation). However, the standard interpretation of these passages is contradicted by all the other textual evidence presented in this chapter and summarised in the preceding paragraphs – the circuit of money capital begins with M, 'M presupposed', 'the cost price is the same', 'commodities as products of capital', etc. The standard interpretation of these passages also means that constant capital and variable capital in Volume I are *hypothetical* quantities in a hypothetical 'value economy', instead of actual quantities of money capital in the actual capitalist economy. Furthermore, the standard interpretation of the determination of constant capital and variable capital also contradicts Marx's method of the production and distribution of surplus-value and the prior determination of the total surplus-value. If constant capital and variable capital are hypothetical quantities in Volume I that must be transformed into actual quantities in Volume III, then the total surplus-value and the 'value rate of profit' determined in Volume I are also hypothetical quantities, which also must be transformed into the actual total profit and the price rate of profit in Volume III, and thus cannot be taken as given in Marx's theory of the distribution of surplus-value and prices of pro-

duction in Volume III. In general, the standard interpretation of these passages and the determination of constant capital and variable capital makes Marx's theory *logically contradictory*, and implies that Marx made fundamental logical mistakes in his theory of prices of production.

In contrast to the standard interpretation, I have argued that the controversial passages could also be interpreted in another way, and in a way that is consistent with all the other textual evidence presented in this chapter – that the actual quantities of constant capital and variable capital are taken as given in the theory of surplus-value in Volume I, and these controversial passages present a provisional, partial explanation of these given actual quantities of money capital (that they depend primarily, but not entirely, on the values of the means of production and means of subsistence). This partial explanation is supplemented in Volume III, in which it is shown that the given actual quantities of constant capital and variable are equal to the prices of production of the means of production and means of subsistence, not their values. However, this more complete explanation of these given actual quantities in Volume III *does not change the quantities themselves*; what changes in Volume III is the *explanation* of these given actual quantities – from a partial explanation to a more complete one. Thus, 'the cost price is the same' in the determination of both value and prices of production, and Marx did not 'fail' to change the magnitude of the cost price, because no such change of magnitude is necessary or appropriate in his theory. The 'monetary' interpretation of these controversial passages is also consistent with Marx's basic premise of the prior determination of the total surplus-value, discussed in Chapter 3. If one assumes the 'monetary' interpretation of the initial givens, then it is possible to determine the total surplus-value prior to its division into individual parts. In general, the 'monetary' interpretation of the initial givens in Marx's theory presented in this book makes it possible to understand Marx's theory as a *logically consistent whole*.

It is a widely accepted principle in the field of hermeneutics (the study and interpretation of texts) that, when the textual evidence for different interpretations of a text is ambiguous and not clear-cut and decisive one way or the other, then the preferred interpretation is the one that *makes the text as a whole more internally logically consistent*. For example:

> The claim that literary hermeneutics has made from at least the time of Schleiermacher is that the adequacy of a given textual interpretation depends on the extent to which it can show the text's coherence as a **unified whole**.[130]

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130   Warnke 1993, p. 21; cited in Kliman 2007, pp. 61–2; see also Bleicher 1980, Chapter 1.

I suggest that this principle should be applied to these different interpretations of these controversial passages and the initial givens in Marx's theory. The preferred interpretation is the one that makes Marx's theory more of a logically consistent whole, and that interpretation is the monetary interpretation presented here. Why continue to insist on the standard interpretation of these passages and the initial givens in Marx's theory, which results in logical contradictions, when there is an alternative interpretation, with substantial textual support, that does not have these contradictions?

Money Has No Price: Marx's Theory of Money and the Transformation Problem

> Gold is a commodity like all other commodities, and at the same time, it is not a commodity like all other commodities.[1]

> Money has no price.[2]

> One part of society's surplus-value thus consists of gold ... from the start.[3]

Another important aspect of the 'transformation problem' that has not yet been discussed in this book is the role of money in the transformation of values into prices of production. This important aspect will be discussed in the present chapter. Bortkiewicz and Sweezy will be considered in this chapter as representatives of the standard interpretation of the role of money in the transformation problem (with the former the originator of the standard interpretation).[4] According to the Bortkiewicz-Sweezy interpretation, the money commodity (e.g., gold) is treated as essentially the same as all other commodities. In the first place, it is assumed that the money-commodity has a value-price (i.e., price proportional to labour time) and also has a price of production, which is in general different from its value-price, just like all other commodities. Secondly, it is assumed that the rate of profit is equalised in the gold industry in the same way as all other industries – by a redistribution of surplus-value in or out of the gold industry, depending on the composition of capital in the gold industry compared to the average composition of capital for the economy as a whole. Finally, it is argued that, as a result of this redistribution of surplus-value between the gold industry and all other industries in order to equalise the rate of profit in the gold industry, the 'value of money' changes and thus the total prices of production of all commodities will be different from the total value-prices of all commodities. It is argued that Marx failed to take into account this equalisation of the profit rate in the gold industry, and the divergence of the price of

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1 Marx 1973, p. 151.
2 Marx 1977a, p. 189.
3 Marx 1981, p. 410.
4 Bortkiewicz 1906,1907; Sweezy 1942.

production of gold from its value-price, and the change in the total price that supposedly results from this equalisation of the profit rate in the gold industry. This is considered by critics to be another important 'mistake' of Marx's theory of prices of production.

I argue that this standard interpretation of the transformation is mistaken on all three of these important points. I contend that the money commodity has *neither a value-price nor a price of production*, so that a transformation of the former into the latter is not possible. Further, I maintain that *surplus-value cannot be redistributed* in or out of the gold industry, because surplus-value in the gold industry is a definite quantity of gold, without a value-price or price of production, and thus the profit received in the gold industry is always identically equal to the surplus-value produced in the gold industry; it could not be otherwise. Finally, since there is no redistribution of surplus-value in or out of the gold industry, the price of production of all other commodities cannot be affected by a redistribution that does not exist, and thus the total price of all other commodities is always *identically equal* to their total value-price, as Marx concluded, no matter what the composition of capital in the gold industry. I argue that Bortkiewicz and Sweezy misunderstand so thoroughly the role of money in the transformation process because they paid no attention to Marx's general theory of money, presented in Part 1 of Volume I of *Capital*.

The first section of this chapter presents my interpretation of the role of money in Marx's theory in general and in the transformation problem specifically, and then the second section critically examines the Bortkiewicz-Sweezy interpretation of Marx's theory of money and the transformation problem. The third and fourth sections discuss the implications of the transformation problem for the MELT (the monetary expression of labour time) and the implications of non-commodity money for the transformation problem.

1   Marx's Basic Theory of Money and the Transformation Problem

Part 1 of Volume I is usually thought of as the part of *Capital* in which abstract labour is derived as the 'substance of value' that determines the exchange values of commodities. However, this derivation, as important as it is, is only the beginning of Part 1 – it is accomplished in the first ten pages. The rest of Part 1 – the remaining one hundred pages – is about *money*, and presents Marx's basic theory of money. Section 3 of Chapter 1 (the most important basic theory) derives the necessity of money in a commodity-producing economy as the 'necessary form of appearance' of the abstract labour contained in commodities (as derived in Section 1). Chapter 2 discusses the actual emergence of money

out of the historical process of circulation. Chapter 3 discusses the main functions that money performs as part of the circulation of commodities: *measure of value* (the socially accepted objective measure of the abstract labour contained in commodities), *means of circulation* (the means by which commodity owners exchange their commodities for other commodities), and *money* itself (hoards, means of payments for debts, and 'world money' or international reserves).[5]

This basic theory of money, and especially the crucial role of money as the measure of value, is entirely ignored by Bortkiewitz and Sweezy. In other words, Bortkiewitz and Sweezy attempt to interpret the role of money in the determination of prices of production in Volume III without having first considered Marx's basic theory of money in Volume I. This omission is bound to lead to mistakes, and it does, as we shall see below.[6]

1.1   *Money Has No Price Nor a Price of Production*

An important conclusion of Marx's theory of money in Part 1 of Volume III, devoted to the role of money in the theory of prices of production, is that the money commodity (e.g., gold) itself *has no price*.[7] According to Marx's theory in Part 1, the *price* of a given commodity is a *quantity of gold*, which functions as the objective measure of the 'substance' of the value of the commodity (i.e., the abstract labour time required to produce the commodity). It follows from this concept of price that gold itself *cannot have a price*, because the quantity of abstract labour time contained in gold cannot be objectively measured by gold itself; an objective measure of the value of gold requires some *other* commodity as the equivalent commodity. Marx emphasised from the very beginning of his theory of money (in the discussion of the 'simple form of value' in Section 3 of Chapter 1) that the commodity whose value is being expressed (the 'relative form') and the commodity which serves as the measure of value (the 'equivalent

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5   The centrality of money in Marx's theory is in striking contrast to Sraffa's theory, in which money plays no essential role. Sraffa presents no theory of the necessity, the role, and the functions of money in a commodity economy. Indeed, the word 'money' does not appear in the index, and I was not able find it anywhere in the book. In Chapter 1, Sraffa introduces 'prices' without mentioning money, and he does not specify the units in which these 'prices' are measured. Sraffa is not interested in absolute prices, because his theory does not determine absolute prices, but only relative prices, in which the unit of measure of prices is cancelled out. But in the real world, absolute prices matter, and in particular ΔM, the absolute amount of surplus-value and the most important feature of capitalist economies.

6   Suzanne de Brunhoff 1973, pp. 69–71, has also criticised Sweezy for his failure to consider Marx's basic theory of money in his interpretation of Marx's theory prices of production.

7   Williams 1975, p. 23 and Yaffe 1976, p. 35, also emphasise this point.

form') perform 'mutually exclusive' functions, i.e., a commodity cannot serve as the objective measure of its own value. In other words, the money commodity cannot have a price.

> The same commodity cannot, therefore, simultaneously appear in both forms in the same expression of value. These forms rather *exclude each other as polar opposites*.[8]

And elsewhere:

> [*M*]*oney has no price*. In order to form a part of this relative form of value of the other commodities, it would have to be brought into relation with itself as its own equivalent.[9]

> Gold has neither a *fixed* price *nor any* price at all, when it is a factor in the determination of prices and therefore functions as money of account. In order to have a price, in other words to be expressed in terms of a *specific* commodity functioning as the *universal* equivalent, this other commodity would have to play the same exclusive role in the process of circulation as gold. But two commodities which exclude all other commodities would exclude each other as well.[10]

> The *price* of the commodity which serves as a measure of value and hence as money, *does not exist at all*, because otherwise, apart from the commodity which serves as money I would need a second commodity to serve as money – double measure of value ... **There can therefore be no talk of a rise or fall in the price of money**.[11]

Since gold does not have a value-price nor a price of production, it follows that it is not possible to transform the non-existent value-price of gold into its non-existent price of production.[12]

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8   Marx 1977a, p. 140.
9   Marx 1977a, p. 189.
10   Marx 1970, p. 75.
11   Marx TSV, v. II, p. 201.
12   In Chapter 3 of Volume I, pp. 191–2, Marx introduces *currency money*, which has a fixed exchange rate with gold that is set by the government, and prices are in terms of currency money. This fixed currency rate is irrelevant to the transformation of values into prices of production, since it affects all prices proportionally. Therefore, in order to simplify

1.2   *The Circuit of Capital and the Value-Product in the Gold Industry*

Because gold has no price, the circuit of capital is different in the gold industry from all other industries. The value-product of the gold industry is not a commodity with a price, but rather a *definite quantity of gold itself*, the actual quantity of gold produced. Gold is not like all other commodities, which have to be sold in order to be converted into money. Instead, gold is *already money*, as a result of the production process itself, prior to circulation. Therefore, the circuit of capital in the gold industry is represented by the following unique and abbreviated formula:[13]

$$\mathbf{M} - \mathbf{C} \dots \mathbf{P} \dots \mathbf{M'}.$$

Notice that the third phase of the circuit of capital in the gold industry is simply **M′**, a quantity of gold, instead of the usual **C′ – M′**. The price of the commodity product (**C′**) is missing, because gold has no price. The product of gold production is a definite quantity of money itself, not a commodity with a price that has to be converted into money. Marx discussed this unique form of the circuit of capital in the gold industry in the following passages from Volume II of *Capital*. The reader is asked to please read these important passages carefully.

> The formula for the production of gold, for example, would be **M – C ... P ... M′**, where **M′** figures as the commodity product in so far as *P provides more gold than was advanced for the elements of production of gold in the first M*, the money capital.[14]

> Let us firstly consider the circuit of turnover of the capital invested in the production of precious metals in the form **M – C ... P ... M′** ... Let us start by considering only the circulating part of the capital advanced as **M**, the starting-point of **M – C ... P ... M′**. In this case *a certain sum of money is advanced* and cast into circulation in payment for labour power and in order to purchase materials of production. The money is not withdrawn

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and focus on the key factors that do play a role in the transformation and which are controversial, I will ignore currency money and currency prices, and assume that prices are in units of gold. The key issue is what happens to these fundamental gold prices as a result of the transformation of values into prices of production.

13   Howell 1975, p. 53, also emphasises this unique form of the circuit of capital in the gold industry.

14   Marx 1981, p. 131.

again from circulation by the circuit of *this* capital, and then cast in afresh. The **product in its natural form is already money**, it does not need to be first transformed into money by exchange, by a process of circulation. It moves from the production process into the circulation sphere not in the form of commodity capital that has to be transformed back into money capital, but rather as money capital that has to be transformed back into productive capital, i.e. has to buy new labour power and materials of production. The **money form of the circulating capital**, that consumed in labour power and means of production, **is replaced not by the sale of the product, but rather by the natural form of the product itself**, i.e. not by withdrawing its value again from circulation in the money form, but rather by adding money newly produced.[15]

Since the value-product of the gold industry is a definite quantity of gold (M') produced, it follows that this definite quantity of gold *cannot change* as a result of the distribution of surplus-value and the transformation of value-prices into prices of production in Volume III.

1.3   *Surplus-Value in the Gold Industry*

Just like the value-product of the gold industry is a definite quantity of gold, which cannot change as a result of the distribution of surplus-value, so also is the surplus-value in the gold industry a *definite quantity of surplus gold* that cannot change as a result of the distribution of surplus-value. The surplus-value produced in the gold industry (S_G) during a given period is ΔM_G, i.e., the difference between the quantity of gold produced (M'_G) in that period and the initial quantity of money capital advanced (M_G) to purchase means of production and labour power in the first phase of the circuit of capital in the gold industry. Algebraically:

(1) $S_G = \Delta M_G = M'_G - M_G.$ [all in quantities of gold]

We have already seen that the value-product of the gold industry is not a commodity with a price, but is rather a definite quantity of gold produced (M'_G). This quantity of gold output is *taken as given*, as the *actual* (equilibrium) quantity of gold produced in the gold industry during a given period of time. Similarly, the initial money capital (M_G) is also *taken as given*, as the *actual* (equilibrium) quantity of money capital advanced to purchase means of pro-

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15   Marx 1981, pp. 401–2.

duction and labour power in the gold industry. This latter assumption is of course consistent with my general interpretation of Marx's method of determination of the initial money capital (constant capital and variable capital) in all industries in Marx's theory of surplus-value in Volume I presented in previous chapters. Since the value-product of the gold industry ($\mathbf{M'_G}$) is the actual quantity of gold produced, and the initial money capital ($\mathbf{M_G}$) is the actual quantity of money capital advanced in the gold industry, it follows that surplus-value in the gold industry ($\mathbf{S_G} = \mathbf{\Delta M_G}$) is the difference between these two actual quantities of gold, i.e., is equal to the *actual surplus gold* produced, over and above the actual initial money capital advanced. As Marx put it in the passage quoted in the previous section: '$\mathbf{P}$ provides *more gold* than was advanced for the elements of production in the first $\mathbf{M}$, the money capital.'[16] Unlike all other industries, the surplus-value in the gold industry does not consist of one component of the price of the output (since gold has no price), but instead consists of a part of the physical output produced, a definite quantity of surplus gold 'from the start', i.e., as the direct result of the production process itself, prior to circulation.[17] Marx also states this important point in the following passages:

> ***The gold-producing capitalists possess their entire product in gold***, including the part of it which replaces constant capital, the part which replaces variable capital, and the part which consists of surplus-value. ***One part of the society's surplus-value thus consists of gold***, and not of products that are turned into money only in the course of circulation. ***It consists of gold from the start*** and is cast into the circulation sphere in order to withdraw products from this.[18]

> [In the gold or silver industry], *surplus-value is directly in gold* or silver as a surplus of gold or silver.[19]

> ***The production of gold and silver is distinguished from all other branches of production*** by the fact that here, rather than comparing the value of the product with the value of the outlay, we must compare the money value of the outlay, the ***expenses monetarily expressed***, with the total amount of the product. The outlay, £100, = a ***certain mass of gold***. Its price of £100

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16   Marx 1981, p. 131.

17   Howell 1975, p. 53, also emphasises that 'the surplus-value contained in gold appears immediately in socially recognised form.'

18   Marx 1981, p. 410.

19   Marx MECW, v. 33, p. 193.

is merely the expression in the language of money of account of the fact that the outlay = a certain quantity of gold. Hence if the product is 130, i.e. if it contains 3/10 more gold than the outlay, the profit = 30%. *The rate of profit* (*which here includes rent*) *is determined purely by the excess of the use value obtained* (*gold*) *over the outlay* (*similarly in gold*), *expressed in the same use value* (*gold*). And this is entirely independent of the value of the gold. An equalisation of the profit can here only take place to the extent that if the rate of profit = 10% and the excess of gold = 30, this 30 may be split up into rent and profit.[20]

In these and previously quoted passages, it is clear that the initial capital in the gold industry is the actual money capital advanced, and that the surplus-value in the gold industry is the actual surplus gold produced, the difference between to total quantity of gold produced and the initial money capital invested. The initial money capital is 'a certain sum of money advanced' ('the outlay, £100 = a certain mass of gold'). Therefore, these passages about the gold industry lend additional support to my general interpretation that the initial money capital in all industries is the actual money advanced to purchase means of production and labour power, and the surplus-value in the economy as a whole is the actual total surplus-value, which is the difference between the total value price of the commodities produced and the actual money capital invested in their production.

1.4   *Profit in the Gold Industry: No Redistribution of Surplus-Value*

As we have seen, Volume III of *Capital* is about the *distribution of surplus-value*, i.e., the division of the total surplus-value produced in a given period into individual parts – first the equalisation of the profit rate across industries (Part 2), and then the further division of surplus-value into industrial profit, commercial profit, interest, and rent (Parts 4–6). The equalisation of the profit rate across industries analysed in Part 2 involves the determination of the *price of production* of commodities. The transformation of value-prices into prices of production redistributes the surplus-value produced in a given period across industries in such a way that the rates of profit in all industries are equal. The result of this redistribution of surplus-value is that the profit received in each industry is in general *not* equal to the surplus-value produced in that industry. In this way, there is a 'sharing' of surplus-value among capitalists, like 'hostile

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20   Marx MECW, v. 33, p. 191. These last two passages are from a part of the *Manuscript of 1861–63* that was published for the first time in 1991.

brothers who divide among themselves the loot of other people's labour',[21] or a form of 'capitalism communism' in which the profit received in each industry is proportional to the total capital invested in that industry, rather than equal to the surplus-value produced in that industry.[22]

However, according to Marx's theory, there is *no redistribution of surplus-value in and out of the gold industry*, because surplus-value is a definite quantity of gold and cannot be a different quantity of gold. Therefore, the profit received in the gold industry is *always identically equal* to the surplus-value produced in the gold industry. We have seen above that the surplus-value produced in the gold industry (S_G) is the actual quantity of surplus gold produced, i.e., is equal to the difference (ΔM_G) between the actual quantity of gold produced (M'_G) and the actual money capital advanced in the gold industry (M_G):

(1) $S_G = \Delta M_G = M'_G - M_G.$

Similarly, the profit received in the gold industry (Π_G) is also equal to this *same actual* surplus quantity of gold produced (ΔM_G), i.e., is equal to the same difference between the actual quantity of gold produced (M'_G) and the actual money capital advanced in the gold industry (M_G):

(2) $\Pi_G = \Delta M_G = M_G' - M_G$

Since both the value-product in the gold industry (M'_G) and the initial money capital advanced in the gold industry (M_G) are the same in both equation (1) and equation (2), it follows that the profit received in the gold industry is always identically equal to the surplus-value produced in the gold industry (i.e., $\Pi_G \equiv S_G \equiv \Delta M_G$). Thus, according to Marx's theory, there can be *no redistribution of surplus-value* between the gold industry and all other industries. The surplus-value produced in the gold industry within a given period is a definite quantity of actual surplus gold produced, which cannot change into a different quantity of profit through the redistribution of surplus-value with other industries.

1.5   *Equalisation of the Profit Rate in the Gold Industry*
The conclusion reached in the previous section – that there is no redistribution of surplus-value between the gold industry and other industries in the transformation of values into prices of production – does not imply that there cannot

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21   Marx TSV, v. II, p. 29.

22   Marx MECW, v. 43, p. 23.

be equalisation of the profit rate in the gold industry. But the process of equalisation is different in the gold industry than in other industries. Since gold is a privately-owned natural resource, its production must yield a rent for the landlords of the gold mine. Marx assumed that the composition of capital in the least productive gold mines was lower than the economy-wide average composition of capital. In this case, the rate of profit in the least productive gold mines would be greater than the average rate of profit, and the excess surplus-value would go to the owners of the gold mines as their rent.[23] This assumption of lower than average composition of capital in the gold industry was clearly valid during Marx's time in the 19th century and also appears to have been true for the 20th century.[24]

In the unlikely case of a higher than average composition of capital in the least productive gold mines, the adjustment process would be different. If the rate of profit for the least productive gold mines was not sufficient to yield an average rate of profit for the gold capitalists and a rent for gold landlords, these least productive mines would be shut down. The new 'least productive mine' would be more productive than before, and the resulting rate of profit would be higher than before. In theory, this process would continue until the rate of profit for the least productive mines was sufficient to provide the average rate of profit for the gold capitalists and also to yield rent for the gold landlords. Thus, in this unlikely case, there would still be *no sharing of surplus-value* between the gold industry and other industries; the rent collected by the gold landlords would still be produced within the gold industry. The average rate of profit plus rent would still be equal to the surplus gold produced in the gold industry. But the surplus gold produced in the least productive mines would be greater than before because of the closing of marginal mines. We will see below that Bortkiewicz and Sweezy assume that the rate of profit is equalised in the gold industry through the usual mechanism of 'sharing' surplus-value with other industries. However, we can see that such a 'sharing' of the surplus gold produced in the gold industry is not possible.

1.6   *Total Price of Production Equal to Total Value-Price*
I have argued in previous chapters that both of Marx's two aggregate equalities (total price of production = total value-price and total profit = total surplus-

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23   See Marx MECW, v. 33, p. 191 and p. 324 [Marx TSV, v. III, pp. 403–4]. Similar interpretations of Marx's theory of a higher than average rate of profit in the gold industry have been presented by Williams 1975 and Naples 1996.

24   On the South African gold mining industry, which accounted for over half of the world gold production in the 20th century, see Wilson 1972, Williams 1975, and Inness 1984, Chapter 2.

value) are always identically true by the nature of Marx's logical method. These equations are not conditional equalities, which may or may not be true, but rather follow from Marx's method of determination of the general rate of profit, the average profit, and prices of production.

This conclusion is not affected by the consideration in this chapter of the nature of money and role of money in the distribution of surplus-value across industries. Since the gold industry does not participate in the redistribution of surplus-value, the prices of production of all other commodities cannot be affected by a non-existent redistribution of surplus-value in and out of the gold industry. Hence the total price of production of all other commodities is also not affected by the transformation, and remains identically equal to the total value-price of all commodities. In other words, because there is no redistribution of surplus-value in or out of the gold industry, the exchange ratio of the total commodity product with gold does not change as a result of the transformation. This point will become clearer after the discussion of Bortkiewicz and Sweezy's interpretation of Marx's theory in the next section. Bortkiewicz and Sweezy argue that the equalisation of the profit rate in the gold industry does involve the sharing of surplus-value with other industries and thus also affects the prices of production of other commodities, such that the total price of production is *not* equal to the total value-price, contrary to Marx's conclusion. We will see that this mistaken conclusion follows from their failure to understand the unique role of money in Marx's theory.

2   Bortkiewicz and Sweezy's Misinterpretation of Money in Marx's Theory of Prices of Production

This section critically examines Bortkiewicz and Sweezy's interpretation of the role of money in the transformation problem in Marx's theory. The first point to make is that Bortkiewicz and Sweezy do not discuss at all Marx's basic theory of money and price presented in Part 1 of Volume I of *Capital*. Sweezy explicitly acknowledges that his book does not include Marx's theory of money and price:

> Price, as Marx uses the term in Volume I of *Capital*, is merely the money expression of value. As such, its analysis belongs to the theory of money, which we shall not attempt to present in this work.[25]

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25   Sweezy 1942, p. 34.

Without a clear understanding of Marx's basic theory of money, Bortkiewicz and Sweezy make fundamental mistakes in their interpretation of the role of money in Marx's theory of prices of production in Volume III. And yet, money turns out to be crucial in their criticism of Marx's theory of prices of production!

In general, Bortkiewicz and Sweezy do not understand the uniqueness of the money commodity in Marx's theory and treat the money commodity just like all other commodities. That is their fundamental mistake. It is assumed that the money commodity has both a value-price and a price of production, just like all other commodities, contrary to Marx's theory. It is also assumed that the rate of profit is equalised in the gold industry in the same way as in all other industries – by a redistribution of surplus-value in or out of the gold industry, depending on the composition of capital in the gold industry compared to the econmy-wide average composition of capital. Finally, as a result of this redistribution of surplus-value, it is concluded that the sum of prices of productin of all commodities will be different from the sum of values of all commodities. In other words, the exchange ratio of the total commodity product with gold changes as a result of the transformation. For example, Bortkiewicz and Sweezy assume that the composition of capital in the gold industry is below the average composition of capital (similar in this respect to Marx's assumption), and they argue that the prices of production of all other commodities (with a higher average composition) would be increased as a result of the equalisation of the profit rate in the gold industry, so that the total price of production of all commodities is greater than their total value-price. The following subsections discuss each of these mistakes of the Bortkiewicz-Sweezy interpretation in turn.

2.1   *Money Has a Value-Price and a Price of Production*
Bortkiewicz and Sweezy treat gold as a commodity produced in Department III, and they assume that gold has both a value-price and a price of production that equalises the rate of profit, just like all other commodities.[26] The unit of measurement of the value-price of gold is a definite quantity of gold (e.g., an oz. of gold), just like the value price of all other commodities. Thus, the value-price of 20 ounces of gold is 20 ounces of gold! But from the point of view of Marx's theory, this makes no sense. The price of gold cannot be a quantity

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26   Bortkiewicz uses the term 'value' to mean 'price proportional to labour time'. In order to make it clear that 'value' here means a price, I will continue to use the term 'value-price' to refer to price proportional to labour time.

of gold, because, according to Marx's theory, price is the objective measure of the value of commodities, and gold cannot be the objective measure of its own value. The value of gold can only be objectively measured in terms of *some other commodity*. Therefore, the Bortkiewicz-Sweezy interpretation starts off with a fundamentally incorrect concept of the 'price' of gold in terms of gold itself.[27]

Similarly, in the Bortkiewicz-Sweezy interpreation, gold also has a 'price of production', whose unit of measurement is also a definite quantity of gold, but whose magnitude *could be different* from the value-price of gold. But how is this possible? How is it possible for the price of production (in units of gold) of 20 oz. of gold to be different from 20 oz. of gold? According to Bortkiewicz and Sweezy, this trick is accomplished by *changing the unit of measurement* for the price of production of gold! For example, if the unit of measurement for prices of production were 1/2 oz. of gold, then the price of production of 20 oz. of gold would be *40 1/2* oz. of gold. The magnitudes of the value-price and the price of production of 20 oz. of gold would be different, because the same 20 oz. of gold would be measured in different units of gold![28] Such a conception of the 'price of production' of gold is obviously totally foreign to Marx's theory of prices of production. In Marx's theory, the unit of measurement for both the value-price and the price of production of commodities is the same – a definite, given quantity of gold, e.g., 1 oz. of gold. Furthermore, the Bortkiewicz-Sweezy conception of the price of production of gold also has no significance in reality. Even though the magnitude of Bortkiewicz and Sweezy's price of production of gold could be different from the value-price of gold, the value-product of the gold industry – the quantity of gold produced (M_G') – remains exactly the same and cannot change (20 oz. of gold), as Marx emphasised. This actual 20 oz. of gold is what matters in the real capitalist economy. This magnitude of actual gold output is compared with the initial actual money capital advanced in the gold industry (M_G) in order to determine the actual surplus-value and profit produced in the gold industry, which is a definite quantity of gold output, as we saw ($S_G = \Pi_G = \Delta M_G$). Bortkiewicz's invention of something called a 'price of production of gold', that could be measured in different units from the

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27   De Brunhoff 1973, pp. 70–1, Yaffe 1976, pp. 35–7, and Rodriquez 1996, pp. 82–3, have also criticised Bortkiewicz and Sweezy for their failure to understand that the money commodity has no price. De Brunhoff stated: 'If money is treated as a unit of account possessing a price, it **loses its specificity** ... The confusion of the problem of prices and that of the conditions of reproduction, and the introduction of a money-commodity unit of account, **wreck the basis of Marx's theory of money**' (p. 71).

28   Bortkiewicz 1906, p. 12, and 1907, p. 202; Sweezy 1942, p. 117.

'value-price of gold', has no significance whatsoever for the determination of the actual surplus-value produced nor for the actual profit received in the gold industry.

This bizarre assumption (that the units of measurement are different for value-prices and prices of production) is necessary, according to the Bortkiewicz-Sweezy interpretation, if one also assumes the total 'price of production' to be equal to the total 'value-price'. However, these assumptions also lead to the conclusion, according to their logic, that total profit is not equal to total surplus-value, because the given quantity of surplus gold produced, which represents surplus-value, would now be measured in a different unit.

On the other hand, if one assumes that the unit of measurement is the same for both value-prices and prices of production, then, according to their logic, the opposite conclusions follow: total profit will equal total surplus-value, but total value-price will not equal total price of production. This latter case is the assumption made by Bortkiewicz and Sweezy. We will return to this point below.

2.2 *Surplus-Value is Redistributed between the Gold Industry and Other Industries*

The second mistake in the Bortkiewicz-Sweezy interpretation of Marx's theory of money and the transformation problem is that they assume that the rate of profit is equalised in the gold industry in the same way as in all other industries – through the redistribution of surplus-value between the gold industry and all other industries. As a result of this redistribution of surplus-value, the profit received in the gold industry is (in general) *not equal* to the surplus-value produced in the gold industry. More specifically, Bortkiewicz and Sweezy assume that the gold industry has a lower than average composition of capital, and thus has a higher than average 'value' rate of profit. Hence, in the equalisation of the profit rate, some of the surplus-value produced in the gold industry is (supposedly) transferred to other industries with a higher composition of capital.

The way in which there is supposed to be a redistribution of surplus-value between the gold industry and other industries, according to the Bortkiewicz-Sweezy interpretation, is that the *inputs* of constant capital and variable capital *change*, i.e., these input prices are lower in the determination of prices of production than they are in the determination of value-prices. Bortkiewicz and Sweezy assume that the 'price of production' of gold is equal to the 'value-price' of gold, which implies that total profit is equal to total surplus-value, and thus that surplus-value cannot be shared between the gold industry and other industries through a change from the 'value-price' of gold to the 'price of production'

of gold. This 'sharing' can only occur through a change in the inputs of constant capital in the gold industry and other industries. According to this interpretation, in the Volume I theory of value and surplus-value, constant capital and variable capital in the gold industry (and all other industries) are assumed to be equal to the *value-prices* of the means of production and means of subsistence, respectively. Thus, according to this interpretation, constant capital and variable capital in Volume I are *not* equal to the *actual* equilibrium prices of production of the means of production and means of subsistence, but are instead equal to these *hypothetical* equilibrium value-prices of the means of production and means of subsistence (C_G^* and V_G^*, where the superscript * indicates these hypothetical quantities of money capital equal to value-prices).

Furthermore, since constant capital and variable capital in the gold industry are hypothetical quantities, so also is the surplus-value in the gold industry that is determined by these hypothetical quantities of capital, according to this interpretation. Surplus-value in the gold industry is determined by subtracting these hypothetical quantities of constant capital and variable capital from the value-price of gold, which is equal to the actual quantity of gold produced (M_G'). Algebraically:

$$(3) \quad S_G^* = M_G' - M_G^* \qquad\qquad\qquad\qquad \text{where } M_G^* = C_G^* + V_G^*$$

Thus we can see clearly that S_G^* is a hypothetical quantity of surplus-value because M_G^* is a hypothetical quantity of initial money capital advanced. But (as we saw above) Marx emphasised that surplus-value in the gold industry is the actual quantity of surplus gold produced, and this actual quantity of surplus gold cannot change in the transformation of values into prices of production.

In the Volume III theory of prices of production, according to this interpretation, the inputs of constant capital and variable are *predetermined* as equal to the *price of production* of the means of production and means of subsistence, which are in general *not* equal to the value-prices of these inputs (i.e. $C_G \neq C_G^*$ and $V_G \neq V_G^*$, or $M_G \neq M_G^*$). In Bortkiewicz and Sweezy's famous numerical example, $C_G^* = 50$ and $C_G = 64$, and $V_G^* = 90$ and $V_G = 96$.

The profit received in the gold industry, according to this intepretation is equal to the difference between the 'price of production' of gold, which is equal to the actual quantity of gold produced (M_G'), and the actual quantities of constant capital and variable capital ($M_G = C_G + V_G$, that are equal to the prices of production of the means of production and means of subsistence). Algebraically:

$$(4) \quad \Pi_G = M_G' - M_G$$

Since $M_G \neq M_G{}^*$, it follows from equations (3) and (4) that $\Pi_G \neq S_G{}^*$. In other words, the *profit received in the gold industry is not equal to the surplus-value produced in the gold industry*, according to this interpretation. There is 'sharing' of hypothetical quantities of surplus-value between the gold industry and other industries, which happens because the inputs of constant capital and variable capital change in the transformation of values into prices of production. Bortkiewicz and Sweezy assume that the composition of capital in the gold industry is below the social average, and thus has a higher than average rate of profit. Therefore, in order to equalise the profit rate, some of the surplus-value (supposedly) produced in the gold industry is transferred to other industries with a higher composition of capital. In Bortkiewicz and Sweezy's numerical example, $S_G{}^* = 60$ and $\Pi_G = 40$.

I argue that all this is contrary to Marx's theory. We have seen above that, in Marx's theory, the inputs of constant capital and variable capital *do not change* in the transformation of values into prices of production, but are instead *taken as given*, as the actual quantities of money capital advanced, which are equal to the prices of production of the inputs; and the *same quantities* of constant capital and variable capital are taken as given in the determination of both the total surplus-value in Volume I and the industry prices of production in Volume III. This same logical method also applies to the gold industry – the actual quantities of money capital advanced to purchase means of production and labour power in the gold industry ($M_G = C_G + V_G$) are taken as given, and the same quantities of money capital are taken as given in the determination of both the surplus-value produced in the gold industry and the profit received in the gold industry.

We have also seen above that the value-product of the gold industry is also the same in the determination of both the surplus-value produced in the gold industry and the profit received in the gold industry – the actual quantity of gold produced (M_G'). Therefore, it follows that the surplus-value produced in the gold industry is *always identically equal* to the profit received in the gold industry; i.e., $\Pi_G \equiv S_G = M_G' - M_G$. According to Marx's theory, there is *no 'sharing'* of the surplus-value produced within a given period between the gold industry and other industries. The surplus-value produced in the gold industry within a given period is a definite quantity of gold, the actual quantity of surplus gold produced, which cannot change into a different quantity through the sharing of surplus-value with other industries. It is not a hypothetical quantity of surplus-value ($S_G{}^*$) which changes into the actual quantity of profit (Π_G), as in the Bortkiewicz-Sweezy interpretation.

2.3 *Total Price of Production Not Equal to Total Value-Price*

We can now understand why Bortkiewicz and Sweezy reach the erroneous conclusion that the total price of production of commodities is greater than the total value-price of commodities. As we have seen, Bortkiewicz and Sweezy assume that the composition of capital in the gold industry is below average, and thus the 'value' rate of profit in the gold industry is above average. According to their interpretation, in order to equalise the rate of profit in the gold industry, surplus-value is transferred from the gold industry to other departments (with a higher composition of capital). This transfer of surplus-value from the gold industries to other departments is accomplished by means of an increase in the prices of these other commodities. Therefore, the total price of production of commodities is greater than the total value-price of commodities, because of this alleged transfer of surplus-value from the gold industry to other industries. Bortkiewicz asserts:

> Without paying the slightest regard to the conditions of production of the good serving to measure value and price, Marx simply asserts in general terms that total price = total value. This assertion is not only unproven, it is false.[29]

I would say in response: without paying the slightest regard to Marx's theory of money and to the uniqueness of money in Marx's theory, Bortkiewicz simply asserts that the money commodity (e.g., gold) is like all other commodities, in that surplus-value is shared between the gold industry and all other industries in order to equalise the rate of profit in the gold industry. However, this assertion is not only unproven, it is false. We have seen above that, according to Marx's theory, there is no sharing between the gold industry and all other industries; surplus-value in the gold industry is the definite quantity of actual surplus gold produced, which cannot be shared with other industries. Therefore, there can be no change in the prices of production of other commodities as a result of this non-existent transfer of surplus-value from the gold industry. Consequently, the total price price of production = total value-price, no matter what the composition of capital in the gold industry. In other words, because there is no redistribution of surplus-value in or out of the gold industry, the exchange ratio of the total commodity product with gold does not change as a result of the transformation.

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29   Bortkiewicz 1906, p. 11.

Therefore, we can see that Bortkiewicz and Sweezy's conclusion – that the total price of production of commodities is greater than the total value-price of commodities because the composition of capital in the gold industry is less than the average composition of capital – *does not apply to Marx's theory*, but instead applies only to Bortkiewicz and Sweezy's misinterpretation of the role of money in Marx's theory. According to Marx's own logic, the composition of capital in the gold industry has *no effect* on the total price of production of all other commodities, because surplus-value is not redistributed between the gold industry and all other industries, even if the composition of capital in the gold industry is not equal to the average composition of capital. There may be an equalisation process toward the average rate of profit in the gold industry, but this equalisation process involves the appropriation of surplus profit by the gold landlords as rent or an increase in the amount of surplus gold produced in the gold industry by shutting down the least productive mines; it does not involve a transfer of surplus-value from the gold industry to other industries. Therefore, the total price of production of commodities is always identically equal to the total value-price of commodities. This aggregate equality is not affected by the sharing of surplus-value in the gold industry, because there is no sharing of surplus-value in the gold industry. This aggregate equality is always true, by the nature of Marx's theory of money. It is not a conditional equality, which may or may not be true, depending on the composition of capital in the gold industry.

3 The MELT and the Transformation Problem

We saw in Chapter 2 that the MELT (the 'monetary expression of labour time', or the money value produced per hour of abstract labour) is a crucial variable in Marx's labour theory of value – it is the coefficient (designated by $\mathbf{m}$) that converts a given quantity of abstract labour in all industries into a quantity of money new value produced by current labour: $\mathbf{N} = \mathbf{m}\,\mathbf{L}$. According to Marx's theory with commodity money (e.g., gold), the magnitude of the MELT is determined by the inverse of the value of a unit of gold: $\mathbf{m} = 1/\mathbf{L_g}$. Or one could say that the MELT is determined by the amount of gold produced per hour of abstract labour in the gold industry ($\mathbf{G_L}$).

As discussed above, the product of gold labour is directly and immediately money value, a quantity of money value equal to its own physical amount. An hour of abstract labour in all other industries is assumed to produce the same quantity of money value as one hour of abstract labour in the gold industry. The difference between gold labour and all other labour is that one hour of abstract

labour in the gold industry produces actual money value directly, as money itself, whereas one hour of abstract labour in all other industries produces the same amount of money value in the form of the prices of commodities, which still have to be converted into actual money value through sale.

This magnitude of the MELT is not affected by the transformation of value into prices of production. The transformation of value into prices of production does not affect the labour time required to produce a unit of gold or the quantity of gold produced in an hour of abstract labour in the gold industry, and thus does not affect the MELT in all other industries. The MELT has to do with the production of value, not with the distribution of value and surplus-value, and thus is not affected by the distribution of surplus-value and prices of production.

On the other hand, the magnitude of the MELT (determined in this way) is one of the ultimate determinants of prices of production. As we have seen, prices of production depend in part on the general rate of profit, which depends in part on the total surplus-value produced in the economy as a whole, which in turn depends in part on the value-price of the total commodity product, which depends in part of the MELT. Schematically:

$$\text{MELT} \rightarrow \begin{array}{c}\text{total}\\\text{value-price}\end{array} \rightarrow \begin{array}{c}\text{total}\\\text{surplus-value}\end{array} \rightarrow \begin{array}{c}\text{total}\\\text{rate of profit}\end{array} \rightarrow \text{prices of pd.}$$

such that total price of production = total value-price and total profit = total surplus-value. Therefore, the MELT is one of the ultimate determinants of prices of production, but prices of production have no effect on the magnitude of the MELT.

4   Non-Commodity Money and the Transformation Problem

This chapter has assumed throughout that money is a commodity (e.g., gold) in its function as measure of value, as did Marx and Bortkiewicz-Sweezy and the literature on the transformation problem. However, I argue that Marx's theory does not require that money be a commodity. Instead, what is required in Marx's theory is that there be some objective measure of quantities of abstract labour that is socially accepted by all commodity owners as a universal equivalent. In today's capitalism, in which money is no longer a commodity (i.e., no longer convertible into gold at a fixed exchange rate), modern credit money meets this necessary requirement, and it performs the same function of measure of value as gold under the gold standard – it provides a socially accepted,

objective expression of quantities of abstract labour. This is a somewhat contro-versial subject (which would require a long discussion and is beyond the scope of this book), although a majority of Marxian scholars agree that money does not have to be a commodity in Marx's theory.[30]

However, the abandonment of the gold standard has raised another import-ant issue in Marx's theory: what determines the magnitude of the MELT in the case of non-commodity money? I have argued that, in today's non-commodity money, the MELT depends not only on G_L, but also on the ratio $(M_p \,/\, M_g^*)$, i.e., the ratio of the quantity of paper money in circulation to the quantity of gold money that would be required if prices were gold prices.[31] For example, if twice as much paper money were forced into circulation than is required for circulation on the basis of gold prices (e.g., if $M_p /\, M_g^* = 2$), then the MELT would double and hence the prices of all commodities would also double. Marx argued that in this case, the paper money does not represent labour time di-rectly, but rather indirectly through gold. In the above example, twice as much money would represent the same quantity of gold money required for circu-lation, and this quantity of gold money would continue to represent the same quantity of abstract labour time contained in all other commodities. This inter-pretation is based on Marx's analysis of inconvertible fiat money in Chapter 3 of Volume I of *Capital* (pp. 221–6), in Chapter 2 of the *Contribution to a Critique of Political Economy* (pp. 119–22), and in the *Grundrisse* (pp. 131–6), all of which are discussed in Moseley 2011b.

But the most relevant point for this book about the transformation problem is that the abandonment of the gold standard eliminates even the possibility of the 'money problem' discussed in this chapter – that the equalisation of the profit rate together with a non-average composition of capital in the gold industry causes total prices of production to diverge from total value-prices. With non-commodity money, prices are no longer exchange-ratios with gold. Therefore, the equalisation of the profit rate in the gold industry (due to a non-average composition of capital) does not affect the prices of commodities, and hence could not possibly affect the total price of commodities, which continues to be identically equal to the total value-price of commodities.

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30   Others who have come to similar conclusions include Foley 2005, Lapavitsas 2000, Wil-liams 2000, Campbell 1997, and Saros 2007; the main proponent of the contrary view is Claus Germer (e.g., Germer 2005), who argues that money does have to be a commod-ity in Marx's theory of the measure of value, and that gold still functions as the ultimate measure of value in the world economy today.

31   Moseley 2011b.

5   Conclusion

This chapter has discussed the unique role of the money commodity (e.g., gold) in Marx's theory of value and surplus-value, and especially in his theory of prices of production. It has emphasised two unique features of the money commodity: (1) The money commodity has neither a value-price nor a price of production, because price in Marx's theory is an objective measure of the value of commodities, and gold cannot be an objective measure of its own value. Since the value-price and price of production of gold do not exist, they cannot be two different magnitudes. (2) Surplus-value in the industry that produces the money commodity is also a definite quantity of surplus output produced, that cannot change as a result of the transformation. Therefore, surplus-value cannot be redistributed in or out of the industry that produces the money commodity. It follows from these unique features of the money commodity that the total price or production of all commodities is identically equal to their total value-price, as Marx claimed. We have also seen that the magnitude of the MELT with commodity money is not affected at all by the transformation of value-prices into prices of production.

This chapter has also argued that the Bortkiewicz-Sweezy interpretation of Marx's theory of the role of money in the transformation from value-prices into prices of production is a fundamental misinterpretation. Bortkiewicz and Sweezy fail to consider Marx's basic theory of money in Part 1 of Volume I, and thus they make fundamental errors. They assume that gold has both a value-price and a price of production, and that surplus-value is redistributed in or out of the gold industry, both of which contradict Marx's theory. These mistaken assumptions lead them to the erroneous conclusion that the total price of production of commodities is in general not equal to their total value-prices, which also contradicts Marx's theory. Contrary to Bortkiewicz and Sweezy, the money commodity presents no problems in Marx's transformation from value-prices into prices of production. And if some still insist that the money commodity does present problems in the transformation, these alleged problems would disappear with the elimination of commodity money.

Other Interpretations of the Transformation Problem

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Standard Interpretations

I have argued in Part I that the main characteristics of the 'macro-monetary' interpretation of Marx's theory presented in this book are the following: (1) the determination of the *total surplus-value prior* to its division into individual parts; i.e., the *production* of surplus-value is theorised prior to the *distribution* of surplus-value; (2) the subject of the theory throughout is a '*single system*' – the actual capitalist economy – which is first analysed at the level of the total economy and is then subsequently analysed at the level of individual industries; (3) the analytical framework of the theory is the *circulation of money capital* ($M – C \dots P \dots M' – C'$), and the initial money capital M is *taken as given*, as known data, both in the theory of the production of surplus-value and in the theory of the distribution of surplus-value; (4) the given initial M is *eventually explained* in two stages, first partially at the macro level and then more completely at the micro level; and (5) all the main variables are determined according to the logic of *sequential determination*, in the above senses. According to this logical method, the *same quantities* of constant capital and variable capital are taken as given both in the theory of value and surplus-value in Volume I and in the theory of prices of production in Volume III. Therefore, Marx did not 'fail to transform the inputs' in his theory of prices of production, and this theory is complete and logically consistent with his theory of value and surplus-value. Marx succeeded in overcoming the 'chief stumbling block' of Ricardo's theory.

This chapter will discuss the two main versions of what I call the 'standard interpretations' of Marx's theory – the older Bortkiewicz-Sweezy interpretation and the more recent Sraffian interpretation (a section is devoted to each). This chapter will also discuss and respond to the main criticisms of Marx's theory of prices of production made by these standard interpretations.

1 Bortkiewicz-Sweezy Interpretation[1]

Bortkiewicz and Sweezy interpret Marx's theory as composed of '*two systems*': (1) a hypothetical 'value system' in which commodities exchange at their values, and (2) the actual 'price system' in which commodities exchange at prices of

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1 Bortkiewicz 1906 and 1907; Sweezy 1942.

production (both of these as equilibrium tendencies). They argue that Marx attempted to derive prices of production in the 'price system' from the values in the 'value system', but that he failed to do so, because his theory of prices of production assumed that the inputs are purchased at their values. But it is obviously impossible for inputs to exchange at values and outputs to exchange at prices of production, because the inputs for some industries are at the same time outputs of other industries. Another related mistake that Marx allegedly made is that he used the 'value rate of profit' to determine prices of production, rather than the 'price rate of profit'.

Bortkiewicz and Sweezy also argue that, because input prices are not equal to output prices, the equilibrium conditions of simple reproduction [supply = demand in each of the three departments] will not be satisfied. For example, in Department I (that produces means of production), *supply* is equal to the price of the means of production (P_1), and *demand* is equal to the sum of the constant capital components in all three departments ($C_1 + C_2 + C_3$), which is supposedly equal to the value of the means of production. So the equilibrium condition for simple reproduction in Department I is: $P_1 = C_1 + C_2 + C_3$. According to Bortkiewicz's well-known numerical example (also used by Sweezy), after the value of the output of Department I has been transformed into prices of production 'according to Marx's method', this condition will not be satisfied: e.g., $433\frac{1}{3} \neq 400$. Therefore, Bortkiewicz and Sweezy conclude that Marx's theory of prices of production as he presented it is logically flawed and incoherent. According to Bortkiewicz:

> We have thus proved that we would involve ourselves in internal contradictions by deducing prices from values in the way in which this is done by Marx. He made the mistake of carrying over certain magnitudes without alteration from the table of values into that of prices. In transforming values into prices, it is inadmissible to exclude from the recalculation the constant and variable capital invested in the various spheres of production.[2]

However, I argue that this 'dual system' interpretation is a misinterpretation of Marx's logical method. Marx's theory is a 'single system' theory; i.e., it is about one single economic system from beginning to end – the actual capitalist economy – which is analysed first at the total economy macro level and then at the individual industry micro level. The givens in Marx's theory of prices

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2   Bortkiewicz 1906, p. 9.

of production are not hypothetical values and a hypothetical 'value rate of profit' determined in the hypothetical 'value system', but are instead the actual quantities of money capital advanced and consumed in each industry (the M_i's), which are taken as given as initial data, and the actual price rate of profit as determined by the prior macro theory of the total surplus-value. The given M_i's in Marx's theory of prices of production are the same actual quantities as the total M which are taken as given in the prior macro analysis of the total surplus-value and general rate of profit; the only difference is that the M_i's are disaggregated to industry levels. Therefore, Marx did not 'fail to transform the inputs' from values to prices of production in his theory of prices of production; there is no such transformation of the inputs to be made. Furthermore, there is only one rate of profit in Marx's theory – the actual price rate of profit – which is determined in the macro theory of the total surplus-value and presupposed in the micro theory of prices of production and the individual parts of surplus-value.

Furthermore, it can be shown that, according to my 'macro-monetary' interpretation of Marx's theory, the equilibrium conditions of simple reproduction are indeed satisfied. The key point is that (as just discussed) Marx's theory is a about 'single system' – the actual capitalist economy – not 'two systems' as in the Bortkiewicz-Sweezy interpretation. According to Bortkiewicz-Sweezy, the reproduction conditions are satisfied in the hypothetical 'value system', with exchange at values; however, after values have been transformed into prices of production, then the reproduction conditions are no longer satisfied in the 'price system'. I argue that Marx's 'single system' theory is the *opposite* of the Bortkiewicz-Sweezy interpretation in this respect. The reproduction conditions are satisfied for actual capitalist price system, but not satisfied for a hypothetical 'value system'. If one wants to imagine a hypothetical 'value system', then one should not expect or assume the reproduction conditions to be satisfied. According to Marx's theory, the reproduction conditions would not be satisfied for a hypothetical 'value system', but this is of no consequence, because exchange in capitalism does not actually take place at values. Exchange in capitalism takes place at prices of production (as an equilibrium tendency), and the reproduction conditions are satisfied with exchange at prices of production.

This conclusion can be illustrated by the following simple two-department reproduction tables; the first table assumes exchange at values and the second table assumes exchange at prices of production.

In the '*value*' table, it is assumed that the rate of surplus-value is the same in both sectors, and is equal to 1.0 (i.e., the surplus-value produced in each sector is assumed to be equal to the variable capital advanced in that sector). However,

TABLE 2   *Values (in units of dollars)*

| | Value | | | | Value rate |
	C	V	S	P	of profit
I	$290	$70	$70	$430	.19
II	$190	$170	$170	$530	.47
Total	$480	$240	$240	$960	.33

TABLE 3   *Prices of production (in units of dollars)*

| | | | | | Price rate |
	C	V	Π	PP	of profit
I	$290	$70	$120	$480	.33
II	$190	$170	$120	$480	.33
Total	$480	$240	$240	$960	.33

the compositions of capital in the two sectors are not the same, from which it follows that the 'value rates of profit' in the two sectors are also not equal. The equilibrium conditions of simple reproduction are *not* satisfied (e.g., C = $480 ≠ P_I = $430), but this is of no consequence because commodities do not actually exchange at their values.

In the *'price of production'* table, constant capital and variable capital are the same as in the determination of values, as I have emphasised. The only difference between values and prices of production in the two sectors is the difference between surplus-value and profit. The general rate of profit (R) is determined by the ratio of the total surplus-value to the total capital advanced:

R = total surplus-value / total capital = 240 / 720 = 0.33

The amount of profit (π_i) in each sector is then determined by the product of the general rate of profit and the capital invested in that sector:

$\pi_i = R (C_i + V_i)$

Then the price of production in each sector (PP_i) is determined by the sum of the constant and variable capital consumed and the amount of profit in that sector.

$$PP_i = C_i + V_i + \pi_i$$

The equilibrium conditions of simple reproduction are satisfied (e.g., $C = PP_I$ = \$480). We can also see that the both of Marx's two aggregate equalities are satisfied (total π = total S = \$240, and total PP = total P = \$960). Therefore, I conclude that *none* of the Bortkiewicz-Sweezy criticisms of Marx's theory of prices of production are valid. If Marx's theory is interpreted as a single-system, macro-monetary theory, as presented in this book, then Marx's theory of prices of production is logically consistent and complete, and the reproduction conditions are satisfied for the actual capitalist economy.

1.1   *Bortkiewicz's 'Correction'*

As is well known, Bortkiewicz presented a 'correction' of Marx's theory of prices of production. However, it is not always fully appreciated that this correction of Marx's theory is based on a *completely different theory* of prices of production than Marx's own theory. This is not just a minor correction of the inputs of constant capital and variable capital, but a different basic theory altogether.

In the first place, the logical framework of the Bortkiewicz-Sweezy interpretation is *simple reproduction*, which is an entirely different framework from Marx's circuit of money capital. The purpose of Marx's analysis of simple reproduction in Part 3 of Volume II has nothing to do with the determination of value and surplus-value, nor with the determination of prices of production. The theory of value and surplus-value is presented in Volume I of *Capital*, and the theory of prices of production is presented in Volume III; neither is presented in Volume II. The main purpose of Marx's analysis of simple reproduction in Volume II is to criticise 'Smith's dogma', according to which the total price of commodities can be resolved into wages plus profit only, thereby eliminating constant capital.[3]

The equilibrium conditions for the three departments of simple reproduction in Bortkiewicz's 'correction' provide a system of simultaneous equations, with three equations and four unknowns – the three 'transformation coefficients' (x, y, and z, which are the ratios of the price of production of each department to the labour value of each department) and the rate of profit (r).

I $(1 + r)(c_1x + v_1y) = (c_1 + c_2 + c_3)x$
II $(1 + r)(c_2x + v_2y) = (v_1 + v_2 + v_3)y$
III $(1 + r)(c_3x + v_3y) = (s_1 + s_2 + s_3)z$

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3   See Moseley 1998 for an extensive discussion of Marx's reproductive schemes.

The values (the c's, v's, and s's) are taken as given and are transformed into prices of production by these transformation coefficients. This system of equations is to be solved simultaneously. Thus the replacement of Marx's circuit of capital with simple reproduction is accompanied by the replacement of Marx's logic of sequential determination with the logic of simultaneous determination. Unlike in Marx's theory, the rate of profit is no longer determined at the macro level by the aggregate ratio of the total surplus-value to the total capital invested, before the determination of prices of production. Instead, Marx's macro theory of the rate of profit is abandoned altogether, and replaced with a micro theory of the rate of profit, based on the simultaneous determination of the rate of profit with input prices and output prices.

An additional assumption is necessary in order to be able to solve the system of simultaneous equations (so that the number of equations equals the number of unknowns). Bortkiewicz and Sweezy's additional assumption is that the transformation coefficient for Department III (luxury goods and the gold industry) is 1 unit of gold per unit of labour time, i.e., the price of production of luxury goods is equal in magnitude to the value of luxury goods, which in turn implies that total profit = total surplus-value. Once the other transformation coefficients are determined ($x = 9/8$ and $y = 3/4$), they can be multiplied by the given values of the their respective departments in order to determine the prices of production of the other two departments.

Unfortunately for Marx, the Bortkiewicz-Sweezy 'correction' of his theory leads to the following damaging conclusions: (1) total price of production ≠ total value, and (2) the price rate of profit ≠ the value rate of profit. With respect to (1), it is concluded that Marx's two aggregate equalities cannot both be true at the same time in this interpretation; only one can be true at a time. In the Bortkiewicz-Sweezy interpretation, it is assumed that total profit = total surplus-value, so total price of production ≠ total value.[4] With respect to (2), the value rate of profit plays no role whatsoever in the determination of the price rate of profit and prices of production in this interpretation. The value rate of profit is simply dropped as a useless part of the theory of prices of production and the price rate of profit.

Sweezy argues that these conclusions are not that damaging.[5] He argues that Marx's theory is primarily a macro theory, and is mainly about the total amount of profit in the economy as a whole, which provides a theory of class exploitation, and that Marx's theory of profit is much better than any other theory of

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4 Sweezy 1942, p. 121; Tables IV ('Value Calculation') and IVa ('Price Calculation').

5 Sweezy 1942, pp. 125–30.

profit. Marx's theory, and only Marx's theory, reveals the underlying reality of exploitation beneath the superficial appearances of prices and equal exchange. Compared to the significant accomplishments of Marx's macro theory of profit, these minor problems in his micro theory of prices of production are insignificant. The inequality between total price of production and total value is merely a matter of the unit of account. The trend over time in the price rate of profit is likely to be very similar to the trend in the value rate of profit, so the difference in their magnitudes is not important. Overall, 'a correct conception of the transformation problem does not affect the laws of capitalist development' derived by Marx's macro theory of profit.[6]

On the other hand, Sweezy acknowledges that Marx's attempt to derive the rate of profit directly from value magnitudes was an 'error' and cannot be done. But he argues that this error 'pales into insignificance' compared to the 'profound original accomplishments' of Marx's theory.[7]

1.2   *Response to Sweezy*

I agree with Sweezy that Marx's theory is primarily a macro theory, and mainly a macro theory of profit, and that Marx's theory of profit is much better than any other theory of profit.[8] However, I don't agree that the problems with the Bortkiewicz-Sweezy interpretation are minor. The inequality between total price of production and total value is not just a matter of the unit of account. As discussed in Chapter 5, the relation between these two aggregate price totals has to do with the fundamental role of money in a commodity economy, and how the rate of profit is equalised in the industry that produces the money commodity. I have already discussed Bortkiewicz and Sweezy's misinterpretation of the role of money in Marx's theory of prices of production at length in Chapter 5. Most importantly, it is not a small matter that Marx's theory of the rate of profit is erroneous and has to be abandoned. A theory of the total profit should also provide a consistent theory of the general rate of profit that is in turn a determinant of long-run equilibrium prices. If not, that would undermine confidence in the validity of the theory of the total profit. It is unlikely that the total amount of profit and the general rate of profit have different

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6 Sweezy 1942, p. 128.

7 Sweezy 1942, p. 123.

8 Sweezy commented in his 1942 book that mainstream economics had 'largely given up on attempts to explain the origin of profit' (p. 136). Since that time, the most important mainstream theory of profit – the marginal productivity theory – has become even more thoroughly discredited by the devastating Cambridge criticisms, and mainstream economics has *completely given up* on the attempt to explain the origin of profit.

causes and determinants. And if Marx's theory of the rate of profit is erroneous and has to be abandoned, then the fact that the trends of the value rate of profit and the price rate of profit are similar is of no theoretical significance. (This point will be discussed further in the next chapter on Shaikh's interpretation).

I argue, to the contrary, that Marx's theory of the rate of profit does not have to be abandoned, because Marx did not make the alleged 'mistake' in his theory of prices of production; i.e., he did not fail to transform the inputs of constant capital and variable capital. Instead, the *same quantities* of constant capital and variable capital are *taken as given* in his theory of prices of production as in his theory of value and surplus-value. Therefore, this century-long theoretical detour created by Bortkiewicz and Sweezy is not necessary, and leads to erroneous conclusions about Marx's theory. Marx's theory of prices of production in Volume III is complete, and is logically consistent with his theory of value and surplus-value in Volume I. The total price of production is equal to the total value, and the total profit is equal to the total surplus-value. And there is only one rate of profit, the price rate of profit, which is determined by the macro theory of the total surplus-value in Volume I, and taken as given in the micro theory of prices of production in Volume III. Marx's theory of the rate of profit can be rigorously and consistently determined by the aggregate ratio of the predetermined total surplus-value to the given total capital invested (which is taken as given, as the actual money capital advanced to purchase means of production and labour power in the real capitalist economy).

Paul Samuelson made a famous criticism of the Bortkiewicz-Sweezy interpretation of the transformation problem in terms of transformation coefficients that transform values into prices of production.[9] Samuelson argued that, when one multiplies the transformation coefficients (the ratio of the price of production of each department to the value of each department) by the value magnitudes in each department, the labour values cancel out and thus play no role in the determination of prices of production:

$$[P_i / \lambda_i] \, \lambda_i = P_i$$

Prices of production are instead determined by the physical quantities that are taken as given in the determination of both values and prices of production. Samuelson concluded with his famous 'eraser' metaphor:

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9   Samuelson 1970.

In summary, 'transforming' from values to prices can be described as the following procedure: '(1) Write down the value relations; (2) take an *eraser* and rub them out; (3) finally write down the price relations – thus completing the so-called transformation process'.[10]

I agree with Samuelson's criticism of the Bortkiewicz-Sweezy interpretation. Although this interpretation ostensibly starts with values, values do in fact cancel out and play no role in the determination of prices of production in this interpretation. However, this criticism of the Bortkiewicz-Sweezy interpretation of Marx's theory *does not apply* to Marx's theory itself, because the Bortkiewicz-Sweezy interpretation is a misinterpretation of Marx's logical method. Marx's theory of prices of production is not based on the logical framework of simple reproduction and a system of simultaneous equations in which prices of production and the rate of profit are determined simultaneously. Instead, Marx's theory of prices of production is based on the logical method of the prior determination of the total surplus-value and the rate of profit, the circuit of money capital, and the sequential determination of the rate of profit and prices of production. It is true that *individual* values play no role in Marx's theory of prices of production, but the *total* new value produced by current labour in the economy as a whole plays a crucial role. The total new value determines (in part) the total surplus-value produced, which in turn determines (in part) the general rate of profit and ultimately prices of production, as discussed in previous chapters, and summarised in the following equations (discussed in Chapter 2):

$$S = N - \bar{V} = m\,L - \bar{V} = m\,L - m\,L_n = m\,L_s$$
$$R = S / (\bar{C} + \bar{V})$$
$$PP_i = (\bar{C}_i + \bar{V}_i) + R\,(\bar{C}_i + \bar{V}_i)$$

Describing this logical sequence in reverse: prices of production are not determined by multiplying transformation coefficients for each commodity by the individual values (as in the Bortkiewicz-Sweezy interpretation), but by adding the average profit to given money costs, and the average profit is determined by multiplying the general rate of profit by the given money capital invested in each industry. The general rate of profit is itself determined by dividing the total surplus-value (determined in the prior macro analysis) by the total capital invested in the economy as a whole, and the total surplus-value is determined

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10   Samuelson 1970, p. 425.

as the difference between the total new value produced by workers and the total wages they are paid. Nothing cancels out in this logic of sequential determination.

2   Sraffian Interpretation[11]

The Sraffian interpretation and criticism of Marx's theory (e.g., Steedman) is similar to the Bortkiewicz-Sweezy interpretation in the fundamental respect that it interprets Marx's theory in terms of a 'dual system' – a 'value system' and a 'price system' – and that Marx failed to transform the inputs in the 'price system' from values to prices of production, and Marx also mistakenly used the 'value rate of profit' to determine prices of production in the 'price system'.[12] Therefore, the Sraffian interpretation also concludes that Marx's theory of prices of production as he presented it is logically incoherent. I have disputed these criticisms in the previous section (and indeed in the entire book), and these rebuttals need not be repeated here.

The Sraffian 'correction' of Marx's theory is essentially Sraffa's theory, which disaggregates the Bortkiewicz-Sweezy reproduction schemes with three departments into an input-output matrix with n industries. The fundamental similarity of these two interpretations is that they are both in terms of a system of simultaneous equations, in which the rate of profit is determined simultaneously with input prices and output prices. The well-known Sraffian system of simultaneous equations, in matrix notation, is the following:

$$pX = (pA + pbL)(1 + r)$$

We can see that Marx's circuit of money capital is missing altogether in this 'correction', and Marx's logic of sequential determination is replaced by the logic of simultaneous determination, as in the Bortkiewicz-Sweezy interpretation. This Sraffian price system consists of n equations in $(n + 2)$ unknowns – the n prices of production, the real wage (b), and the rate of profit (r). In order to solve this system of equations, two more assumptions are necessary; usually the real wage is taken as given and the price of one commodity is set = 1 as a 'normali-

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11   The Appendix to this chapter presents a concise algebraic summary of the very significant differences between the Sraffian interpretation of Marx's theory and the macro-monetary interpretation presented in this book.

12   Steedman 1977.

zation condition' (this arbitrary commodity becomes the numéraire in terms of which the prices of all other commodities are expressed).

In this interpretation, there is no logical connection between the values determined in the value system and the prices of production determined in the price system. There are no 'transformation coefficients' which ostensibly convert values into prices of production, as in the Bortkiewicz-Sweezy interpretation. Instead prices of production are derived directly from the technical coefficients of production and the real wage. One does not need Samuelson's eraser to eliminate values from the determination of prices of production; in the Sraffian interpretation, values do not even *appear* to determine prices of production. The Sraffian correction also comes to the same damaging quantitative conclusions as the Bortkiewicz-Sweezy interpretation. Both of Marx's two aggregate equalities cannot be true simultaneously; one can choose which aggregate equality to assume, but the other one will generally be violated. And the price rate of profit will always be different from the value rate of profit; similar to the Bortkiewicz-Sweezy interpretation, the value rate of profit plays no role in the determination of the price rate of profit and prices of production.

2.1   *Value is Not 'Redundant'*

Since the value system is not necessary to determine the rate of profit and prices of production, Sraffians argue that the value system is 'redundant'.[13] One can try to derive prices of production from values, but it is not necessary to do so; one can instead derive the same prices of production directly from the same physical quantities without reference to values.

I certainly agree that Sraffian theory can derive prices of production and a rate of profit from physical quantities without reference to values (although with some very unrealistic assumptions, some of which will be discussed in the following paragraphs). However, that does not mean that Marx's theory of prices of production and the rate of profit is *redundant*. Instead, Marx's theory provides an *alternative* theory of prices of production and the profit rate, which is entirely *different* from Sraffian theory, and which comes to different quantitative conclusions.

In the first place, even the definition of the rate of profit is very different in the two theories. We have seen in Part 1 that Marx's theory is about the *actual* annual rate of profit in the real capitalist economy, which reflects actual sales of commodities and actual profit on these actual sales. By contrast, the rate of profit in Sraffian theory is not the actual annual rate of profit, but is

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13   E.g., Steedman 1977, Chapter 3.

instead a *hypothetical* rate of profit, completely unique to Sraffian theory. The hypothetical nature of the Sraffian rate of profit is the result of attempts to solve two very difficult problems that arise in Sraffian theory (and in linear production theory in general) because it is based on the logical method of given physical quantities and simultaneous determination: (1) how to include *fixed capital* (a very important and prominent feature of capitalist economies) in a theory based on simultaneous determination (Sraffa called fixed capital an 'insuperable obstacle', quoting Wicksell, and Sraffa struggled for decades to overcome this obstacle);[14] and (2) how to include *unequal turnover periods* across industries (another very important and ubiquitous feature of capitalist economies) in a theory based on simultaneous determination (Sraffa did not explicitly discuss this problem, and assumed instead that all industries have the *same turnover period*, and thus that all commodities are exchanged at the same time, which he called the 'annual harvest' method).[15]

The Sraffian 'solution' to these 'insuperable' problems is to make the following extremely unrealistic assumptions: (1) fixed capital is assumed to be entirely consumed in every period, and the output of production in every period is assumed to include, in addition to regular products, hypothetical 'partially used machines' as 'joint products', whose prices are determined simultaneously in every period along with the prices of actual commodities (i.e., fixed capital is in effect treated as if it were circulating capital);[16] (2) all the different turnover

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14   See Kurz and Salvadori 2005. Wicksell never managed to successively incorporate fixed capital into his theory. At the age of 72, in a review of Åkerman, Wicksell made an attempt to incorporate fixed capital, but his only example (taken from Åkerman) was a hand-made ax that lasted *n* years, a far cry from modern structures and equipment, even in Wicksell's time; Wicksell 1934, pp. 274–99.

15   Sraffa acknowledged in his Appendix D that this assumption of an annual harvest method 'might seem *artificial* against the background of the continuous flow of industrial production, but it fits easily into the classical picture of an agricultural system …' (1960, p. 94). Artificial indeed! And yet this artificial assumption is almost always made about modern capitalist economies, because of the method of simultaneous determination (e.g., Pasinetti 1977, p. 71; Kurz and Salvadori 1995, p. 3).

16   Further unrealistic assumptions about fixed capital are also necessary: (1) all the different types of fixed capital goods in an industry (including buildings and equipment) are assumed to have the *same lifetime*, so they can be analysed together as a 'plant', with only one price for all the fixed capital goods in the 'plant'; and (2) the 'age distribution' of every type of fixed capital good is assumed to be 'uniform'; i.e., the quantity of all ages of a given fixed capital good are assumed to be the same, and the total quantity of each type of capital good must be an integer multiple of its lifetime (e.g., Sraffa's example of 20 tractors with a lifetime of 4 years are equally divided into 4 age groups of 5 tractors each;

periods in different industries are converted to multiples of a hypothetical 'unit time period' (e.g., Steedman's 'week'),[17] and the result of production in every 'unit time period' is assumed to include, in addition to regular products and 'partially used machines', hypothetical 'partially completed products' as 'joint products', whose prices are also determined simultaneously in every 'unit time period', along with the prices of regular products and the prices of the hypothetical 'partially used machines' (lots of equations and lots of variables here!).[18]

Thus, the rate of profit that is determined in Sraffian theory is not the actual annual rate of profit, but is instead the rate of profit for this hypothetical unit time period, which includes imaginary profit on 'partially completed products' and imaginary profit on 'partially used machines', even though these 'commodities' are not actually sold on markets and profit is not actually received on these 'commodities'. This fundamental difference by itself makes it worthwhile to consider Marx's alternative theory of the rate of profit – at least it is about the actual rate of profit.

Marx's method of sequential determination, on the other hand, has no problem incorporating fixed capital and unequal turnover periods. Fixed capital is taken as given (as a component of the initial money capital **M**), and depreciated over its expected lifetime, and thus there is no need to assume hypothetical 'partially used machines' as 'joint products'. Similarly with unequal turnover periods: since the initial capital is taken as given, there is no need to determine input prices and output prices at the same time, and thus there is no need to assume either hypothetical equal turnover times or hypothetical 'partially completed products' in every unit time period, whose prices are determined simultaneously with the prices of actual commodities.

Another difference between these two theories of the rate of profit is that, according to Sraffian theory, the rate of profit is determined by *technology*

1960, p. 68). Surely this is not the way the actual rate of profit and prices of production are determined in the real capitalist economy! Marx argued in his analysis of reproduction schemes in Volume II that the anarchic nature of capitalist production makes it extremely unlikely that the necessary balance can be achieved between the quantity of fixed capital goods that need to be replaced in any given year and the quantity of those goods that are produced each year. Marx argued that this irregularity in the replacement of fixed capital is another cause of the inherent instability of capitalist economies (Marx made this discovery while working on the reproduction schemes in the 1870s). Sraffian theory assumes this important problem away.

17   Steedman 1977, pp. 182–3.

18   Morishima 1969, p. 92, refers to the '*fictitious* goods and services' that are assumed by linear production theory in order to incorporate fixed capital and unequal turnover periods.

alone, whereas according to Marx's theory, the rate of profit is determined by the total *surplus labour* in relation to the given total capital invested, and the total surplus labour also depends on additional factors besides technology, including the number of workers employed, the length of the working day, and the intensity of labour. This fundamental difference between these two theories of the rate of profit is strikingly revealed by a consideration of a hypothetical economy based on 'full automation' (only machines, no labour), which has been discussed in the literature.[19] According to Sraffian theory, if there is a physical surplus in this fully automated economy, then there will always be a positive rate of profit, even though there is no labour or surplus labour. According to Marx's theory, on the other hand, such an economy would have a zero rate of profit, even though there is a physical surplus. The only source of profit is surplus labour. This important conclusion is unique to Marx's theory, and it clearly demonstrates that Marx's theory of the rate of profit is not redundant, but is instead a *different* theory of the rate of profit compared to Sraffian theory.

The key to the explanation of these different conclusions about a fully automated economy has to do with the *different initial givens* in the two theories of the rate of profit, as emphasised in this book. The initial givens in Sraffa's theory are *physical quantities without prices*. It is *as if no capital is advanced* to purchase the means of production, and the means of production enter capitalist production (and the capitalist valorisation process) as mere physical goods, without already existing prices. The prices of the means of production are 'unknowns' or 'variables', which are determined simultaneously with the prices of outputs, and (if there is a physical surplus) these input prices can always be determined low enough by this method, compared to the output prices, so that there can be a positive rate of profit paid on these low input prices, even though there is no labour and no surplus labour. Since the physical inputs have no pre-existing prices, their prices can be as low as necessary in order to yield a positive profit.

In Marx's theory, on the other hand, the initial givens are *actual quantities of money capital* advanced to purchase means of production and labour power in the beginning of the circuit of money capital. Commodities are analysed as *products of capital*, and these pre-existing quantities of money capital advanced are *not unknowns*, but rather *knowns* that are used to determine the unknowns of M′ and ΔM. These quantities of money capital advanced are a

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19   Dmitriev 1974, pp. 61–5; Steedman 1985; Pack 1985. Thanks to Rakesh Bhanduri for first pointing out this literature to me, which provides strong evidence that Marx's theory is a different theory from Sraffa's theory and comes to different quantitative conclusions.

'benchmark', or a 'break-even point' which must be recovered before there can be any surplus-value. The given pre-existing amount of money constant capital is transferred to the value of the output; i.e., it 'reappears' as one component of the value of the output. The amount of value transferred is identically equal to the amount of value which existed previously as constant capital; no less and especially no more. Therefore, according to Marx's theory, this transfer of a given, pre-existing amount of value cannot be a source of surplus-value.

In the case of full automation (according to Marx's theory), a given amount of money constant capital would be advanced to purchase means of production, and this given pre-existing amount of money capital would be transferred as the first component of the value of the output. However, as we have seen, this transfer of a given, pre-existing amount of value cannot be a source of surplus-value. If there is no labour (full automation), then there will be no 'new value' component of the value of the output, and thus there will be no possibility of surplus-value or profit (new value produced by labour > variable capital).

Metaphorically, in Sraffian theory, the 'input prices bar' can always be set low enough by simultaneous determination, so that the output prices can always get over that low bar, and there can always be a positive profit. In Marx's theory, on the other hand, *the bar is set in advance*, by the actual quantity of money capital advanced, and the only way for output prices to get over that actually existing bar is by surplus labour. If the input prices as determined by Sraffian theory and simultaneous determination are less than the actual initial money capital advanced, then capitalists would suffer a 'capital loss', and the positive profit determined by Sraffian theory would be offset by the capital loss, and there would be no actual positive profit, in spite of a Sraffian positive profit. Therefore, Marx's labour theory of value is *not redundant* with respect to his own theory of the rate of profit, but is instead essential, and provides an altogether different theory of the rate of profit than Sraffian theory. The fact that Sraffian theory provides a theory of the rate of profit independent of values does not make Marx's theory of the rate of profit redundant, because Marx's theory is a fundamentally different theory, based on the labour theory of value and surplus-value.

Steedman has argued elsewhere that this different conclusion of Marx's theory with respect to the test case of full automation *proves* that Marx's theory is 'false'.[20] Steedman's argument of course presumes that Sraffian theory is

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20   Steedman 1985.

true, and thus that the contrary conclusion of Marx's theory must be 'false'. However, for the many reasons discussed throughout this book, I consider Marx's theory to be more correct than Sraffian theory. It seems to me that profit in capitalism is determined in relation to a pre-existing, given amount of money capital advanced, rather than in relation to an unknown amount, that is determined simultaneously with output prices, and in such a way that profit can always be positive, no matter what the actual amount of money capital advanced. In whatever way this clash of theories might be decided, the fact that there is a clash of different theories demonstrates that Marx's theory is not 'redundant'. Rather, Marx's theory is a *different* theory from Sraffian theory, coming to different conclusions, and, for this reason, not redundant.

Spencer Pack has also emphasised that the case of full automation 'dramatises' or 'highlights' the *differences* between Marx's theory and Sraffian theory.[21] Pack states: 'They are two different theories of value which often yield different conclusions.'[22] Pack does not go as far as Steedman, and claim that the case of full automation proves that Marx's theory is false; rather Pack says that this case 'casts doubt – but not definitive – on the labour theory of value'.[23] He says that full automation is a 'paradox' for the labour theory of value.[24] Pack attempts to 'reconstruct' Marx's theory without the labour theory of value in terms of Sraffian theory (he calls it a 'commodity theory of value'). In any case, Pack clearly recognises the differences between these two theories, and thus recognises that Marx's theory is not redundant. Marx's theory is redundant only for someone who thinks that Sraffian theory is the only possible theory of the rate of profit.

2.2   *Value is Not 'Useless'*

Steedman argues further that, not only is the labour theory of value redundant, it is also *useless*, because it does not in fact provide a theory of the rate of profit at all.[25] This argument has to do with the 'choice of technique'. Steedman argues that values depend on technical conditions, and the choice of technology depends on the rate of profit. Therefore, values depend on the rate of profit, rather than the other way around. The rate of profit is determined logically prior to the determination of values, and therefore the rate of profit cannot

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21   Pack 1985, Chapter 4.
22   Pack 1985, p. 47.
23   Pack 1985, p. 5.
24   Pack 1985, p. 43.
25   Steedman 1977, pp. 64–5 and pp. 147–9.

be determined by values. This 'impossibility' of deriving the rate of profit from values is illustrated by Steedman's famous *fork diagram* – both values and prices could be derived from the technical conditions (the two prongs of the fork), but (when there is choice of technique) it is not possible to move logically from the value prong to the price – and rate of profit – prong.

However, Steedman's criticism applies only to the Sraffian misinterpretation of Marx's theory; it does not apply to Marx's theory correctly interpreted. Steedman's argument that the current rate of profit is determined logically prior to values depends on the Sraffian theory of the rate of profit, but does not apply to Marx's theory of the rate of profit. The choice of technology before the current period depends on the *expected* rate of profit, not the actual rate of profit of the current period. The current rate of profit that results from the technology chosen is not known at the time the technology is chosen. However, according to Sraffian theory, the current rate of profit is determined by technology alone, and therefore the choice of technology also determines the current rate of profit, and the current rate of profit is always equal to the expected rate of profit. It is in this sense that Steedman argues that the rate of profit is determined prior to values.

However, in Marx's theory, the current rate of profit is *not* determined by technology alone, so Steedman's argument does not apply to Marx's theory. Instead, after the choice of technology is made, the rate of profit in Marx's theory also depends on the total surplus labour, which in turn depends on the length of the working day, the intensity of labour, etc. Therefore, in Marx's theory, the choice of technology (which depends on the *expected* rate of profit) does not determine the actual current rate of profit, and the current rate of profit is not determined prior to values. Instead, after the choice of technology, the rate of profit remains to be determined, by the labour theory of value and the surplus labour of the current period. The Sraffian interpretation of values may be useless in the Sraffian theory of the rate of profit, but Marx's labour theory of value and surplus-value is essential in his different theory of the rate of profit. Steedman concludes his argument about the impossibility of deriving prices of production from values as follows:

> This conclusion, it should be emphasised, is the conclusion of an argument in *logic*; should anyone wish to challenge it, they must do so either by finding a logical flaw in the argument or by rejecting explicitly and coherently one or more of the assumptions on which it is based.[26]

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26   Steedman 1977, p. 49.

My challenge to this conclusion is also an argument in *logic*. I am rejecting explicitly, and I think coherently, not just one assumption on which Steedman's argument is based, but the entire logical method on which it is based – with 'two systems', a hypothetical value system and the actual price system, and the only connection between them is the physical quantities of inputs and outputs that are taken as given in both systems. I argue instead that Marx's theory is based on an entirely *different logical method*, one that is based on a 'single system', the actual capitalist economy, which is analysed first at the macro level and then at the micro level, and the initial givens at both the macro and the micro level are the actual quantities of money capital advanced at the beginning of the circuit. Using this logical method, there is a straightforward way to derive prices of production from values, as described in Part 1 of this book, and summarised algebraically in Chapter 2.

2.3   *'Joint Products' is Not a Problem*

Another Sraffian criticism is that 'joint products' of two or more commodities in the same process makes the labour theory of value impossible, because it is not possible to separate the labour time involved in the process into individual components for each commodity. This criticism is again based on a misunderstanding of Marx's theory and its logical method.

As discussed in Part I, value in Marx's theory is first and foremost a macro theory about the total value of the total commodity product produced in the economy as a whole, which is used to determined the total surplus-value produced in the economy as a whole. Secondarily, Marx's theory is about prices of production which is an industry-wide concept – the gross annual industry revenue. If two commodities are produced in the same industry, they will both be included in the gross annual industry revenue. Therefore, joint products pose no problem whatsoever in Marx's theory of value and surplus-value and prices of production.

The division of a total industry revenue into individual parts for the joint products produced in that industry is an internal decision made by firms in the industry. This division of the total industry revenue is not regulated by values, but the total industry revenue prior to its division is regulated by values and the equalisation of the rate of profit.

2.4   *Interdependence of M and r and Circular Reasoning*

Another Sraffian criticism of Marx's theory is this: the initial M cannot be taken as given and used to determine the rate of profit, because M itself depends on the rate of profit; that is, M is equal to the prices of production of the inputs, and prices of production depend in part on the rate of profit. Because of this

interdependence (it is argued), M and r must be determined simultaneously; otherwise the reasoning would be circular.[27]

I argue, to the contrary, that Marx's reasoning between M and r is not circular. M is taken as given, as a *pre-existing known datum*, without reference to r. No explanation of M is necessary in order use the pre-existing M to explain the resulting ΔM and r. Marx's theory proceeds from the *known* M (capital advanced and consumed) to the *unknowns* M′ (capital recovered), ΔM (surplus capital recovered), the general rate of profit, and prices of production. This logic is sequential not circular.

As discussed in Chapter 1, many other economic theories throughout the history of economics (Smith, Mill, Keynes, etc.) also took money costs as given in their theories of value. Therefore, the Sraffian critique, if it were valid (it is not), would also apply to all these other theories as well. All these other theories, which are also based on given money costs and sequential determination, would also be illegitimate. According to the Sraffians, the only legitimate economic theory is one based on simultaneous determination and with given physical input-output quantities (i.e., Sraffian theory). Such methodological dogmatism is inappropriate and unwarranted in the endlessly conflicted and controversial field of economics; especially since simultaneous determination requires such unrealistic assumptions (as discussed in the previous section). Different types of economic theory should be allowed, including those based on given money costs and sequential determination; and the relative validity of different theories should be evaluated on the basis of their relative explanatory power (see the last chapter of this book).

Wicksell is celebrated by Sraffians for having recognised that the value of capital depends on the rate of interest, and thus that the value of capital cannot be used to determine the rate of interest; that would be 'arguing in a circle'. However, Wicksell defined and determined the 'value of capital' in an entirely different way from Marx. Rather than defining capital as the actual quantity of money capital advanced and recovered, Wicksell defined the value of capital as the *discounted net present value of the expected future returns* over the lifetime of the capital goods (i.e., the expected future ΔM's, which are taken as given), with the prevailing rate of interest which is taken as given as the discount rate. With this different definition of capital, the value of capital obviously cannot be determined without knowledge of the rate of interest.

However, in Marx's theory, the value of capital is *not* the discounted net present value of expected future profits; rather the value of the initial capital

27   Sraffa 1960, p. 6.

is instead the actual money capital advanced at the beginning of the circuit of capital (M), as a known quantity, independent of the prevailing rate of interest and the expected future ΔM's. Therefore, Wicksell's criticism of 'circularity' does not apply to Marx's theory.

Furthermore, Wicksell himself took the initial capital invested as given – V_0 in his algebraic model, the initial cost of the grapes in his wine-making example.[28] Although Wicksell did not call V_0 'capital', it was in fact the initial capital advanced to purchase the grapes. And he took this initial capital as *given*, along with the expected future earnings from this investment and the prevailing rate of interest, in order to determine what he called the 'value of capital' (see equation 4 on p. 179). As we have seen, Marx also took the initial capital invested as given, but he used this given initial capital, along with the labour theory of value, for an entirely different purpose: to determine the total value and total surplus-value of the total commodity product (total M′ and total ΔM). If it is a legitimate logical method for Wicksell's theory to take the initial capital investment as given, then it is also a legitimate logical method for Marx's theory to do so.

Conclusion

This chapter has discussed the two main versions of the standard interpretation of Marx's theory: the Bortkiewicz-Sweezy interpretation and the Sraffian interpretation. Both of these theories come to largely negative conclusions (especially the latter) concerning the logical consistency of Marx's theory of prices of production, especially the failure to transform the inputs of constant capital and variable capital from values to prices of production. However, I argue that these standard interpretations are misinterpretations of Marx's logical method, and that if Marx's method is correctly interpreted (prior determination of the total surplus-value, single system, circuit of money capital, initial money capital taken as given), then Marx's theory of prices of production in Volume III is logically complete and consistent with his theory of value and surplus-value in Volume I. Marx did not fail to transform the inputs of constant capital and variable capital because such a transformation is not supposed to be made in Marx's theory; instead, the same quantities of constant and variable capital are taken as given in both the macro theory of the total surplus-value and in the micro theory of prices of production – the actual quantities of money capital

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28   Wicksell 1934, pp. 178–83.

advanced to purchase means of production and labour power at the beginning of the circuit of money capital. One does not need to 'correct' Marx's theory – which is based on the sequential determination of total value, total surplus-value, the general rate of profit, individual industry prices of production (in that order) – and replace it with an entirely different theory based on simultaneous determination of input prices and output prices and the rate of profit. In this case, the 'cure' very definitely kills the patient, even though the patient is not even sick!

In recent decades, there have been a number of re-interpretations of Marx's theory of the transformation problem that have challenged to varying degrees these standard interpretations. The remaining chapters of Part II will discuss the most important of these recent re-interpretations of Marx's theory of prices of production and the transformation problem.

Appendix. Comparison of Interpretations of Marx's Theory: Sraffian and Macro-Monetary

This short Appendix presents the following table, which compares algebraically the macro-monetary interpretation of Marx's theory presented in this book and the Sraffian interpretation.[29]

We can see first of all the striking differences in the two interpretations of Volume I, especially the different variables to be determined – the total surplus-value (i.e., total ΔM) in the economy as a whole vs. individual labour values. In addition, the initial givens are fundamentally different – quantities of money capital and socially necessary labour time (and the MELT) vs. physical quantities (input-output and labour coefficients). Finally, the method of determination – a sequence of logically connected equations vs. a system of simultaneous equations.

The differences with respect to Volume III are almost as striking. The initial givens are again fundamentally different – the total surplus-value, the general rate of profit, and individual quantities of money capital advanced *vs.* the same physical quantities as in Volume I plus the real wage. The variables determined appear to be more similar – both interpretations determine 'prices of production' – but there is a significant difference which was discussed in Chapter 2: in the macro-monetary interpretation, prices of production are defined as 'gross

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29   To reduce the number of variables in the table, I have assumed that capital advanced = capital consumed. The equations in Chapter 2 do not make this simplifying assumption.

	Macro-monetary interpretation	Sraffian interpretation
Volume 1	**Total economy**	**Individual value system**
Givens	total money capital (M = C + V) total current labour (L) money value produced per hour (m)	input-output coefficients (a_{ij}) labour coefficients (l_i)
Variables determined	total value-price (P) total surplus-value (S) (ΔM) general rate of profit (R)	*unit* labour-values (λ_i)
Equations of Determination	P = C + N = C + mL S = N − V = mL − V R = S / M	$\lambda_i = \lambda_j\, a_{ij} + l_i$ (system of simultaneous equations)
Volume 3	**Individual industries**	**Individual price system**
Givens	total surplus-value (S) rate of profit (R) industry money capitals $(M_i = C_i + V_i)$	input-output coefficients (a_{ij}) real wage (b_j) labour coefficients (l_i)
Variables determined	industry prices of production (PP_i)	*unit* prices (p_i) price rate of profit (r)
Equations of Determination	$(PP_i) = (C_i + V_i) + R\,(M_i)$	$p_i = (p_j\, a_{ij} + p_j\, b_j\, l_i)\,(1+r)$ (system of simultaneous equations)
Method of determination	sequential	simultaneous

annual industry revenue' (the sum of total annual industry costs plus the average annual profit), whereas in the Sraffian interpretation prices of production are defined as unit prices (i.e., price per unit of output). And the equations are again completely different – an independent equation for each industry, which are connected by the predetermined general rate of profit *vs.* a system of simultaneous equations, in which the rate of profit is determined simul-

taneously with input and output prices. One can also see that the Sraffian re-interpretation of Marx's theory eliminates labour values altogether (there are no 'price-value transformation coefficients', as in the Bortkiewicz-Sweezy interpretation), and turns Marx's theory into Sraffian theory, which determines (unit) prices of production and the rate of profit simultaneously and from the given physical quantities.

Overall, all these differences can be summarised succinctly in the bottom line: the logical method of *sequential* determination (macro to micro and known M to unknowns M′ and ΔM) vs. the logical method of *simultaneous* determination.

Shaikh's Iterative Interpretation

One of the first authors to defend Marx's theory against the standard criticisms discussed in the previous chapter was Anwar Shaikh in a series of papers.[1] Shaikh's interpretation is similar to the Bortkiewicz-Sweezy interpretation discussed in the previous chapter – a 'dual system' interpretation ('value system' and 'price system'), with a three-department reproduction scheme as the analytical framework, and the same system of simultaneous equations (three equations in four unknowns), although these equations are not explicitly presented by Shaikh. All the labour value magnitudes at the beginning of the transformation process are the same as Sweezy's magnitudes. Shaikh also includes the corresponding variables in price terms on the assumption that 1 hour = £2.[2]

Shaikh argues that Marx's presentation of his theory of prices of production in Part 2 of Volume III of *Capital* is *not incorrect*, but is instead only *incomplete*. It is only the first step of a multi-step iterative process, which needs to be completed, and which Shaikh proceeds to do, and the end results of this iterative process are long-run prices of production and the associated rate of profit. Shaikh argues that his iterative method is not an alternative to Marx's method, but is instead a repeated application of Marx's method. Shaikh agrees that Marx did not transform the inputs of constant capital and variable capital, but he argues that these inputs can be transformed by an extension of what Marx did do.

There are two main differences between Shaikh's interpretation and the Bortkiewicz-Sweezy interpretation, which unfortunately turn out to be not very significant. In the first place, Shaikh assumes a different invariance postulate – that total price of production = total value, rather than total profit = total surplus-value. However, this difference affects only the absolute magnitudes of the prices, and does not affect relative prices and the rate of profit. And secondly, Shaikh's method of solving the system of equations is an iterative method rather than a simultaneous algebraic method. However, Shaikh's iterative method comes to the same quantitative conclusions as the Bortkiewicz-

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1 Shaikh 1977, 1981, 1982, 1984.
2 Shaikh's interpretation of the transformation process is illustrated in Table 4 of his 1977 paper, on p. 132.

Sweezy simultaneous interpretation. Indeed, the iterative interpretation is only an alternative computational method of solving a system of simultaneous (homogenous) equations. The system of simultaneous equations and the solutions to this system remain essentially the same.

I will first briefly review Shaikh's iterative method in the first section, and then I will discuss various criticisms of Shaikh's interpretation.[3]

1   Iterative Method

Shaikh's iterative procedure starts with 'exchange at values' (Step 1A). The rate of surplus-value is assumed to be the same in all industries (= 2/3), and the amount of surplus-value produced in each industry is determined by the product of this rate of surplus-value and the variable capital in each industry $[S_i = (RS) V_i]$. Step 1B then illustrates 'Marx's transformation'. The value rate of profit is determined by the total surplus-value divided by total constant capital and variable capital (evaluated in terms of values), and the average profit of each industry is then determined by the product of this value rate of profit and the constant and variable capital invested in each industry. Finally, the price of production for each industry in this first iteration is the sum of the average profit and the constant and variable capital invested in each industry. Algebraically (all variables evaluated in terms of values):

$$VRP = S / (C + V)$$
$$P_i = (C_i + V_i) + VRP (C_i + V_i)$$

Steps 2A and 2B then illustrate Shaikh's 'extension' of Marx's transformation as follows: Step 2A first adjusts the inputs of constant capital and variable capital to the prices of production of Departments I (means of production) and II (means of subsistence) derived in the previous Step 1B. Step 2B then determines the new prices of production that result from equalising the profit rate over the revised magnitudes of constant and variable capital, in the same way as Step 1B.

A key assumption of this iterative procedure is the invariance postulate (or 'iteration rule') that the total price (for the economy as a whole) remains constant in the second step and in all subsequent steps, and equal to the total

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3   Morishima 1973 and Gouverneur 1983 have also presented similar 'iterative' interpretations of the transformation problem, with less theoretical grounding.

direct price (the total value expressed in money terms) in the first step. As already mentioned, this assumption is different from the Bortkiewicz-Sweezy's invariance postulate (total profit = total surplus-value).

Another key assumption is that in the second step and in all later steps the total profit (for the economy as a whole) is determined differently from Step 1A. The total profit (or total surplus-value) is not determined by the product of variable capital and the rate of surplus-value (as in 1A), but is instead determined by subtracting the *revised* total constant and variable capital from the total price. Since total price remains constant, and constant capital and variable capital vary from iteration to iteration, total profit will also vary inversely to constant and variable capital. This procedure is repeated step after step until the changes in prices of production between two steps becomes negligibly small and prices of production converge to long-run equilibrium prices. In every step, the physical quantities of means of production, means of subsistence, and luxury goods remain the same, and are in effect the fundamental givens in this iterative procedure, from which values and prices of production are derived, similar to the Bortkiewicz-Sweezy interpretation.

The end results of this iterative process are prices of production that are the same as those derived from the Bortkiewicz-Sweezy method (except for a proportionality factor due to the different invariance postulate). Shaikh calls the Bortkiewicz-Sweezy prices the 'correct prices', which his method is able to replicate. The rate of profit is also the same for both methods (= 25%). The advantage of this iterative method, according to Shaikh, is that these results are obtained, not by an alternative to Marx's transformation procedure, but by successive applications of Marx's procedure. The usual Bortkiewicz-Sweezy method 'jumps over' Marx's transformation procedure and goes directly from values to long-run prices of production and the associated rate of profit, and thus Marx's transformation plays no role in the determination of prices of production and the rate of profit. Shaikh argues to the contrary that according to his method, Marx's transformation plays a crucial connecting role between values and prices of production.

2   Labour Theory of Value Essential?

However, in a quantitative sense, Shaikh's interpretation of Marx's theory is not really an alternative to the Bortkiewicz-Sweezy interpretation, because it comes to the same quantitative conclusions concerning (relative) prices of production and the rate of profit (e.g., = 25%). Shaikh argues that, in spite of these identical quantitative conclusions, Marx's theory provides much more

than just the determination of these quantitative magnitudes; Marx's theory also explains the deeper meaning of these price quantities – that prices are the monetary expression of labour times, a reflection of value in the sphere of circulation. Shaikh also argues that his iterative interpretation shows how prices of production are derived from labour values by extending Marx's transformation procedure.

However, I argue that Shaikh's interpretation is an inaccurate interpretation of Marx's theory, and that Shaikh's interpretation does not demonstrate that prices of production are derived from labour values by this iterative method. Shaikh makes this claim because labour values are his starting point for his iterative derivation of prices of production. However, using this iterative method, the initial magnitudes could be *anything*, i.e., could be *any* arbitrary set of numbers, and the end results would be the same prices of production and the *same* rate of profit.[4] The insignificance of the initial magnitudes is one of the characteristics of using this iterative method to solve a system of homogenous simultaneous equations. The iterative method is the method used by computers (e.g., Excel) to solve homogenous simultaneous equations. The computer 'guesses' at the initial values, and then calculates successive approximations of the solutions iteratively until the solution is found.

The insignificance of the initial magnitudes does not inspire confidence that labour values are the real causal factors in the determination of prices of production and the rate of profit. The real causal factors in Shaikh's interpretation seem to be the physical quantities that remain the same for all the different initial magnitudes and through all the iterations for each set of initial magnitudes. The real causal factors do not seem to be the insignificant initial magnitudes, but rather the unchanging physical quantities. The labour theory of value 'plays a role' in Shaikh's interpretation of the determination of prices of production, but it is not an essential role; it is only a computational role, and could be replaced by an infinite number of other initial magnitudes, and still (relative) prices of production and rate of profit would be the same. Shaikh's iterative procedure looks like sequential determination, but it is not really. It is sequential determination within any given iteration; but over all iterations, it is only a computational method for simultaneous determination.

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4   Hodgson 1981, pp. 91–2, Berg 1988.

3   Total Profit ≠ Total Surplus-Value

Shaikh acknowledges that one result of his interpretation that appears to contradict Marx's transformation is that, at the end of the process, total profit is *not* equal to the total money surplus-value in Step 1. However, Shaikh argues that the apparent difference between total money surplus-value and total profit in the accounts of capitalist enterprises is offset by implicit *revenue gains* (or losses) in the accounts of capitalist *households*.[5] Therefore, in this broader sense of capitalist society as a whole (including capitalist households), total capitalist income is indeed equal to total money surplus-value. For example, if capitalist enterprise total profit is less than total money surplus-value, this means that the price of production of luxury goods is less than their value, so that when capitalists purchase these luxury goods at cheaper prices, they receive an implicit revenue gain. When this implicit revenue gain is added to capitalist enterprise profit, then total capitalist income is equal to total money surplus-value for capitalist society as a whole. Shaikh calls this implicit revenue gain the 'conversion of capital into revenue'.

I find Shaikh's explanation of how his interpretation can be compatible with Marx's conclusion that total profit = total surplus-value to be highly speculative and very dubious. Marx never said anything about 'capitalist households' in his published writings on this subject. He never suggested in his conclusion that total profit = total surplus-value includes implicit revenue gains (or losses) for capitalist households, and that the transformation process would normally involve such a 'conversion of capital into revenue' (or vice versa). All the textual indications are that, when Marx said 'total profit = total surplus-value', he meant the profit of capitalist enterprises, and did not include implicit revenue gains or losses of capitalist households, which are never mentioned in this context (if ever at all). Shaikh quotes only one passage from Marx to support his interpretation, which is the following:[6]

> This phenomenon of the conversion of capital into revenue should be noted, because it creates the *illusion* that the amount of profit grows (or in the opposite case decreases) independently of the amount of surplus-value.[7]

5   Shaikh 1981, pp. 282–7 and 1984, pp. 52–7.
6   Shaikh 1984, p. 55.
7   Marx MECW, v. 33, p. 272 [TSV, v. III, p. 345].

Shaikh suggests that this passage shows that Marx was aware of the phenomenon of 'conversion of capital into revenue' and he implies that this conversion has to do with the transformation of values into prices of production and the resulting inequality (in his interpretation) between total profit and total surplus-value. However, this passage provides no such support for Shaikh's interpretation. This passage is from Chapter 22 of *Theories of Surplus-Value* (in Volume 3) on the classical economist George Ramsay. This chapter mentions the transformation of values into prices of production only once and in passing (p. 333), twelve pages before the passage quoted by Shaikh. This chapter is mainly about the effect of a change in the value of constant capital on the amount and the rate of profit. Ramsay had argued that a change in the value of constant capital affected both the amount and the rate of profit, which makes it appear as if profit has another source besides surplus labour, and Marx of course criticised this mistaken view. Marx argued instead that, for example, a decline in the value of constant capital does not affect the amount of profit, but it does increase the rate of profit because less constant capital has to be invested. Such a decline of constant capital also enables capitalists to convert a portion of the previous constant capital into personal revenue that could be spent on consumer goods. However, this conversion of capital into revenue discussed in this chapter has nothing to do with the transformation of values into prices of production, nor with the resulting inequality between total profit and total surplus-value (according to Shaikh's interpretation), but instead has to do with changes in the prices of the means of production due to a change of productivity in the production of means of production.

4   Divergencies and Limits

Shaikh also argues that the divergence between total money surplus-value and the total profit of capitalist enterprises is *limited by value categories*, and in particular this divergence is determined by two factors: (1) the divergence of the prices of production of luxury goods and the values of these goods, and (2) the percentage of the total money surplus-value that is spent on luxury goods. If all the money surplus-value is consumed, then the divergence between total money surplus-value and total enterprise will be the maximum; and if none of the total money surplus-value is consumed (i.e., all the surplus-value is accumulated), then the divergence will be zero and total money surplus-value will be equal to total enterprise profit. Therefore, according to Shaikh, the labour theory of value still provides the determination of the total surplus-value and also provides the determination of the divergence of total profit from

total surplus-value and the limit of this divergence. Total profit in the sphere of circulation is 'autonomous' from the total surplus-value in the sphere of production, but this autonomy is only 'relative', and it ultimately limited by the total surplus-value and determined by the labour theory of value.

However, this 'limit' on the divergence of total profit from total surplus-value is again a mathematical artifact of the iterative method of solving simultaneous equations; there is nothing unique about labour values in the determination of this 'limit'. Once again, we could choose any set of initial magnitudes for constant capital and variable capital, which I will call 'not-values' (for fun and emphasis). We could use these not-values to calculate not-surplus-value and the not-rate of profit. As we have seen, we could then go through a similar iterative process (and the same invariance postulate) and arrive at the *same prices of production and the same rate of profit* as we did starting with labour values. We would again have a similar result that the deviation of the total profit from the total not-surplus-value depends on two similar factors: (1) the divergence of the prices of production of luxury goods from their not-values, and (2) the percentage of the total profit that is spent on these luxury goods. Shaikh presents the deviation of total profit from total surplus-value as if the total surplus-value is the primary variable, and total profit is a secondary variable that deviates from the total surplus-value according to the two factors mentioned above. However, since similar 'limits' can be given for any other set of initial magnitudes, the real primary variable in these relations is total profit (determined by the physical quantities), and the total surplus-value and the total not-surplus-value are the secondary variables, which are different deviations from the total profit, depending on which of the initial magnitudes are chosen.[8]

Shaikh also argues that the 'transformed rate of profit' (i.e., the price rate of profit) in the sphere of circulation will closely reflect the value rate of profit in the sphere of production.[9] But this argument is based on the assumptions just discussed concerning the determination of the limit of the deviation of total profit from total surplus-value, and thus is subject to the same objections. In

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8   Glick and Ehrbar 1987, pp. 310–12, argue that Shaikh's relation between the total profit and total surplus-value depends on the assumption of equal rates of growth in all sectors. They present examples with unequal rates of growth across sectors, which demonstrate that there is no relation between total profit and total surplus-value. My criticism is more fundamental – that even if equal rates of growth are assumed, the alleged 'dependence' of the deviations of total profit from total surplus-value is not unique to value and surplus-value, but is also true for any set of initial magnitudes.

9   Shaikh 1981, pp. 287–92 and 1984, pp. 59–62.

Shaikh's iterative interpretation, the 'transformed rate of profit' is the fundamental variable, and the value rate of profit (and the not-value rate of profit, etc.) deviates from this fundamental transformed rate of profit, depending on the initial magnitudes.

5   Change of Value Added

Another result of Shaikh's interpretation which contradicts Marx's theory (and which Shaikh has not discussed), is that the value added component of the total price also changes from iteration to iteration and over the whole process. That is, the value added component of the total price of production is not equal to the value added component of the total value (or 'direct price'), even though the quantity of living labour does not change. In Shaikh's example in, value added in value terms is £1000, and value added in final prices of production is £910.[10] Therefore, according to Shaikh's interpretation (and contrary to Marx's theory), the value added component of the price of commodities is not dependent solely on living labour, but also depends on some other factor, that has to do with the distribution of surplus-value and the equalisation of the rate of profit.

6   Conclusion

In summary, I conclude that Shaikh's interpretation is not a very promising defense of Marx's theory, nor a promising path for the further development of Marx's theory. Shaikh's interpretation is essentially the same as the Bortkiewicz-Sweezy interpretation, with a 'dual system' and simple reproduction as the logical framework and the same system of simultaneous equations to be solved for prices of production and the rate of profit. This is not a different interpretation of the logical structure of Marx's theory, but only a different method of solving this system of simultaneous equations. The quantitative conclusions of prices of production and the rate of profit reached by Shaikh are the same as the conclusions reached by Bortkiewicz-Sweezy, except for a proportionality factor. Shaikh argues that Marx's theory also explains how these prices of production are derived from values, but this argument is undermined by the fact the same prices of production could be derived from any arbitrary initial magnitudes for constant capital and variable capital (e.g., from not-values).

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10   Shaikh 1977, p. 132, Table 4.

Furthermore, only one of Marx's aggregate equalities is satisfied in Shaikh's interpretation, as in the Bortkiewicz-Sweezy interpretation. Shaikh assumes an invariance postulate of total price of production = total value, but total profit ≠ total surplus-value, which contradicts Marx's conclusion. Shaikh attempts to explain this contrary result by implicit revenue gains (or losses) by capitalist households, which result from buying luxury goods at prices that are different from their values. But this explanation is very speculative and is not supported by any textual evidence. Shaikh also attempts to explain the limits of the divergence between total profit and total surplus-value, but again this argument is undermined by the fact that similar 'limits' could be derived for any arbitrary initial magnitudes. The total value added also changes according to Shaikh's transformation, even though total current labour remains the same, again contradicting Marx's theory.

The basic reason for these problems in Shaikh's interpretation is that he essentially accepts the Bortkiewicz-Sweezy interpretation of Marx's logical method. As long as one accepts the basic Bortkiewicz-Sweezy framework (dual system, simple reproduction, system of simultaneous equations), then it is impossible to escape the conclusions that follow from this framework. But I argue that the Bortkiewicz-Sweezy framework is a fundamental *misinterpretation* of Marx's logical method. Missing are the key features of Marx's logical method discussed in Part I of this book: the prior determination of the total surplus-value and the general rate of profit, a single system throughout, the circuit of money capital as the logical framework, with the initial money capital M taken as the initial given in the theory of how this initial pre-existing M becomes M+ΔM. Therefore, the conclusions that follow from the Bortkiewicz-Sweezy misinterpretation do not in fact apply to Marx's theory, correctly interpreted.

The New Interpretation

This chapter discusses the 'New Interpretation' (NI) of Marx's theory, which was developed independently by Duncan Foley and Gérard Duménil in the early 1980s. I will discuss three versions of the New Interpretation presented by Foley, Duménil, and Simon Mohun, which are generally the same, but with some differences.[1] (I am grateful to Foley, Duménil, and Mohun for extensive and productive discussions over the years).

The New Interpretation is an important contribution to Marxian scholarship. However, I will argue in this chapter that the NI 'only goes halfway' in breaking away from the standard 'physical quantities' interpretation of Marx's theory. The NI takes variable capital as given, as the actual money wage, which is assumed to remain invariant in the transformation of values into prices of production, similar to my interpretation; but it derives constant capital from given physical quantities of means of production, first as their hypothetical value and then as their actual price of production, as in the standard interpretation. Therefore, I argue that there is a key methodological inconsistency in the NI – the different ways in which variable capital and constant capital are determined. Furthermore, because constant capital is not taken as given, the rate of profit cannot be determined as in Marx's theory, by the ratio of the total surplus-value to the total capital invested, but is instead determined in the NI by the Sraffian method of a physical input-output matrix. Therefore, I conclude that the NI should instead 'go all the way' to a monetary interpretation of the initial givens in Marx's theory – both constant capital and variable capital.

1 Foley's New Interpretation

The version of the New Interpretation by Duncan Foley is the most similar to my own interpretation. I will first briefly summarise the main characteristics of Foley's interpretation and then discuss the similarities and differences with

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1 Foley 1982, 1986a, 2000; Duménil 1980, 1983–4, 1986; Mohun 2000. Other important papers which present the New Interpretation include Lipietz 1982 and Glick and Ehrbar 1989. The Glick and Ehrbar paper is especially helpful in understanding the mathematical aspects of the New Interpretation.

my interpretation. Foley's interpretation can be summarised as consisting of the following main points:

(1) *Money* and the monetary nature of Marx's theory are emphasised, and the 'monetary circuit of capital' is interpreted as the general logical framework of Marx's theory, represented by the familiar formula M – C ... P ... C′ – M+ΔM. According to Foley, this circuit of money capital corresponds to actual flows of money capital which are recorded in the bookkeeping accounts of capitalist enterprises. Consistent with this emphasis, Foley defines the key variables in Marx's theory of surplus-value – constant capital, variable capital, value added and surplus-value – in terms of money, as the stocks and flows of money capital within the general framework of the circuit of money capital.[2]

(2) Marx's theory of surplus-value (ΔM) is interpreted as primarily a *macroeconomic* theory about the total surplus-value produced in the economy as a whole.

(3) It is argued that the fundamental assumption of Marx's *labour theory of value* is that the value added component (VA) of the price of commodities in the economy as a whole is proportional to the total current labour ('living labour') in the economy as a whole:

> ... the core content of Marx's labour theory of value was that the expenditure of living labour in production ***adds money value*** to the inputs to production.[3]

We will see below (#8) that the factor of proportionality is the MELT (i.e., the monetary expression of labour time).

(4) It is further assumed that the *VA component is the same* (i.e., remains invariant) in the determination of both values and prices of production.

(5) It is also assumed that the *money wage* is taken as given, as a datum, as the actual money wage paid in the economy (in principle), and that this actual money wage is the *same quantity* in the determination of both value / surplus-value and price of production / profit.

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2   Foley 1982, p. 38; 1986a, Chapter 3.
3   Foley 2000, p. 21.

(6) It follows straightforwardly from (4) (value added invariant) and (5) (money wage invariant) that the *total profit* = *total surplus-value* for the economy as a whole, i.e., that the total profit is proportional to the total unpaid labour time. Foley emphasises that this is the main conclusion of Marx's theory, which demonstrates that profit is the result of the exploitation of workers.

(7) Marx's *aggregate price-value equality* is redefined in terms of the *value added* component of the value and price of production of the gross product, which is satisfied by assumption (4). Therefore, both of Marx's aggregate equalities, with the price-value equality redefined in this way, are always satisfied.

(8) Because of the monetary nature of Marx's labour theory of value, the *'monetary expression of labour time'* (i.e., the MELT) is an important variable, which establishes a link between money value produced and labour performed, and the MELT is defined as the ratio of the value added component of the price of the gross product (VA) to the total current labour (L):

$$MELT = VA / L.$$

Both VA and L are taken as given, as actual observable magnitudes. In matrix notation, this definition of the MELT is:

$$MELT = p(I - A)x / lx$$

where p is the price vector, A is the input-output matrix, x is the gross output vector, and l is the labour input vector. Since the MELT is the money value produced per labour hour, the inverse of the MELT is the value of money (VM) (the labour hours represented by a unit of money):

$$VM = 1 / MELT = L / VA = lx / p(I - A)x$$

(9) The *value of labour power* (VLP) is another key variable, and is defined, *not* in terms of the labour time required to produce the means of subsistence (as in the standard interpretation), but is instead defined in terms of the labour time *represented by the money wage*, as the ratio of the money hourly wage rate (w) to the MELT (money value added produced per hour), i.e., the product of the money wage and the value of money:

$$VLP = w / MELT = w (VM)$$

Thus the VLP is defined as a fraction which is equal to the wage share of value added and is also equal to the fraction of the working day that is paid labour.

(10) The macroeconomic theory of surplus-value and exploitation summarised above is usually combined with the Sraffian microeconomic theory of relative prices and the rate of profit, with a system of simultaneous equations, and with two somewhat novel assumptions (especially the second one) that are consistent with the above NI macro theory: (1) the money wage rate rather than the real wage is taken as given, and (2) the normalisation condition for this system of equations is the definition of the MELT in matrix notation given above: $p(I - A)x = (MELT)lx$ (i.e., the value added component of the price of production of the gross product is proportional to the quantity of living labour).

I agree of course with Foley's emphasis on the monetary nature of Marx's theory and on the macroeconomic nature of Marx's theory, and with the invariance of value added, variable capital, and surplus-value in the transformation of values into prices of production. I also agree that the conclusion that total profit = total surplus-value is the most important conclusion of Marx's theory, and this is a very important agreement between our interpretations. The following subsections will discuss further these similarities between our interpretations of variable capital and the most important differences with respect to constant capital and the rate of profit.

1.1   *Variable Capital*

I agree with Foley's interpretation of the actual money wage as the wage variable in Marx's theory of surplus-value, not the real wage, nor the labour time embodied in the real wage. Foley does not use the term variable capital much, but the money wage rate in his interpretation multiplied by the number of worker-hours is equal to the variable capital in my interpretation ($V = wl$). Furthermore, the *same money wage rate is taken as given* in the theory of surplus-value and in the theory of prices of production and profit, as in my interpretation of variable capital and contrary to the standard interpretation.

Foley's justification for assuming the money wage rate as given rather than the real wage is that this is a more accurate representation of the *actual exchange relation* between capitalists and workers.

> Workers in capitalist society do not bargain for, or receive, a bundle of commodities as payment for the labour power, ***they receive a sum of money***, the money wage, which they are then free to spend as they wish …[4]

4   Foley 1982, p. 43. Keynes made a similar criticism of the (neo)classical theory of the labour

I agree with this argument, and I would add that the same argument also applies to constant capital. Similar to variable capital, Marx's concept of constant capital refers to the *actual* quantities of money capital advanced to purchase means of production from other capitalists, and thus is a more accurate representation of the actual exchange relation between capitalists who purchase means of production and capitalists who produce and sell means of production. Means of production, like labour power, are purchased with actual quantities of money, not with hypothetical quantities of labour time, nor with bundles of goods. I also agree with Foley's interpretation of the *value of labour power* as derived from the actual money wage rather than the real wage. My interpretation of *necessary labour time* (= V / m) presented in Part 1 is similar to Foley's value of labour power (which is the ratio of necessary labour time to the total working day).

1.2   *Constant Capital*

However, and here is where our differences begin, Foley's interpretation determines constant capital differently from variable capital, and hence determines constant capital differently from my interpretation. In fact, constant capital is hardly considered at all in the NI. The NI is concerned almost entirely with value added and its division into wages and profit (which I agree should be the main emphasis). But when constant capital is considered, it is not taken as given as the actual quantity of money advanced to purchase means of production (as in my interpretation), but is instead derived from given physical quantities of means of production (as in the standard interpretation), first as the hypothetical value of the given means of production and then as the actual price of production of the same given means of production. Thus in Volume I, there are contradictory assumptions: variable capital is assumed to be an *actual* magnitude, but constant capital is assumed to be a *hypothetical* magnitude. As a result, constant capital *changes* in the transition from the theory of surplus-value in Volume I to the theory of prices of production in Volume III, from the hypothetical value of the means of production to their actual price of production, as in the standard interpretation. I argue that this is a *fundamental methodological inconsistency* in Foley's interpretation (and in the NI in general) between the determination of constant capital and the determination of variable capital. Variable capital is taken as given in terms of actual money

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market – that it assumed that the wage agreement between capitals is in terms of the real wage; Keynes insisted, similar to Foley, that the actual wage agreement is in terms of the money wage.

capital, but constant capital is derived from given physical quantities, first as a hypothetical quantity and then as the actual quantity. I argue that constant capital and variable capital should both be determined in the same way because they are both particular forms of the general concept of capital (money which becomes more money) and they are the two components of the initial money capital (M) advanced at the beginning of the circuit of money capital (**M = C + V**). Nowhere in Marx's writings is there a suggestion that constant capital and variable capital are or should be determined in different ways. And there is extensive textual evidence (reviewed in Chapter 4) that Marx determined constant capital and variable capital in the same consistent way – taken as given as the actual quantities of money capital advanced to purchase means of production and labour power in the real capitalist economy. Foley states in general that the variables in Marx's theory refer to actual quantities of money capital on the accounting books of capitalist enterprises, but his definition of constant capital contradicts this general principle.

Foley's inconsistent treatment of constant capital and variable capital could be illustrated with the following version of the circuit of capital:

$$\mathbf{M_v} - \mathbf{C_{lp}}$$
$$... \, \mathbf{P} \, ... \, \mathbf{C'} - \mathbf{M'}$$
$$\mathbf{Q_{mp}}$$

We can see that Foley's interpretation has *two different starting points*, not just one. For variable capital, the starting point is a given quantity of money capital advanced to purchase labour power ($\mathbf{M_v}$), which remains invariant in the transition from the macro theory of Volume I to the micro theory of Volume III, as in my interpretation. For constant capital, on the other hand, the starting point is a given quantity of means of production ($\mathbf{Q_{mp}}$), which is used to determine first the hypothetical values of these means of production in Volume I and then the actual prices of production of these same means of production in Volume III, as in the standard interpretation.

In the following passage, Foley seems to suggest that Marx took as given the entire money capital invested in capitalist enterprises – including both the constant capital and the variable capital – rather than deriving these components of capital from given physical quantities.

> One striking difference between Marx's treatment of the problem and later treatments is that Marx describes the two economies solely in terms of the accounts of the capitalist firms; *he does not specify the actual production and distribution of use-values.* Later treatments, perhaps in the

name of theoretical rigor, describe both economies in terms of the pro-
duction and distribution of particular use-values, and *derive* the accounts
of the capitalist firms from this assumed data on production and dis-
tribution. When one holds constant the production and distribution of
use-values, it turns out that ... aggregate value added and aggregate profit
cannot both be the same in the two economies. I want to suggest that
Marx had good theoretical reasons for describing the two economies in
terms of the accounts of the capitalist firms rather than in terms of the
production and distribution of use-values. The social facts relevant to
struggle and change in a capitalist society concern the production and
distribution of value itself, and the actual production, distribution, and
consumption of use-values that follow form these struggles take a second-
ary place.[5]

Foley's argument could be applied to constant capital as well as to variable
capital. There are 'good theoretical reasons' for defining constant capital, as
well as variable capital (and surplus-value), in terms of the money 'accounts
of capitalist firms' rather than in terms of physical use-values and hypothetical
quantities of money. Why should constant capital be treated differently from
variable capital? Foley's main argument for *not* taking money constant capital
as given, along with money variable capital, is that the past labour derived
from the given money constant capital ($Lp = C / m$) does not correspond to
the labour time in any particular bundle of goods, i.e., does not correspond
either to the past labour time required to produce the means of production
or to the current labour time required to produce the means of production.[6]
But that is my point. Yes, it is true that past labour defined in this way does
not correspond to the labour time required to produce any particular bundle
of goods; instead the labour time required to produce the means of production
has already been represented as the constant capital advanced to purchase the
means of production, and it is this already existing actual constant capital that
is a determinant of the value of the *commodities produced by capital*. Past labour
derived in this way corresponds to the 'general social labour time' *represented
by the money constant capital*, which exists independently of any particular
bundle of means of production. But this is not a problem. This is the way
the values of commodities as products of capital are determined, as the sum
of already existing value (constant capital) plus the new value produced by

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5   Foley 1982, p. 44.
6   Foley 2000, pp. 24–5.

current labour. This is the way past labour plays a role in the determination of the value of commodities produced by capital – through the money constant capital advanced to purchase means of production.

Furthermore, the money variable capital (which the NI does take as given) also does not correspond to the labour time in any particular bundle of goods, i.e., does not correspond the labour time required to produce the wage bundle. Variable capital (like constant capital) is an independently existing quantity of money capital, and necessary labour time is the labour time represented by this independently existing money capital (NLT = V / m). And yet the NI takes the money variable capital as given. So this should not be an objection to taking the money constant capital as given. Constant capital and variable capital would then be taken as given in the same consistent way, as they should be.

In discussions with Foley, he has also argued that constant capital cannot be defined as a unique magnitude, because it depends on the *degree of integration* within industries. The same physical production could be carried out with different levels of constant capital outlay, depending on the degree of integration. But this 'ambiguity' of constant capital is not a problem in Marx's theory. In Marx's theory, the constant capital outlays are *what they actually are*, and whatever they actually are is transferred to the actual value of the output. Marx's theory takes the actual degree of integration as given, along with the actual constant capital outlay in order to explain the actual value and surplus-value and prices of production. If the degree of integration changes, and the constant capital outlay changes along with it, then the new constant capital will be transferred to the value of the product. This change in the value of the product due to a change in the degree of integration is a consequence of the fact that Marx's theory is about *commodities as products of capital*, not simple commodities. As discussed in Chapter 2, the value transferred to the value of commodities produced by capital is the actual constant capital, whatever that is. In all such cases, constant capital cannot be a source of surplus-value because whatever is its magnitude the actual constant capital is transferred to the value of the commodities produced by capital. That is the main point of Marx's concept of constant capital, and it does not matter that a given physical structure of production does not correspond to a unique constant capital.[7]

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7   Foley's argument about the degree of integration is similar to Keynes's argument for excluding 'user costs' (similar to Marx's constant capital) from the aggregate supply price in his aggregate supply function, which relates the aggregate supply price to the aggregate quantity of employment that entrepreneurs are willing to provide. In this case, a unique aggregate supply price is required for each quantity of employment. However, Marx's theory relates the quantity of constant capital, not to a quantity of employment, but to the total value of the

Foley has said that he 'has no objection' to 'extending the New Interpretation' to constant capital, and taking constant capital as given along with variable capital.[8] But what Foley has in mind by this 'extension of the NI' is somewhat different from what I have in mind. What I have in mind primarily is taking money constant capital as given in the determination of the value-price of commodities ($P = C + N$) and in the determination of the rate of profit ($R = S / C$). What Foley has in mind is taking money constant capital as given in order to calculate the 'past labour' represented by the money constant capital ($L_p = C / m$). I agree with this calculation of past labour, and I presented the same calculation in Chapter 4. But I argued in Chapter 4 this calculation implies that the money constant capital is in effect *transferred directly* to the value-price of commodities ($P = mL_p + mL_c = m(C/m) + mL_c = C + mL_c$), and that is my main point. I would hope that Foley would also have 'no objection' as well to this meaning of 'the extension of the NI to the money constant capital'.

Foley has emphasised that an advantage of the NI is that it provides a way to make Marx's theory 'operational in terms of the accounting data of capitalist firms'.[9] However, this is true only for value added and its components variable capital and surplus-value; it is not true for constant capital. Constant capital in Volume I is interpreted as the hypothetical 'direct price' of the means of production, which is proportional to the labour time embodied in them, and which is *not* 'operational in terms of accounting data'. Why should there be this difference in the operationality of constant capital and variable capital?

1.3   *Aggregate Price-Value Equality*

Foley argues that the aggregate price-value equality should be re-interpreted in terms of the *value added* component of the value and price of production of the gross output, rather than the *total* value and price of production of the gross output. He acknowledges that Marx himself defined this equality in terms of the total value and price of production, but he argues that this was a mistake, and that this total value-price equality will in general not be satisfied, because the constant capital changes in the transformation. I agree with Foley that the value added equality is always satisfied, but I argue that the total value-price equality is also always satisfied, because constant capital *does not change* in the

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output and to individual industry prices of production (the quantity of constant capital is transferred to the total value and to the prices of production). For this purpose, constant capital is *whatever it is*, the actual constant capital advanced and consumed, no matter what the degree of integration, and a unique magnitude of constant capital is not required.

8   Foley 2000, p. 25.

9   Foley 1982, p. 38.

transformation, but instead remains constant as the actual quantity of money capital advanced to purchase means of production at the beginning of the circuit of capital.

1.4   *Rate of Profit*

Another important difference between Foley's interpretation and my interpretation has to do with the determination of the rate of profit. We have seen above that, according to Marx's theory, the rate of profit is determined by the aggregate ratio of the total surplus-value to the total capital invested, with the total surplus-value is determined by the Volume I macro theory and then taken as given (predetermined) in the Volume III micro theory of the rate of profit and prices of production. Thus there is a direct logical connection between Marx's labour theory of value and surplus-value in Volume I and his theory of the rate of profit in Volume III.

In contrast, in Foley's NI, there is *no logical connection* between the theory of value and surplus-value and the determination of the rate of profit. The same criticism applies to all versions of the NI: *Marx's theory of the total surplus-value plays no role in the determination of the rate of profit*. Instead, the rate of profit is determined according to Sraffian theory – it is derived from given physical quantities of inputs and outputs and determined simultaneously with prices of production (of both inputs and outputs). The only 'Marxian' feature of the NI system of equations is the normalisation condition: that the value added component is the same in the determination of prices of production as it is in the determination of values and surplus-value. But this normalisation condition affects only the absolute level of prices; it does not affect the rate of profit at all, which is instead determined entirely by the given physical conditions of production and the given money wage.[10] I think this is a very serious weakness of the New Interpretation. It appears that, with respect to the determination of the rate of profit and prices of production, the NI version of the labour theory of value and surplus-value is indeed 'redundant', as the Sraffian critics have claimed.

Foley argues that his interpretation of Marx's theory of exploitation is *consistent with any set of prices*, including, but not restricted to, prices of production with equal rates of profit.[11] However, the reverse side of this assertion is that *there is no logical connection* between his interpretation and any theory of prices; i.e., his interpretation of Marx's theory of exploitation is not used in any

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10   Glick and Ehrbar 1987.

11   Foley 1982, p. 38; Duménil and Mohun make the same point.

way to determine individual prices, including prices of production (which also means, as discussed in the preceding paragraph, that his interpretation is not used to determine the rate of profit). Thus, the New Interpretation is a very limited theory: it explains the total surplus-value (as the result of unpaid labour), but it does not explain the rate of profit and individual prices. Such a limited theory is surely less preferred to a theory which explains *both* macro exploitation and also the rate of profit and micro prices (especially prices of production with equal rates of profit), as I argue Marx's theory does.

1.5   *Similarities with* Money, Accumulation, and Crises

In another major work, Foley presents an interpretation of Marx's theory of accumulation and reproduction and crises, in which the basic logical framework is the circuit of money capital (**M – C ...**), as I have emphasised.[12] In this 'money circuit of capital', the quantities of money capital are assumed to refer in principle to actual quantities of money capital, and the initial **M** (which is called the 'capital laid out' or the 'costs of production') includes both constant capital and variable capital. Both of these costs of production are *taken as given* in the determination of the price of the output, as a 'mark-up' over the given costs. Not only variable capital is taken as given, but also constant capital. Therefore, in this other work, Foley interprets both constant capital and variable capital as I do – both are taken as given as a cost and in the determination of the price of the output. However, in the better-known New Interpretation, Foley does not take constant capital as given, but instead derives constant capital from given physical quantities of means of production, first as their hypothetical values and then as their actual prices of production (so there is a 'transformation problem'), and, as a result, he ends up abandoning Marx's theory of the rate of profit. I suggest that Foley should consistently utilise the money circuit of capital model in his New Interpretation, and then there would be no transformation problem and he would not have to abandon Marx's theory of the rate of profit.

Conclusion

In sum, there are some very important similarities between Foley's interpretation and my interpretation – the emphasis on money and the given money wage (variable capital), the emphasis on the macro nature of Marx's theory of surplus-value, and the invariance of the total value added, total wages, and the total surplus-value in the transformation. On the other hand, there are also

12   Foley 1986b.

important differences with respect to the interpretation of constant capital and the rate of profit. The key difference is the interpretation of constant capital. If constant capital were interpreted as the actual money capital advanced to purchase means of production, which is taken as given similar to variable capital as the actual money capital advanced to purchase labour power, then not only would the NI be more logically consistent, but the 'transformation problem' would disappear and the rate of profit could be determined by Marx's theory rather than by Sraffian theory.

2   Duménil's New Interpretation

The next version of the New Interpretation to be considered is that presented by Gérard Duménil.[13] Duménil's version of the NI is similar to Foley's version, but with some significant differences, to be discussed below. The main similarities are: (1) the aggregate price-value equality is redefined in *net* terms, rather than gross terms, although Duménil's interpretation of the net price-value equality is different from Foley's (see Section 2.3 below); (2) the rate of exploitation is defined in terms of the actual money wage share of income, which is taken as given, and remains invariant in the transformation; (3) it follows immediately from (1) and (2) that total profit = total surplus-value; profit is only 'reallocated' surplus-value and the total magnitude does not change; (4) therefore, both of Marx's aggregate equalities (redefined in this way) are always satisfied; and (5) this theory of surplus-value and exploitation is again usually combined with the Sraffian theory of relative prices and the rate of profit, with two somewhat novel assumptions that follow from the above: (1) the money wage rate share rather than the real wage bundle is taken as given, and (2) the normalisation condition equates the total current labour (lx) with the price of the *net product* (py): lx = py (see below).

This section will discuss the key difference between Duménil's and Foley's interpretations, and will also discuss Duménil's arguments and rationales for his New Interpretation.

2.1   *Money vs. Labour*
The most important difference between Foley's interpretation and Duménil's interpretation is that Foley's emphasis on money and the monetary nature

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13   Duménil 1980, 1983–4, 1986. Lipietz 1982 presents essentially the same interpretation as Duménil, with more mathematical formalisation and fewer supporting arguments.

of Marx's theory is almost entirely absent in Duménil's interpretation. Since money is missing, so is ΔM, the increment of money that is the defining characteristic of capitalist production. Instead, Duménil argues that *all* the key variables in Marx's theory – constant capital, variable capital, surplus-value, and even the Volume III variables of cost price, price of production, and profit – are defined in units of *labour time*, rather than units of money capital. Duménil argues that Marx's theory of prices of production in Part 2 of Volume III has to do with the 'reallocation of social labour', which is a different process from the expression of social labour as prices.[14] 'Prices of production' are defined as 'redistributed labour times', i.e., as labour times allocated to individual industries according to the 'equal profit rate rule', as opposed to the 'surplus-value produced rule'. Profit is also defined in units of labour time, as the surplus labour that is received in each industry according to the equal profit rate rule.

This aspect of Duménil's interpretation obviously raises important and fundamental questions about the nature of Marx's theory. I argue that this is a basic misinterpretation of Marx's theory and these key concepts. I have argued in this book that the analytical framework of Marx's theory in all three volumes of *Capital* is the circuit of money capital. Capital is the central concept in Marx's theory and is defined in Chapter 4 of Volume I as *money* that becomes *more money*. We have also seen that constant capital and variable capital are defined as the two components of the initial money capital, **M**, that begins the circulation of capital. The main question of Volume I is the determination of the total increment of money (**ΔM**), or surplus-value, in the capitalist economy as a whole. And the main question of Volume III is the division of this total **ΔM** into individual parts – industrial profit, commercial profit, interest, and rent. All these components are clearly defined in terms of money, and therefore their sum must also be defined in terms of money. Prices of production are money-prices that equalise rates of profit across industries. Prices of production are defined as the sum of the cost price and the average profit, both of which are clearly defined in terms of money (in Chapter 1 of Volume III), and therefore their sum must also be defined in terms of money. To define all these key concepts in Marx's theory in terms of labour time is to miss the main phenomena that Marx's theory is intended to explain – capitalism as a '*money-making*' economy. These quantities of money capital, like all quantities of money, *are ultimately determined by* quantities of labour time. But the variables that are explained are defined in units of money capital that circulate in the real capitalist economy.

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14   Duménil 1983–4, pp. 436–41; 1986: Chapter 1, 'Reallocated values and prices of production'.

Duménil argues that his interpretation is supported by the fact that Marx's numerical examples and tables in Chapter 9 of Volume III refer to labour times and not to money.[15] But this is not true. Unfortunately, Marx did not explicitly state one way or the other in this chapter what the basic unit of the numbers in his examples and tables are. Duménil does not provide any specific references to passages in which Marx explicitly states that the basic unit of the numbers in his examples and tables is labour time. In discussions with Duménil, he has emphasised the many passages in Chapter 9 in which Marx referred to the 'value' of commodities, which Duménil interprets to mean quantities of labour time. And he argues that, since Marx compared values and prices of production throughout the chapter, one way to make sense out of these comparisons is to interpret prices of production as 'reallocated labour time'.

However, I argue that 'value' in Chapter 9 of Volume III does not mean labour times, but instead means the *form of appearance of value*, or money prices proportional to labour times. We know from Chapter 1 of Volume I that 'value' has three aspects (discussed in Chapter 2 above): substance (abstract labour), magnitude (socially-necessary labour time), and form of appearance (money prices). So when Marx says 'value' in any given passage, he could be talking specifically about any one of these three aspects. After deriving money and price as the necessary form of appearance of value in Chapter 1, whenever Marx said 'value' without further qualification, he usually meant the form of appearance of value, i.e., the money price of commodities, which is assumed to be proportional to the magnitude of value, the quantity of labour time required to produce the commodities. All through Volumes I and II, value is used in this way and illustrated with quantities of money. To refer again to the key Chapter 7: the 'value' of 10 lbs. of yarn is 15 *shillings* (i.e., the form of appearance of value), and the 'value' of 20 lbs. of yarn is 30 *shillings*, etc.

Further strong evidence to support this interpretation of the form of appearance of value is provided in Chapter 1 of Volume III, which was discussed extensively in Chapter 4 above, and which defines the concepts of cost price and profit and lays the conceptual groundwork for the theory of prices of production in Chapter 9. In Chapter 1, the 'value' of commodities is repeatedly referred to in terms of money, usually £600, which consists of £400 for the constant capital consumed and £200 for the new value produced. Then Marx considers the 'value' of commodities from the point of view of capitalists. The 'cost price' of commodities is defined in terms of money (£500), as the sum of the money constant capital (£400) and the money variable capital (£100), and

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15   Duménil 1986, pp. 15–16; 1983–4, p. 440.

the 'value' of commodities is equal to the sum of the cost price (£500) and the surplus-value (£100). All this discussion is in terms of money prices, i.e., the form of appearance of value. For example, Marx states:

> If we now compare capital advance on the one hand and commodity value on the other hand, we have: I. ***Capital advance = £500*** ... II. ***Commodity value of £600*** = cost price of £500 ... + £100 surplus-value.[16]

'Capital advance' is clearly a quantity of money capital and it is compared with the price form of appearance of the value of the output. Marx then defines 'profit' as this £100 surplus-value seen from the point of view of capitalists, i.e., as the supposed derivative of the total capital. Marx also states:

> Before production began, we had a capital of ***£500***. After production is over, we have the capital of ***£500*** plus a *value* increment of ***£100***.[17]

This sentence succinctly expresses what Marx's theory is mainly about: how an initial quantity of money capital becomes more money. Marx's explanation of this all-important phenomenon (based on the labour theory of value) has to be in terms of money, and it is in terms of money.

Marx then previews his theory of prices of production (to be presented in Chapter 9) in terms of these concepts of value and cost price:

> The basic law of capitalist competition ... the law that governs the general rate of profit and the so-called ***prices of production*** determined by it, depends, as we shall see, on this difference between the *value* and the ***cost price*** of commodities.[18]

So the meaning given to the concepts of value and cost price in Chapter 1 are the implied meanings of these concepts in Chapter 9. The concepts of value and cost price are clearly defined in Chapter 1 in terms of units of money; therefore, the implicit definitions of these concepts in Chapter 9 are also in units of money. I think the reason Marx left off the money units in Chapter 9 is that he was emphasising the *proportions* between constant capital and variable capital (80/20, 70/30. etc.), and the effect of different proportions on the distribution

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16   Marx 1981, p. 121.
17   Marx 1981, p. 124.
18   Marx 1981, pp. 127–8.

of surplus-value, rather than their absolute magnitudes. But it is clear from all the rest of the three volumes of *Capital* (e.g., Chapter 1 of Volume III just mentioned) that the absolute magnitudes of constant capital, variable capital, cost price, surplus-value, and 'value' all refer to units of money, the necessary form of appearance of value.

Further evidence to support this interpretation is provided by an earlier draft of his theory of prices of production in the *Manuscript of 1861–63*, in which Marx explicitly stated that the basic unit of the numbers in his examples is money (English pounds):

> We have here in ... [five different spheres of production] commodities whose respective *values* are £1,100, £1,200, £1,300, £1,150, £1,250. These are the ***money prices*** at which commodities would exchange if they were exchanged according to their *values*.[19]

This is what Marx usually meant by the 'value' of commodities, without further qualification, and this is what Marx meant by 'value' in Chapter 9 of Volume III: the '*money prices* at which commodities would exchange if they were exchanged according to their values.' Prices of production are then defined as 'modified values', i.e., as modified money prices, not as variables defined in different units.

Duménil presents only one passage from Volume III to support his interpretation that the key variables of Marx's theory are defined in terms of labour time. This passage is:

> As for variable capital, the average daily wage is certainly always equal to the ***value product*** of the number of hours that the worker must work in order to produce its necessary means of subsistence; but this number of hours is itself distorted by the fact that the production prices of the necessary means of subsistence diverge from their values.[20]

Duménil then argues:

> As a preliminary remark, Marx is referring here to a 'wage' which is measured in labour time. It is therefore clear [!] that all the amounts

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19   Marx MECW, v. 31, pp. 297–305; quote from p. 301 [TSV, v. II, pp. 64–71; quote from p. 69]. See also a summary of Marx's theory of prices of production in a letter to Engels written about the same time (August 1862) in Marx MECW, v. 41, pp. 394–7.

20   Marx 1981, p. 261.

considered in this analysis are also measured in this unit: values, wages, prices of production.[21]

I argue that Duménil misinterprets this passage. This passage says that the wage is equal to the '*value product* of a certain number of hours'. Duménil interprets this '*value product*' as defined in units of labour time. If Duménil's interpretation were accepted, then this sentence would be redundant and non-sensical, i.e., it would mean: 'the *number of hours* that are the product of a certain *number of hours*.' However, I argue that the 'value product' here refers to the *money value* produced by a certain number of labour hours. In other words 'value' here refers to the 'money form of appearance of value', a short-hand that Marx used throughout the three volumes of *Capital*. As we have seen above, according to Marx's labour theory of value, each hour of labour produces a certain amount of money value (i.e., the MELT). For example, in Marx's illustration of his theory of surplus-value in Chapter 7 of Volume I, each hour produces a 'value product' of 0.5 shillings. At this rate, it takes 6 hours for the worker to produce a 'value product' equal to the money wage of 3 shillings. And Marx's point in this passage is that the number of hours required to produce a money value equivalent to the money wage is in general different from the number of hours required to produce the means of subsistence purchased by workers with the money wage, because the price of production of the means of subsistence is in general not equal to their value.

Furthermore, even if Duménil's interpretation of this one passage were accepted, in spite of the above argument to the contrary, this one passage in Volume III about wages would be a very slim basis for Duménil's sweeping generalisation that *all* of Marx's key concepts in both Volume I and Volume III are defined in units of labour time, especially with all the contrary evidence that I have presented above, starting with the concept of capital as '*money* that becomes *more money*'.

2.2   *Rationale for Different Determinations of Constant Capital and Variable Capital*

Duménil presents the following argument to support his interpretation that constant capital and variable capital are determined differently in Marx's theory:

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21   Duménil 1986, p. 52; brackets added.

In contrast to what is often contended, Marx does not treat constant capital and variable capital identically. Indeed, it is true that the capitalists *buy* constant capital, and the price of production must be used to evaluate this transaction. But capitalists do not buy the consumption goods of workers, but *pay* them wages.[22]

First of all, it is not accurate to say that 'capitalists *buy* constant capital'. Capitalists *advance* constant capital to buy means of production, with a portion of the initial money capital, just like capitalists advance variable capital to buy labour power with the other portion of the initial money capital that Marx calls variable capital. Secondly, the wages that capitalists *pay* to workers are clearly quantities of *money capital*. Capitalists do not purchase labour power with quantities of labour time, which contradicts Duménil's general interpretation discussed above that all the variables in Marx's theory, including variable capital, are defined in quantities of labour time.

Furthermore, Duménil's argument is a *non sequitur*. The fact that capitalists buy means of production directly does not imply that constant capital must be derived from the price of given means of production, first as their value and then as their price of production. Capitalists just as surely *pay* money to purchase means of production as they *pay* money to workers to purchase labour power. Constant capital could also be taken as given the actual sum of money capital paid by capitalists to purchase means of production, just as variable capital is taken as given as the actual sum of money capital paid by capitalists to purchase labour power. Since both constant capital and variable capital are particular forms of the general concept of capital, and are the two components of the initial money capital ($M = C + V$), it would seem to make the most sense that they should both be determined in the *same way*; and in Marx's theory they are determined in the same way: they are both taken as given, as the actual quantities of the initial money capital that is the starting point of the circuit of money capital.

Duménil presents the following textual evidence to support his interpretation of the two different methods of determination of constant capital and variable capital.[23] Duménil writes:

This fundamental difference is quite explicitly expressed in *Capital*. Concerning **constant capital**, Marx writes: 'The development given above also

22   Duménil 1986, pp. 15–16.
23   Duménil 1986, pp. 16–17.

involves a modification in the determination of a commodity's **cost price**. It was originally assumed that the cost price of a commodity equalled the value of the commodities consumed in its production. But for the buyer of a commodity, it is the price of production that constitutes its **cost price** and thus enters into forming the price of another commodity. (…) Our present investigation does not require us to go into further details on this point'.[24]

Duménil continues: 'However, concerning **variable capital**, the discussion is quite different …'. He then quotes the passage on p. 261 of Volume III, quoted and discussed above ('As for variable capital …'. Note that these are two separate passages, four pages apart, and the latter passage comes before the former passage in the text).

The first passage above is interpreted by Duménil to be only about constant capital. But this interpretation is incorrect. The passage is about the *cost price* of commodities, which includes both constant capital and variable capital (see Chapter 4, Section 4.1, above and Chapter 1 of Volume III). Therefore, whatever interpretation of this passage applies to constant capital also applies to variable capital. Either they are both taken as given as quantities of money capital or they are both derived from given physical quantities. This passage is certainly not an argument for different methods of determinations of constant capital and variable capital.

My interpretation is supported by the continuation of the first passage (discussed above in Chapter 4) which is not quoted by Duménil:

> For even if a commodity's **cost price** may diverge from the value of the means of production consumed in it, this error in the past is a matter of indifference to the capitalist. The **cost price** of a commodity is a **given precondition**, independent of his, the capitalist's, production, while the result of his production is a commodity that contains **surplus-value**, and therefore an excess value over and above its [given] cost price.[25]

Thus we can see that, even if the cost price of the means of production (and the means of subsistence) are equal to their prices of production, and not equal to their values, this cost price is still taken as given (a 'given precondition') in Marx's theory of surplus-value, and surplus-value is still the excess of the value of the product over the given cost price.

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24   Marx 1981, pp. 264–5.
25   Marx 1981, p. 265.

The second passage quoted by Duménil also does not support his interpretation that variable capital is determined differently from constant capital. The paragraph quoted by Duménil begins as follows:

> Apart from the fact that the price of the product of capital B, for example, diverges from its value, because the surplus-value realised in B is greater or less that the profit added in the price of the products of B, the same situation also holds for the commodities that form the **constant part** of capital B, and indirectly, also its **variable capital**, as means of subsistence for the workers. As for the **constant part** of capital is concerned, it is itself equal to cost price plus surplus-value, i.e. now equal to cost price plus profit, and this profit can again be greater or less than the surplus-value whose place it has taken.[26]

This passage then continues with the part quoted by Duménil and by me above ('As for the **variable capital** ...').

We can see that constant capital is discussed in this passage in a *completely parallel fashion* in the sentences immediately prior to the sentences about variable capital quoted by Duménil. Marx is not suggesting in this paragraph that constant capital and variable capital are determined differently. Rather, he is saying that both the constant capital and the variable capital, as the two components of the cost price, are now seen to be equal to the price of production of the means of production and means of subsistence, rather than to the values of these goods, as originally assumed. However, as already discussed, this point does not affect the determination of constant capital and variable capital. Both of these two components of the cost price are taken as 'given preconditions', as the sums of money capital advanced to purchase means of production and labour power at the beginning of the circulation of capital.

2.3   *Net Aggregate Price-Value Equality*

It was mentioned above that the aggregate price-value equality is interpreted by Duménil in *net* terms, rather than gross terms, but is different from Foley's interpretation. Foley's interpretation is 'net' in the sense of the *value added component* of the price of the *gross product* (rather than the total price of the gross product); Foley argues that the fundamental premise of the labour theory of value is a correspondence between the total living labour of the current

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26   Marx 1981, p. 261.

period and the *value added* component of the price of the gross product of the current period. Duménil's interpretation, on the other hand, is in terms of the *net product*. Duménil argues that the fundamental premise of the labour theory of value is that there is a correspondence between the labour of the current period and the *net product* of the current period:

> The great insight which lies at the basis of the labour theory of value is the linking of the total **labour** expenditure in a given period of time with the production associated with it; i.e. the **net product**.[27]

I argue that this is a fundamental misinterpretation of Marx's labour theory of value. The labour theory of value has to do with the *value* produced by current labour, not with the *product* produced by current labour. The 'great insight' of the labour theory of value is the link between current labour and the current value added produced (as a component of the price of the gross product), not between current labour and the net product.

In his book, Duménil argues that, in order to avoid 'double counting', the material inputs to production (inherited from previous periods) should not be counted as the product of the labour of the current period.[28] Therefore, the equalisation of total price and total value should be applied only to the net product, not the gross product, as described above: py = lx. I argue again that the labour theory of value is not about the relation between current labour and the *net product* produced, but is instead about the relation between current labour and *current new value* produced in the economy as a whole, not just the net product sector. In addition, this invariance condition in terms of the net product is misleading because part of the 'price' of the net product depends on only a part of the current labour, and also depends in part on past labour.[29]

Duménil acknowledges that Marx always stated the aggregate price-value equality in gross terms, and never in net terms, but he argues that Marx was confused in these passages, because he had not yet written Volume II of *Capital*, and in particular had not written Part 3 of Volume II on the reproduction schemes.[30] According to Duménil, the main point of the reproduction schemes was to clarify the distinction between the gross price and the net price of

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27   Duménil 1983–4, p. 442.

28   Duménil 1986, Chapter 6: 'The Constancy of the Value of the Net Product'.

29   Duménil's invariance condition is also incorrect because (as discussed above) 'price' is defined in units of labour and the MELT (or the value of money) is missing.

30   Duménil 1983–4, p. 449; 1986, pp. 43–6.

commodities. If Marx had written Volume III with this clarity in mind, he would have emphasised the net price-value equality instead of the gross price-value equality.

I agree that the main point of the reproduction schemes was to clarify the distinction between the gross price and the net price of commodities. However, I argue that Marx's specific point was essentially the *opposite* of what Duménil suggests. The reproduction schemes are primarily a critique of what Marx called 'Smith's dogma', according to which the entire gross price of commodities 'can be entirely resolved into revenue,' i.e., into wages plus profit plus rent, or into the value added component of the price of commodities, or the 'net price' of commodities. Marx argued that Smith's dogma ignores the constant capital component of the price of commodities. If Smith's dogma were true, this would mean that capitalists would not be able to recover the constant capital consumed in production, and hence would also not be able to repurchase and replace the consumed means of production. Therefore, Marx's analysis of the reproduction schemes emphasises that the reproduction of capital *cannot* be analysed solely in terms of the value added component of the price of commodities, or the net price of commodities (that was Smith's mistake), but must instead be analysed in terms of the gross price, including the constant capital component.[31] Furthermore, this main point of the reproduction schemes was already clearly in Marx's mind when he wrote Volume III of *Capital* in 1864–5. Marx first developed these ideas during the early part of the *Manuscript of 1861–63*, while writing about Smith (in Sections 8–10 of Chapter 3 of Volume I of *Theories of Surplus-Value*). Also, in a very interesting and important letter to Engels in July 1863, Marx presented his first sketch of the reproduction schemes, in which Marx explicitly stated and emphasised that the main point of the reproduction schemes was to 'refute Smith's dogma'.[32] Therefore, Marx's analysis of the reproduction schemes provides no reason for him to change his many statements about the gross price-value equality to statements about the net price-value equality. If anything, this analysis of the reproduction schemes provides additional reason for continued emphasis on the *gross* price-value equality.

2.4   *Circuit of Commodity Capital*
Another important difference between Duménil's interpretation and Foley's interpretation (and also between Duménil's interpretation and my interpret-

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31   See Moseley 1998 for an extensive discussion of Marx's reproduction schemes and his critique of Smith's dogma.

32   Marx MECW, v. 41, pp. 483–7.

ation) is that Duménil argues that Marx's theory should *not* be interpreted in terms of the circuit of money capital, but should instead be interpreted in terms of the circuit of *commodity* capital, which he expresses as:[33]

$$C - M - C \dots P \dots C$$

Duménil argues that this circuit is the appropriate framework for Marx's theory because he accepts the Sraffian interpretation of Marx's theory (i.e., that Marx's theory is essentially the same as Sraffian theory), according to which the initial givens in Marx's theory are physical quantities of inputs and outputs. Duménil argues that the circuit of commodity capital is the appropriate circuit for Marx's theory of prices because it is the only circuit that is compatible with this Sraffian-type theory, based on physical quantities.

However, there are serious problems with this argument. Most importantly, as I have argued throughout this book, Marx's theory is fundamentally different from Sraffian theory. Marx's theory of the production and distribution of surplus-value does not begin with physical quantities of inputs and outputs, but instead starts with quantities of money capital advanced to purchase means of production and labour power, with the aim of eventually recovering a greater quantity of money. The appropriate framework for Marx's theory of 'money becoming more money' is obviously the circuit of money capital ($M - C \dots M+\Delta M$). Therefore, even if Marx's circuit of commodity capital were similar to Sraffian theory (we will see in the next paragraph that it is not), this would not be a reason why it should be adopted as the framework for Marx's theory of the production and distribution of surplus-value; indeed it is a reason why it should *not* be adopted as the framework for Marx's theory.

Secondly, Marx's circuit of commodity capital is not even similar to Sraffian theory. Duménil's formulation (above) is seriously misleading. Marx's circuit of commodity capital starts, not with **C**, but with **C′**; i.e.,

$$C' - M' - C \dots P \dots C'$$

The primes are missing in Duménil's formulation, which distorts the meaning of Marx's circuit of commodity capital. The primes are essential because they indicate whether C refers to *inputs* (**C**) or *outputs* (**C′**). Since Marx's circuit of commodity capital begins with the prices of the output (which are taken as given), it is not similar to Sraffian theory, which starts with the physical

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33   Duménil 1986, pp. 25–6, 41, and 75.

quantities of inputs in order to determine the prices of the inputs and the outputs. In the following passages from Volume II, Marx clearly expresses that the starting point of the circuit of commodity capital is the already 'valorised capital', which includes the surplus-value produced in the previous period (i.e., **C′**, not **C**):

> What differentiates the third form from the two earlier ones is that it is only in this circuit that the *valorised capital value*, and *not the original capital value* that still has to be valorised, appears as the *starting point* of its own valorisation. **C′** ... is here the *point of departure* ...[34]

> The *starting point* [of the circuit of commodity capital] includes not only constant capital and variable capital, but *also surplus-value*.[35]

Since the starting point of the circuit of commodity capital includes surplus-value, this circuit obviously cannot be used to explain the production of surplus-value. For that purpose, Marx uses the circuit of money capital, as we have seen above:

> The circuit of money capital is thus the most one-sided, hence the *most striking and characteristic form* of appearance of the circuit of industrial capital, in which its *aim and driving motive* – the valorisation of value, *money-making* and accumulation – appears in a form that *leaps to the eye* (buying in order to sell dearer).[36]

The purpose of the circuit commodity capital is not to analyse the determination of prices and surplus-value, but rather to analyse 'what becomes' of the different components of the price of the output (constant capital, variable capital, and surplus-value) in the subsequent phases of the exchange of commodities, after production. Marx expresses the purpose in the following passage:

> With the movement C′ ... C′, it is necessary to demonstrate *what becomes* of each portion of the value of this overall product **C′**.[37]

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34   Marx 1978, p. 173.
35   Marx 1978, p. 468.
36   Marx 1978, p. 140.
37   Marx 1978, p. 469.

This purpose is very different from the Sraffian theory of relative prices and the rate of profit. The 'value of the overall product' C′ is presupposed in the analysis of 'what becomes' of this presupposed value.

2.5   *Rate of Profit*

Duménil readily acknowledges that Sraffian theory can determine the rate of profit and prices of production without any reference to Marx's labour theory values and surplus-value.[38] However, he argues that Marx's labour theory of value and surplus-value is nonetheless essential for an understanding of capitalism. He compares the labour theory of value to the theory of weight and gravity. He argues that Sraffian theory of the rate of profit and prices is like the practical measurement or calculation of weight. One does not need to understand the theory of weight in order to practically weigh things. However, in order to gain a deeper understanding of the phenomenon of weight, one needs a theory of gravity. Similarly, Duménil argues, one does not need to understand the labour theory of value in order calculate prices and the rate of profit from the Sraffian equations. However, in order to gain a deeper understanding of prices and the rate of profit and other important phenomena of capitalism, one needs the labour theory of value.

The problem with this analogy is that the theory of gravity provides an equation which explains how weight is quantitatively determined by gravity (w = m g, where m is mass), whereas the New Interpretation of Marx's theory does *not* provide an equation (or a theory) that explains how the rate of profit is determined by labour-value and surplus-value. Instead, the NI equation for the rate of profit is the Sraffian equation, with no reference to the labour theory of value, except for an invariance condition that affects only the absolute level of prices, not the rate of profit. Therefore, in terms of the quantitative determination of the rate of profit, there are no additional insights from the New Interpretation of Marx's theory of value and surplus-value. The New Interpretation is indeed 'redundant' with respect to the quantitative determination of the rate of profit by the Sraffian equations.

Conclusion

In summary, the differences between Duménil's interpretation and my interpretation are greater than my differences with Foley's interpretation. In addition to the key differences regarding the determination of constant capital and the determination of the rate of profit, there is also the more fundamental dif-

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38   Duménil 1983–4, pp. 434–8.

ference with regard to whether the key concepts of Marx's theory refer to units of money or units of labour time. I have argued that Duménil's interpretation of the key concepts of Marx's theory in terms of labour time is a fundamental misinterpretation of Marx's theory and the phenomena which Marx's theory is intended to explain, including his theory of prices of production. I have also argued that Duménil's arguments and textual evidence for the different determinations of constant capital and variable capital and for the redefinition of the aggregate price-value equality in net terms are weak and unconvincing.

3   Mohun's New Interpretation

The next version of the 'New Interpretation' to be considered is by Simon Mohun.[39] Mohun's interpretation is similar to Foley and Duménil, on the important points discussed above: (1) the aggregate price-value equality is redefined in *net* terms as a relation between current labour and the price of the net product of the current period: $lx = \lambda_m py$, where λ_m stands for the value of money;[40] (2) the value of labour power is defined in terms of the actual money wage, which is taken as given, and both the money wage and the value of labour power remain invariant in the transformation; (3) it follows from (1) and (2) that total profit = total surplus-value; therefore, both of Marx's aggregate equalities redefined in this way are always satisfied; and (4) this macroeconomic theory of surplus-value and exploitation[41] is again combined with the Sraffian microeconomic theory of relative prices and the rate of profit, with two somewhat novel assumptions that follow from the above NI macro theory: (1) the money wage share rather than the real wage bundle is taken as given, and (2) the normalisation condition equates current labour and the price of the net product: $lx = \lambda_m py$.[42]

On the fundamental issue of whether the variables in Marx's theory refer to quantities of money or quantities of labour, Mohun is in-between Foley and Duménil. He agrees with Duménil that the Volume I variables of constant

39   Mohun 2000.

40   As discussed above, this equation linking current labour and the net product is misleading because the price of the net product depends on only a part of current labour and also depends in part on past labour. The logical connection between current labour and value added in the economy as a whole is lost.

41   Mohun also emphasises the macro nature of Marx's theory, similar to Foley.

42   Similar to Duménil, except that Mohun's price is defined in terms of money and this invariance condition includes the value of money.

capital, variable capital, surplus-value refer to quantities of labour time, but he agrees with Foley that the Volume III concepts of cost price, profit, and price of production refer to quantities of money.

The MELT plays a prominent role in Mohun's interpretation, similar to Foley, but is interpreted somewhat differently. In Foley's interpretation, Marx's Volume I theory of surplus-value is about the actual money surplus-value, and thus the MELT converts quantities of labour times into quantities of money within the Volume I theory of surplus-value. In Mohun's interpretation, Marx's Volume I theory of surplus-value is about quantities of labour, and the MELT converts the labour time quantities in Volume I into money variables in Volume III. But the end results are essentially the same.

3.1   *Argument for Money Wage Taken as Given*

The main new feature of Mohun's interpretation is his justification for taking as given the money wage, rather than the real wage, in the determination of the value of labour power. Mohun does not explicitly discuss Foley's justification for taking the money wage as given – that the actual exchange relation between capitalists and workers is in terms of the money wage, but I imagine that he would agree with Foley's argument. In addition, Mohun's argument is based on the *unique characteristics of the commodity labour power* that is purchased with the money wage; specifically that labour power is a unique commodity in that it is not produced by capitalist firms. Therefore, there is no equalisation of profit rates involved in the determination of the price of labour power, i.e., no transformation of value into price in the case of labour power. Since there is no transformation of values into prices of production, *labour power actually exchanges at its value*, i.e., its actual price is proportional to its value. Therefore, the actual money wage paid to purchase labour power is an accurate measure of the value of labour power.

Mohun argues further that the above argument does not apply to the means of production because they are produced by capitalist firms, and their actual prices do involve the equalisation of profit rates and the transformation of values into prices of production. Therefore, the value of the means of production (the labour time embodied in them), is in general not proportional to the actual money used to purchase them. Thus the actual money used to purchase the means of production is not an accurate measure of the value of the means of production. The money wage is taken as given because labour power, and only labour power, actually exchanges at its value, which implies that the actual money wages is an accurate measure of the value of labour power.

However, I have argued above that Marx's reasons for taking money variable capital as given was not because of the unique characteristics of labour power,

but rather because of the characteristics of *capital* – the fact that the circuit of money capital begins with a quantity of money advanced to purchase labour power. And this characteristic is of course shared by constant capital, the other component of the initial money capital that is advanced to purchase means of production. Mohun's interpretation, like Duménil's interpretation, loses sight of the central focus of Marx's theory – *money* advanced in order to become *more money* – and focuses instead on the measurement of the value of labour power in terms of labour time. Marx's purpose for taking variable capital and constant capital as given is not to determine the value of labour power and the value of the means of production in terms of labour time, but rather to determine the money value and the money surplus-value (ΔM) produced by labour and surplus labour.

From Mohun's perspective, it might make sense that the value of labour power is measured differently from the value of the means of production. However, from Marx's perspective of the *circuit of money capital*, it makes no sense to determine variable capital and constant capital in different ways. Constant capital and variable capital are both components of the initial money capital, and both are advanced at the beginning of the circuit of money capital. The main question that Marx's theory is intended to explain is how this initial sum of money becomes more money. For this purpose, the appropriate initial givens are the initial quantities of money capital advanced, *both* constant capital and variable capital. Again, there is no hint in any of Marx's writings that constant capital and variable capital are determined differently; and in particular there is no hint of Mohun's argument for such different determinations, based on the unique characteristics of labour power.

Mohun's different analytical framework is indicated by the fact that his analysis focuses on the 'circuit of labour power', which he represents symbolically as:

$$\mathbf{C} - \mathbf{M} - \mathbf{C}$$

In contrast, I have argued above that the analytical framework for Marx's theory is the circuit of *money capital*, represented by:

$$\mathbf{M} - \mathbf{C} \dots \mathbf{P} \dots (\mathbf{M} + \Delta\mathbf{M})$$

After all, the title of Marx's book is *Capital*, not *Labour Power*. The main point of Marx's theory is to explain how the initial given quantity of money capital ($\mathbf{M}$) is transformed into *more money capital* ($\mathbf{M} + \Delta\mathbf{M}$). The initial quantity of money capital is divided into constant capital and variable capital (i.e., $\mathbf{M} = \mathbf{C} +$

V), which are determined in the same way, they are taken as given as the actual quantities of money capital advanced to purchase means of production and labour power, in order to make more money.

4   *New Palgrave* Article by Duménil and Foley

In the second edition of the *New Palgrave Dictionary of Economics*, Duménil and Foley co-authored an article on 'The Marxian Transformation Problem'.[43] They emphasise their own interpretation, which they now call the 'Single System Labour Theory of Value' (SS-LTV) (more on this new name below), and they discuss the familiar main points of the New Interpretation discussed above: (1) the aggregate price-value equality is redefined in *net* terms as a relation between the value of the net product and the price of the net product: λy = py (with the MELT assumed to be = 1 arbitrary accounting unit per hour)[44] (more on this equality below); (2) exploitation and the rate of surplus-value are defined in terms of the actual money wage, not in terms of the real wage; (3) it follows from the previous two points that total profit = total surplus-value; therefore, both of Marx's two redefined aggregate equalities are always satisfied; and (4) this theory of surplus-value and exploitation is again combined with the Sraffian theory of relative prices and the rate of profit, with two somewhat novel assumptions: (1) the money wage rate share is taken as given rather than the real wage, and (2) the normalisation condition equates the value of the net product and the price of the net product: λy = py.

This normalisation condition contradicts Marx's labour theory of value and surplus-value and prices of production, except under special conditions. Since the net output sector (y) is a subset of the total economy, λy is equal to py *only if* the composition of capital in the net output sector is equal to the average composition of capital for the economy as a whole, and also if their turnover periods are the same, which is unlikely. Fabio Ravagnani has made a similar criticism of my interpretation – that my interpretation implies that λy = py, and this equality contradicts Marx's theory.[45] I have replied that this criticism is mistaken because my interpretation does not imply that λy = py, mainly because of the 'monetary' interpretation of constant capital (once again constant capital is

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43   Duménil and Foley 2008.

44   The 'arbitrary accounting unit' is a strange concept in Marx's theory. Prices in Marx's theory in *Capital* are not defined in arbitrary accounting units (whatever that means), but in terms of the money commodity (e.g., gold).

45   Ravagnani 2005.

crucial) as equal to the actual money constant capital advanced to purchase means of production rather than proportional to the labour time required to produce means of production, and also because of irregular replacement patterns of fixed constant capital, which renders the Sraffian derivation of this equality invalid.[46] However, Ravagnani's criticism does apply to the New Interpretation (at least in this *New Palgrave* version) because they have adopted the Sraffian framework.

With respect to the issue of basic units of the key variables in Marx's theory – whether labour time or money – Duménil and Foley in this article adopt an intermediate interpretation similar to Mohun's: in Volume I the variables are in units of labour time, and in Volume III the variables are in units of money; and the MELT converts the labour time quantities in Volume I into the money quantities in Volume III.[47] The key role of money in Marx's theory is not emphasised nearly as much as in Foley's earlier work, and the circuit of money capital is not mentioned at all.

As in their previous work, very little is said about *constant capital*, but their interpretation is the same as discussed above: constant capital is derived by Marx from given physical quantities of means of production, first as their hypothetical labour values and then as actual prices of production. They also mention in three sentences my monetary interpretation of constant capital:

> Fred Moseley (2003) proposes to apply the reasoning of the SS-LTV approach not just to variable capital, but to constant capital as well. Moseley argues for retaining the original form of the Marxian equations by defining the total value of a commodity as the labour-time equivalent of the price of constant capital plus the living labour expended in adding value. Moseley argues that Marx's comments in the quotations above[48] are *unnecessary* because Marx's tables themselves express his underlying understanding of the labour theory of value.[49]

But this is a misunderstading of my interpretation. I do not argue that these comments of Marx's in Chapter 9 of Volume III are *unnecessary*. Rather, I argue that Marx's comments *can be interpreted in a different way* from the standard way, and in a way that is consistent with (rather than contradicts) the

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46   Moseley 2008.

47   Although they also state twice that Marx's prices of production in Chapter 9 of Volume III are in units of labour time, as in Duménil's earlier work; pp. 406 and 411.

48   Marx 1981, pp. 261 and 265.

49   Duménil and Foley 2008, p. 410.

surrounding paragraphs in Chapter 9, and in a way that makes Marx's theory a logically consistent whole, rather than logically contradictory (see Chapter 4 above for an extensive discussion).[50]

With respect to the *rate of profit*, Marx's theory of the rate of profit (as determined by the ratio of the total annual surplus-value to the total capital invested) is briefly discussed, but Duménil and Foley repeat the traditional criticism that Marx failed to transform the inputs of constant capital and variable capital, and thus that his method of determining the rate of profit is not viable. And they make the familiar Bortkiewicz-Sraffian correction that replaces Marx's theory of the rate of profit with the Sraffian theory of the rate of profit, based on physical quantities, rather than the circuit of money capital and surplus labour (this is very clear in the section 'A mathematical setting', especially point #4). The contribution of the SS-LTV approach is supposed to be that the Sraffian system of equations is closed, not by setting the price of a *numeraire* commodity to 1, but rather by relating that the price of the net product to the value of the net product. But this normalisation condition only affects the price level; it does not affect the magnitude of the rate of profit (aside from the fact that this condition contradicts Marx's theory, as just discussed). The rate of profit in the Sraffian physical quantities model is determined solely by the physical coefficients of production and an assumption about the wage, and does not depend in any way on Marx's labour theory of value and surplus-value.

Duménil and Foley call their approach the '*Single-System Labour Theory of Value* (SS-LTV)'. This is not intended as a description of Marx's theory, as he himself presented it, but rather as a revision and correction of Marx's theory. They argue that Marx himself followed Ricardo and presented his theory in terms of 'two systems' (a 'value system' and a 'price system') (as in the standard interpretation), but their reformulation of Marx's theory is in terms of a 'single system' ('one economy'). In their interpretation, there is no hidden value system with logical priority compared to the price system; there is only the price system, as in Sraffian theory, with the normalisation in terms of the net product. Similarly, there is no prior determination of the total surplus-value and the general rate of profit, as in Marx's theory; instead the rate of profit is determined simultaneously with the prices of production of the inputs and the outputs, as in Sraffian theory.

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50   Unfortunately, the paper of mine (2003) referred to by Duménil and Foley is not about the transformation problem, and they do not refer to my 2000 article which is a 'sympathetic critique of the New Interpretation'.

I have argued in this book that Marx's theory was not in terms of 'two systems', but was instead in terms of a 'single system' – the actual capitalist economy – and that this single system is theorised sequentially at two levels of abstraction – first the total economy (capital in general) and then individual industries (competition). What is missing in Duménil and Foley's 'single system' approach (and in Sraffian theory in general and in the Sraffian interpretation of Marx's theory) is the first level of abstraction of the total economy, at which the total surplus-value and the general rate of profit are determined by the total surplus labour.

From my perspective, I would say that this latest formulation of the New Interpretation is a step backward, compared to Foley's original formulation, especially with respect to the significance of money and the circuit of money capital in Marx's theory.

5   General Conclusion

The New Interpretation of Marx's theory is an important contribution to Marxian scholarship. I think that the New Interpretation's emphasis on the macroeconomic and monetary nature of Marx's theory, especially in Foley's version, is definitely the right direction in which Marxian scholarship should go and develop. Another important contribution is the emphasis on the assumption that value added is determined by living labour and remains invariant in the transformation. Still another contribution is to take the money wage as given in the determination of surplus-value, as the actual money wage used to purchase labour power, rather than derive the wage from a given bundle of means of subsistence, first as their hypothetical value and then as their actual price of production. This money wage is assumed to remain invariant in the transformation of values into prices of production, and this assumption, along with the invariance of value added, allows the NI to conclude that total profit = total surplus-value, i.e., that the total surplus-value is also invariant in the transformation, so that profit is only 'reallocated surplus-value', which is the most important conclusion of Marx's theory.

However, the New Interpretation assumes that constant capital is determined in a different way from variable capital. Constant capital is *not* taken as given, as the actual money capital paid to purchase means of production, but is instead derived from given quantities of means of production, first as the hypothetical value of the means of production, and then as their actual price of production, as in the standard interpretation of Marx's theory. These different methods of determination of constant capital and variable capital are a funda-

mental logical inconsistency in the NI. In addition, because constant capital is not taken as given, the rate of profit cannot be determined as in Marx's theory by the ratio of the total surplus-value to the total capital invested; instead the rate of profit is determined in the NI by Sraffian theory, which is another key logical inconsistency in the NI, and results in the 'redundancy' of the labour theory of value for the determination of the rate of profit. Marx's main criticisms of Ricardo were that he failed to explain how the rate of profit is derived from the labour theory of value, but instead just took the rate of profit as given, and he failed to explain how prices of production (with equal rates of profit) are determined on the basis of the labour theory of value. The New Interpretation has these same crucial failures. Like Ricardo, the New Interpretation does not overcome the main 'stumbling block' of the labour theory of value – how to explain the rate of profit and prices of production *on the basis of the labour theory of value*. Instead, the New Interpretation mostly ignores this stumbling block and pretends that it is not important.

I conclude that the New Interpretation goes 'only halfway' in breaking away from the standard 'physical quantities' interpretation of Marx's theory, and I suggest that its proponents should go 'all the way' to a consistent monetary interpretation of the determination of both constant capital and variable capital in Marx's theory, which would enable the NI to maintain Marx's theory of the rate of profit, rather than switching to Sraffa's theory. And more attention should be given to the circuit of money capital as the logical framework of Marx's theory, rather than the circuit of commodity capital or the circuit of labour power.

Temporal Single System Interpretation (TSSI)

Another important non-standard reinterpretation of Marx's theory of prices of production and the transformation problem in recent decades is the so-called 'temporal single system' interpretation (commonly abbreviated as the TSS interpretation or TSSI). The TSSI is mainly concerned with dynamics and the falling rate of profit, but also presents an interpretation of the transformation problem. The TSSI work on the transformation problem has been presented primarily by Andrew Kliman and Ted McGlone.[1] In this chapter, I will use the term TSSI to refer to these two authors, especially the former.

There are important similarities between the TSSI and my interpretation, including: sequential or temporal determination; the claim that Marx's theory is about a 'single system'; and that within a given period constant capital and variable capital are taken as given (as quantities of money capital) and the general rate of profit is determined by the total surplus-value and prior to prices of production. However, there are also important differences: mainly that the TSSI assumes that Marx's concept of prices of production are not long-run centre-of-gravity prices, but are instead a short-run equilibrium price that continues to change from period to period even though the productivity of labour remains constant, and thus the transformation of values into prices of production is an ongoing process that takes place over multiple real historical periods.

This chapter will discuss these important similarities and differences between my 'macro-monetary' interpretation and the 'temporal single system' interpretation.

1   Similarities

1.1   *Temporal Determination*
The most important contribution of the TSSI, in my view, has been to emphasise that Marx's theory is not based on the method of simultaneous determination, in which input prices, output prices, and the rate of profit are all determined simultaneously, but Marx's theory is instead based on the method

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[1]   Kliman and McGlone 1988 and 1999; Kliman 2007; and McGlone and Kliman 1999.

of temporal (or sequential) determination, in which input prices are taken as given in the determination of output prices, and the rate of profit is determined prior to output prices and is taken as given in the determination of output prices. Prior to the TSSI, the Sraffian interpretation of Marx's theory in terms of a system of simultaneous equations was almost universally accepted. Even the other recent non-standard reinterpretations of Marx's theory discussed in Part 2 generally accept the method of simultaneous determination.

However, the proponents of the TSSI argue that the logical framework of Marx's theory is the *circuit of money capital*, and that this is a *real process* that takes place in *real historical time*. Capital *exists* first in the form of money advanced at the beginning of the circuit of capital in the sphere of circulation; then in the form of means of production and labour power in the sphere of production; then in the form of commodities produced at the end of the production process; and then finally once again in the form of money recovered at the end of the circuit, including more money than was originally advanced at the beginning of the circuit. Therefore, the appropriate logic for analysing this real historical process is *temporal determination*, in which the capital previously existing at the beginning of the circuit is taken as given in the determination of the capital value realised at the end of the circuit.

The proponents of TSSI go further and argue that, in the case of *technological change*, the temporal nature of the circuit of capital implies that the constant capital that is taken as given in the determination of the capital value at the end of the circuit is the actual *historical costs* at the time the means of production were purchased, not the *current costs* at the time the output is sold.[2] I disagree with this aspect of their interpretation, and argue instead that, in this case, the given constant capital at the time the output is sold would be the 'current' constant capital, as evidenced by the most recent purchases of these means of production in the sphere of circulation. The constant capital that is transferred to the value of the output is a *social average* constant capital, and if this social average changes before the output is sold, then the given constant capital will change also. The case of technological change is not directly related to the transformation problem, which generally assumes constant technology, but I will discuss this issue further in the final section of this chapter.

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2 This interpretation is sometimes modified to assume that if there is technological change between the time the means of production are purchased and the time these inputs *enter production*, then constant capital is revalued; but constant capital is not revalued if the technological change occurs after the means of production enter production. This modification would not seem to make much difference, especially for long-lasting buildings and equipment.

1.2   *Single System*

As discussed in previous chapters, the standard interpretation of Marx's theory is a '*dual system*' interpretation, according to which values and prices of production are two entirely separate systems, which are determined independently of each other. The TSSI argues instead that values and prices of production are interrelated in one all-inclusive interdependent '*single system*'. Not only do prices of production depend on value and surplus-value, but value and surplus-value also depend in part on prices of production, for two reasons: because the constant capital component (or the value transferred component) of the value of commodities is equal to the price of production of the means of production; and the variable capital component, which is subtracted from the new value produced to determine surplus-value, is equal to the actual money wage, which is equal to the price of production of the means of subsistence.

I agree with the TSSI on this important point. According to my interpretation, as we have seen above, the value of commodities depends in part on constant capital, which is equal to the price of production of the means of production, and the surplus-value produced depends in part on variable capital, which is equal to the price of production of the means of subsistence.

1.3   *Similarities within a Single Period*

We will see below that the TSSI argues that the transformation of values into prices of production is an ongoing process that takes place over multiple successive periods, and I disagree with this aspect of their interpretation. But within any given period, there are other important similarities between the TSSI and my interpretation. First, the circuit of money capital (M–C …) is interpreted to be the logical framework of Marx's theory, and thus the money constant capital and money variable capital are taken as given, as quantities of money capital advanced to purchase means of production and labour power at the beginning of the circuit of money capital (i.e., constant capital and variable capital are not determined simultaneously with the prices of production of the output at the end of the circuit). And the crucial point is that the *same quantities* of money constant capital and variable capital are taken as given in the determination of both values and prices of production of the output (not one set of magnitudes of C and V for the determination of values and another set for the determination of prices of production, as in the standard interpretation).

In addition, within any given period, the total surplus-value is determined by the prior value analysis, and taken as given in the determination of the rate of profit and prices of production, as in my interpretation. The rate of profit is not determined simultaneously with the prices of production of the outputs and

the inputs, as in the standard interpretation. And both of Marx's two aggregate equalities are always satisfied within a single period.

Therefore, within any given period, the TSSI and my interpretation are similar with respect to these two important aspects of Marx's logical method that I have emphasised in this book. As a consequence of these assumptions, Marx's two aggregate equalities are always satisfied within any given period, as in my interpretation.

2   Differences

However, in spite of these important agreements, there are also important disagreements. The main disagreement has to do with Marx's concept of prices of production. I argue that prices of production are *long-run centre-of-gravity* prices, which change only if the productivity of labour or the real wage changes (in the classical tradition of Smith and Ricardo), while the TSSI interprets Marx's prices of production as *short-run equilibrium prices* that continue to change from period to period, even though there is no change in the productivity of labour or the real wage, and thus that the transformation of values into prices of production is a *multi-period ongoing process*. Kliman and McGlone emphasise this point: 'many different prices of production are possible even when technology and the real wage remain constant'.[3] The next two sections will discuss these important differences.

2.1   *Prices of Production and Long-Run Centre of Gravity Prices*[4]
I argue that Marx's concept of prices of production refers to long-run centre-of-gravity prices around which actual market prices fluctuate ('gravitate') from period to period. These long-run centre-of-gravity prices are in the classical tradition of Smith and Ricardo and have three key characteristics: (1) they equalise the rate of profit across industries; (2) they are 'centres of gravity' around which actual market prices fluctuate over extended periods of time; and (3) they change if and only if either the productivity of labour changes (due to changes in the technology of production) or (secondarily) as the real wage changes. The TSSI prices of production have the first characteristic, but do not have the other two key characteristics: since they change every period, they cannot be 'centres of gravity', and they change every period even though the productivity of labour and the real wage remain the same.

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3   Kliman and McGlone 1988, p. 70; see also Kliman and McGlone 1996, p. 39.
4   See Moseley 1999 for an extensive discussion of this issue.

This section will focus on the third characteristic of Marx's prices of production, which is the one that most clearly contradicts the TSS interpretation, and will review the textual evidence related to this key characteristic. Textual evidence related to the second characteristic of prices of production as long-run centre-of-gravity prices will be presented in Chapter 11.

Before reviewing the textual evidence, the dependence of Marx's prices of production on the productivity of labour and the real wage may be briefly summarised as follows. As discussed in Chapter 2 (equation 10), prices of production are determined by the following equation (ignoring fixed capital for the sake of simplicity):

$$PP_i = (C_i + V_i) + R (C_i + V_i)$$

Therefore, changes in prices of production could be due to a change in C_i or V_i or R, or some combination of these. Marx argued (in the passages to be reviewed below) that changes in C_i or V_i are caused by changes in the productivity of labour, either in final goods industries, or in industries that produce the means of production for these final goods industries. A change of V_i could also be due to a change in the real wage. Marx argued further (in the passages reviewed below) that a change in R is also caused either by a change in the productivity of labour somewhere in the economy which changes either the composition of capital or the rate of surplus-value. A change in the rate of surplus-value could also be due to a change in the real wage. These discussions of the causes of changes in prices of production imply the conclusion that, if the productivity of labour and the real wage remain constant, then *prices of production would also remain constant*. Marx does not mention in these many passages any other possible cause of changes in prices of production, besides changes in the productivity of labour and/or the real wage. He certainly does not ever mention that C_i and V_i might continue to change in successive periods as a result of the ongoing equalisation of profit rates and the transformation process (as in the TSSI).

We turn now to the textual evidence on this important point.

Manuscript of 1861–63

The first time (in his published writings) that Marx discussed the subject of the causes of changes in prices of production was in a discussion of Ricardo's theory of prices of production in the *Manuscript of 1861–63*, in a sub-section of what eventually became Chapter 10 of *Theories of Surplus-Value* (subsection 10.5(c), entitled 'Ricardo's two different definitions of "natural price". **Changes in cost price** [price of production] **caused by changes in the productivity of labour**').

(As we saw in Chapter 4, at this time Marx was calling prices of production 'cost prices', which is confusing, since later in Volume III of *Capital* cost price is a component of prices of production ($K_i = C_i + V_i$), rather than another name for prices of production). Marx's main point in this sub-section is that Ricardo failed to distinguish between value and prices of production (a criticism he made many times in the *Theories of Surplus-Value*).

In addition, as the title of the subsection suggests, Marx also discussed *causes of changes in prices of production*. Marx's main point here is that changes in prices of production are ultimately caused by changes in the *productivity of labour*, which changes inversely the *labour time* required to produce commodities or the *value* of commodities. These changes in the productivity of labour could occur either in the 'final goods' industries, or in the industries that produce the inputs (means of production and means of subsistence) for the final goods industries. In this discussion and in all the passages discussed below in this section, Marx seems to be using the term 'value' to mean the '*magnitude of value*', or the labour time required to produce commodities. The only cause of a change of value mentioned in these passages is a change in labour-time requirements.

Marx stated at the outset of this discussion:

> Provided that the prices of the commodities are so adjusted that they all yield a rate of profit of 10%, then every lasting CHANGE in these prices will be determined by a CHANGE in their VALUES, in the **labour time required** for their production ... With the CHANGES IN THE VALUES OF COMMODITIES, their COST PRICES [prices of production] also change.[5]

Marx went on to discuss an example of *hat-making* (which was one of Ricardo's examples). Marx explained that, if the productivity of labour in hat-making increases (e.g., a worker can produce 20 hats in the same time as he previously produced 10 hats), then the labour time required to produce each hat and the wage cost of each hat would decrease, which in turn would reduce the price of production of hats. Marx also added that increases in the productivity of labour in industries that produce the means of production for the hat industry (raw materials and tools) would also reduce the price of production of the hats in similar fashion. Such an increase in productivity in the production of the means of production leads to a reduction of prices of production in those industries, which in turn reduces the constant capital outlay for the hat-making

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5   Marx MECW, v. 31, pp. 436–7 [TSV, v. II, p. 213].

industry, and hence reduces the price of production of hats. Finally, another way in which an increase in the productivity of labour could affect the price of production of hats is if the increase of productivity occurred in industries which produce the workers' means of subsistence, which would make the means of subsistence cheaper and increase the general rate of profit. This last cause would of course affect the prices of production of all commodities.

Marx summarised this discussion in the following passage, which emphasises that the changes in the prices of production of commodities are ultimately caused by changes in the labour time required for their production:

> Once the cost prices [i.e. prices of production] of commodities in the DIF-FERENT TRADES are established, they rise or fall relatively to each other with any change in the VALUES of the commodities. If the *productivity of labour* rises, the *labour time required* for the production of a *particular commodity* decreases and therefore its *value falls*; whether this CHANGE in PRODUCTIVITY occurs in the labour used in the final process or in the constant capital, the cost price of this commodity must also fall correspondingly.[6]

Manuscript of 1864–65 (Volume 3 of *Capital*)

The next time that Marx discussed the subject of the causes of changes in prices of production was two to three years later in the *Manuscript of 1864–5*, in what later became Part 2 of Volume III, Part 2, of *Capital*. Marx discussed this subject in each of the last four chapters of Part 2 (Chapters 9–12).

In Chapter 9, Marx wrote:

> The price of production of commodities in a particular sphere of production *may undergo changes of magnitude*:
>
>   (1) while the value of the commodities remains the same (so that the same quantity of dead and living labour goes into their production afterwards as before), as the result of a change in the general rate of profit that is independent of the particular sphere in question;
>
>   (2) while the general rate of profit remains the same, by a change in value either in the particular sphere of production itself, as the result of a **technical change**, or as the result of a change in the value of the commodities that go into its constant capital as formative elements;

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6   Marx MECW, v. 31, p. 438 [TSV, v. II, p. 215].

(3) finally, by the common action of these two circumstances.[7]

Marx then went on to discuss possible causes of changes in the general rate of profit:

> Assuming a constant level of exploitation of labour … a change in the general rate of profit assumes a change in the value of the commodities which enter as formative elements into the constant capital, the variable capital, or both simultaneously.

> Alternatively, the general rate of profit can change, with the value of commodities remaining constant, if the level of exploitation of labour changes.

> Or again, the level of exploitation of labour remaining the same, the general rate of profit can change if the sum of labour applied changes in relation to the constant capital, as a result of **technical changes** in the labour process. But technical changes of this kind must always show themselves in, and thus be accompanied by, a change in value of commodities whose production now requires either **more or less labour** than it did before.[8]

This passage mentions briefly another possible cause of changes in prices of production, besides changes in productivity or values, and that is a change in the 'rate of exploitation' with the values of all commodities remaining constant. This seems to refer to a change in the real wage, which would change the rate of exploitation inversely while values remain constant. All other possible causes of changes in prices of production discussed in this passage are, in one form or another, *changes in the productivity of labour which inversely change the labour time* required to produce commodities, either in the particular industry which produces a given commodity, or in industries that produce the means of production for this industry, or in the rest of the economy that affects the general rate of profit.

In Chapter 10, Marx commented again briefly that changes in prices of production are caused by changes in the values of commodities, or a change in the labour time required to produce commodities:

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7   Marx 1981, pp. 265–6.
8   Marx 1981, pp. 266–7.

In whatever way prices are determined, the following is the result:

(1) The law of value governs their movement in so far as reduction or increase in the **labour-time** needed for their production makes the price of production rise or fall ...

(2) The average profit, which determines the prices of production, must always be approximately equal to the amount of surplus-value that accrues to a given capital as an aliquot part of the total social capital ... Since it is the total value of the commodities that governs the total surplus-value, while this in turn governs the level of average profit and hence the general rate of profit – as a general law or as governing the fluctuations – it follows that the law of value regulates the prices of production.[9]

Marx did not mention here or elsewhere that prices of production might rise or fall due to the ongoing transformation of values into prices of production without changes in the labour times required for production.

Chapter 11 is about the effect of changes of wages on prices of production (Ricardo's main question). Marx states that changes in wages could be due either to a change in the real wage or to a change in the value of the means of subsistence, which in turn is due to a change in the productivity of labour in the production (directly or indirectly) of means of subsistence.[10] So again, the only causes of changes in prices of production are changes in the real wage or changes in the productivity of labour.

Finally, in Chapter 12, Section 1 (entitled 'The Causes of a Change in the Price of Production'), Marx returned again to this subject, and largely repeats what he said in Chapter 9:

The price of production of a commodity can vary for only two reasons:

(1) A change in the general rate of profit. This is possible only if the average rate of surplus-value itself alters, or, given an average rate of surplus-value, the ratio between the sum of surplus-value appropriated and the total social capital advanced.

In so far as the change in the rate of surplus-value does not rest on the depression of wages below their normal level, or a rise above this – and movements like this are never more than oscillations – it can occur only because the value of labour-power has either fallen or risen; both of

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9   Marx 1981, pp. 280–1.
10   Marx 1981, p. 306.

> these are impossible without a change in the **productivity of labour** of that labour that produces the means of subsistence, i.e. without a change in value of the commodities that are consumed by the worker.[11]

This sentence seems to assume that the real wage remains constant, since Marx says that a change in the value of labour power is impossible without a change in the productivity of labour in the production of the workers' means of subsistence. Marx continues:

> Alternatively, there may be a change in the ratio between the sum of surplus-value appropriated and the total social capital advanced ... If the same labour sets more constant capital in motion, it has become more productive, and vice versa. Thus a change has taken place in the **productivity of labour** and a change must have occurred in the value of certain commodities ...
>
> (2) The general rate of profit remains unaltered. In this case the production price of a commodity can change only because its value has altered; because more or less labour is required for its actual reproduction, whether because of a change in the **productivity of labour** that produces the commodity in its final form, or in that of the labour producing those commodities that go towards producing it. The price of production of cotton yarn may fall either because raw cotton is produced more cheaply, or because the work of spinning has become more productive as a result of better machinery.
>
> All changes in the price of production of a commodity can be ultimately reduced to a change in value ...[12]

In summary, we can see that the only causes of changes in prices of production that Marx discussed in these passages are: (1) a change in the *productivity of labour*, which reduces the labour time required to produce commodities, i.e., reduces the values of commodities; and (2) a change in the *real wage*. Marx never mentioned in any of these passages that another cause of changes in prices of production is or might be the ongoing process of equalisation of profit rates and transformation of output prices into prices of production, as in the TSSI. Therefore, these passages (the only published passages in which Marx discussed the subject of causes of changes in prices of production) all sup-

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11   Marx 1981, p. 397.
12   Marx 1981, pp. 307–8.

port my interpretation of prices of production as long-run centre-of-gravity prices that change only for these two reasons. And all these passages contradict the TSSI interpretation according to which prices of production are short-run prices that change in most periods, even though the productivity of labour and the real wage remain constant. If the TSSI were correct, such changes in prices of production would occur in almost every period (would always occur unless particular prices of production were long-run equilibrium prices), and these changes would be much more common and frequent than increases in productivity and decreases in labour times and values. If the TSSI were correct, surely Marx would have mentioned this important additional cause of changes in prices of production at least once in all these passages, and probably in all of them. But there is not one single word about the TSSI's other cause of changes of prices of production. Therefore, it seems reasonable to conclude that the TSS interpretation of Marx's prices of production is a misinterpretation on this crucial point.

2.2   *Transformation Process over Multiple Periods*

Because the TSSI assumes that prices of production are not long-run centre-of-gravity prices, the transformation of values into prices of production is assumed to be an ongoing process that takes place over *multiple periods*, which are assumed to be real historical periods. The TSSI acknowledges that Marx's own discussion of the transformation in Part 2 of Volume III of *Capital* is in terms of a single period, but it is argued that this is only the first period of a multi-period process, which the TSSI intends to continue into subsequent periods and to complete. In Kliman and McGlone's original 1988 article, their numerical example includes 14 periods. In the first period, the prices of the means of production and labour power are assumed to be equal to their values. The prices of production of the output of the first period become the prices of the inputs of the second period, and so on. In the first 13 periods, prices of production continue to change in every period, even though the productivity of labour and the real wage are assumed to remain constant. The reason their prices of production continue to change in every period is that these changes are necessary in order to continue to equalise the rate of profit in each period (more on this point below). Finally, in period 13, prices of production converge to their long-run equilibrium level, and remain the same in period 14 (and thereafter), unless either the productivity of labour or the real wage changes.

In Kliman and McGlone's later articles and in Kliman's recent book, they present different numerical examples which include only two periods.[13]

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13   Kliman and McGlone 1996; McGlone 1996; and Kliman 2007, pp. 15 ff.

However, it is clear that the equalisation of the profit rate must continue in future periods by means of continuing changes in the prices of production in order to equalise the industry rates of profit. If prices of production did not change in future periods, then the rate of profit would not be equal in future periods.

Kliman and McGlone argued that a multi-period transformation is necessary because the inputs of constant capital and variable capital in Period 1 are equal to the *values* of the inputs, and therefore these values must be subsequently transformed into their prices of production.[14] They argue that the inputs cannot be transformed into prices of production in the first period because the inputs have already been purchased at their values, and these inputs 'cannot be retroactively repriced'. Instead, the input prices start to be transformed only in the second period when the prices of production of the output of the first period become the prices of the inputs of the second period. This transformation of input prices in the second period causes the prices of production of the outputs of the second period to change as well, in order to equalise the rate of profit again on these new input prices, which in turn changes the input and output prices in the third period, and so on, period after period, until the prices of production eventually converge (assuming simple reproduction) to long-run equilibrium prices.

I argue, to the contrary, that a multi-period transformation is *not necessary* because the inputs of constant capital and variable capital *do not have to be transformed*. Marx did not begin his theory of prices of production with the assumption that the prices of the inputs are equal to their values; instead, Marx assumed that the prices of the inputs are equal to their actual long-run equilibrium prices, which are their prices of production. Therefore, the prices of the inputs are in effect *already transformed*, equal to the actual prices of production of the means of production and means of subsistence from the very beginning.

I argue further that there is *no textual evidence* to support the TSSI interpretation that Marx's transformation of values into prices of production takes place over multiple actual historical periods. In all of Marx's discussions of the transformation, it is presented in only *one period*, and as complete in that one period. There is not a single comment by Marx to indicate that his single period analysis is only the first period of a multi-period process, and that his single period analysis should be supplemented and continued into future periods. The complete absence of any suggestion by Marx that additional periods are

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14   Kliman and McGlone 1988, p. 71; and Kliman and McGlone 1996, p. 40.

needed to transform the input prices supports my single-period interpretation over the TSS multi-period interpretation.

The reason why the TSSI prices of production continue to change from period to period is because of the ongoing equalisation of the rate of profit and the transformation process itself. The prices of production of the output at the end of the first period become the prices of the inputs at the beginning of the second period. If prices of production of the outputs were to remain constant, i.e., if the prices of production of the output of the second period were equal to the prices of production of the output of the first period, then rates of profit in the second period would not be equal across industries. Therefore, in order to equalise the rate of profit in the second period, the prices of production of the output of the second period must change and must be different from the prices of production of the output of the first period.

Similar logic applies to future periods, until the prices of production of the output eventually converge to long-run equilibrium prices. In each period, the prices of the inputs are not equal to prices of the output, which implies that the input prices in the next period will be different from input prices in the current period. If the output prices in the next period were to remain the same as they are in the current period, while the input prices changed, then the rates of profit across industries would be unequal. In order to equalise the profit rate, the 'prices of production' of the outputs of the next period must continue to change. Therefore, the TSSI prices of production continue to change from period to period as a result of the ongoing equalisation of the rate of profit and the transformation of output prices into prices of production, even though it is assumed that the productivity of labour and the real wage remain constant. This key feature of the TSSI prices of production clearly contradicts Marx's concept of prices of production as long-run centre of gravity prices, which change only if the productivity of labour or the real wage changes and that are relatively stable over long periods of time.

The TSS multi-period interpretation of the transformation problem is mathematically the same as Shaikh's 'iterative' interpretation discussed in Chapter 7 (and also Morishima's), except that Shaikh's iterations are assumed to be logical iterations within a single period, instead of a series of real historical periods. The quantitative results (long-run equilibrium prices of production and the associated rate of profit) arrived at by the TSSI multi-period transformation process are the same as for Shaikh's iterative interpretation (except for a proportionality factor, due to a different 'normalisation condition'), as Kliman and McGlone have acknowledged.[15]

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15   Kliman and McGlone 1988, pp. 75–6.

Furthermore, as discussed above in Chapter 7, Shaikh's quantitative results are the same as Bortkiewicz's results (again except for a proportionality factor for the same reason); therefore the TSSI's quantitative results are also the same as Bortkiewicz's. Indeed, the iterative procedure that both the TSSI and Shaikh follow is a well-known alternative method of solving a system of simultaneous equations (the method generally used by computers). Thus the iterative method does not yield an alternative solution, but instead is merely an alternative method of calculating the *same solution* as the simultaneous determination method.

Therefore, over the whole transformation process, from values in period 1 to long-run equilibrium prices of production in some future period, there is no quantitative difference between the TSSI interpretation and the simultaneous determination interpretation. The end result is the same long-run equilibrium prices (except for a proportionality factor) and the same rate of profit. Thus, the TSSI interpretation, which starts out as a rejection of simultaneous determination, ends up as an alternative method of calculation for simultaneous determination, with the same quantitative results over the whole transformation process.

Kliman and McGlone acknowledge that their interpretation is 'undeniably identical to an iterative "solution" on a purely *formal mathematical* level', but they argue that their interpretation nonetheless 'begins with different conceptual premises' and ends up with results that are 'conceptually different'.[16] They do not explain exactly what they mean by 'conceptually different' given that the quantitative conclusions are the same. Perhaps it is the fact that the starting point of their interpretation is the labour-values of the means of production and means of subsistence and the value rate of profit. However (as discussed in Chapter 7 on Shaikh's interpretation), in using this iterative method to solve simultaneous equations, one could start with *any* initial values, and would always end up with the same rate of profit and the same long-run equilibrium prices of production (except perhaps for a proportionality factor). This random starting point leading to the same solution does not inspire confidence in the TSS interpretation that labour-values are the causal factors in the determination of the rate of profit and prices of production.

This equivalence of quantitative results also means that, over the whole of the TSSI transformation process, Marx's two aggregate equalities (total price of production = total value and total profit = total surplus-value) *cannot* both be satisfied simultaneously, as in Bortkiewicz's critique. Indeed, in general, *neither*

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16   Kliman and McGlone 1988, pp. 75–6.

of Marx's two aggregate equalities will be satisfied in the TSSI interpretation, because it assumes a different, third aggregate equality: the 'value added' component of both total value and total price of production are equal (the TSSI is similar in this respect to the New Interpretation). That is, [total variable capital + total surplus-value] = [total wages + total profit]. If this aggregate equality is assumed, then Marx's two aggregate equalities will in general *not* be satisfied over the whole transformation process, except under very restrictive assumptions (equal compositions of capital across industries). In all of Kliman and McGlone's articles, the aggregate gross price equality is not satisfied, i.e., total price of production in the last period ≠ total value in period 1. In their first two articles (1988 and 1996), they assume a two department model, and under this assumption, and only under this assumption, total profit in the last period will = total surplus-value in period 1, because assuming the 'value added' component of the total value and total price of production are equal in a two department model is equivalent to assuming that both total profit = total surplus-value and total wages = total variable capital. However, in their 1999 paper and in Kliman's 2007 book, they assume three departments, and under this assumption, total profit in the last period will in general *not* = total surplus-value in period 1, as indeed it does not in both of these examples. Thus, neither of Marx's aggregate equalities is satisfied over the whole transformation process in these three department examples, or in more complicated examples.

Kliman and McGlone argue that we should not evaluate Marx's aggregate equalities over the whole transformation process, from values in period 1 to long-run equilibrium prices of production in some future period.[17] Each period is discrete, they argue, and should be considered on its own. In each period, both of Marx's two aggregate equalities are satisfied, and the price rate of profit = the value rate of profit, and that is all that matters.

The problem with this argument is that the TSSI misinterprets Marx's concept of prices of production. Marx's prices of production are long-run equilibrium prices, and thus his two aggregate equalities are defined in terms of long-run equilibrium prices of production. That is, total prices of production = total value refers to prices of production as long-run equilibrium prices, not to short-run prices, as in the TSS interpretation. Similarly, total profit = total surplus-value refers to profit as one component of long-run equilibrium prices of production. Therefore, Kliman and McGlone's argument that Marx's two aggregate equalities are satisfied for each period is beside the point, because

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17   Kliman and McGlone 1988, p. 76.

it refers to prices of production as short-run prices, not as Marx's long-run equilibrium prices. And for Marx's long-run equilibrium prices of production, neither of Marx's two aggregate equalities are satisfied in the TSS interpretation.

3   Kliman's Response to Prices of Production as Long-Run Centre-of-Gravity Prices

In his 2007 book, Kliman has briefly responded (in a footnote) to my criticism that prices of production are long-run centre-of-gravity prices that change only if the productivity of labour or the real wage changes, as follows:

> [Moseley's] argument does not succeed unless Marx and Moseley mean the same thing by *'productivity'*, which Moseley fails to show. In the passage to which he refers, Marx (Marx 1991a: 307–08) used 'change … in productivity' and 'change in value' synonymously. And as Moseley himself agrees, Marx held that a commodity's value depends in part on the *prices* of the inputs needed to produce it (see e.g. Marx 1991a: 264–65). It thus seems reasonable to conclude that a *'change … in productivity' in the above sense can result from a change of input prices*. On this interpretation, temporalist prices of production do *not* change for reasons other than changes in productivity and real wages.[18]

We can see that Kliman implicitly agrees that Marx's prices of production change only if the productivity of labour changes (leaving aside the real wage for now). However, Kliman suggests an idiosyncratic definition of 'productivity' which depends in part on the *price* of inputs, so that a *change of 'productivity' could result from a change of input prices*, and (implicitly) such a change of input prices could be the result of the ongoing equalisation of the profit rate and the transformation process, as in the TSS interpretation.

I argue, to the contrary, that throughout the three volumes of *Capital*, Marx consistently defined the 'productivity of labour' in purely physical terms – as the ratio of the quantity of output produced per unit of labour (e.g., per labour hour), independent of the prices of inputs. For example, Marx first introduced his concept of 'productivity' in Chapter 1 of Volume I in purely physical terms:

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18   Kliman 2007, p. 109, note 2. Marx 1991a refers to Volume III of *Capital*.

> By 'productivity' of course, we *always* mean the productivity of ***concrete useful labour*** ... Useful labour becomes, therefore, a ***more or less abundant source of products*** in direct proportion as its productivity rises or falls.[19]

And in Chapter 12, on relative surplus-value, an increase in the productivity of labour is defined as a reduction in the labour time necessary to produce a commodity and is explained as the result of 'technological revolutions' and 'alterations of the labour process':

> By an increase in the productivity of labour, we mean an ***alteration in the labour process*** of such a kind as to ***shorten the labour-time*** socially necessary for the production of a commodity, and to endow a ***given quantity of labour*** with the power of producing a ***greater quantity of use-value*** ...

> The technical and social conditions of the process [of production] and consequently the ***mode of production itself must*** *be revolutionised* before the productivity of labour can be increased.[20]

I hope that these key passages are sufficient to 'show' that Marx's concept of productivity is defined in purely physical terms, independent of input prices. Nothing is said in these passages or elsewhere about a change in productivity resulting from a change in the price of inputs, without a change in the physical ratio of output to labour, e.g., as the result of the ongoing process of equalisation of profit rates and transformation of output prices in successive periods, as in the TSS interpretation. Instead, the direction of causation is always the other way around: changes in the prices of the means of production are *caused by* changes in the physical productivity of labour. Thus, it is *not* 'reasonable to conclude' that a change of productivity could result from a change in the prices of the inputs; for Marx, a change of productivity is a change in the physical ratio of output to labour, which results from changes in technology, and which (in the case of means of production) would cause a change in the price of means of production, not the other way around.

It is true that the value of commodities depends in part on constant capital $(P = C + N)$ and thus on the price of the means of production (not the price of

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19   Marx 1977a, p. 137.

20   Marx 1977a, p. 431.

'inputs' as Kliman states; the value of commodities does not depend on variable capital and the price of the means of subsistence), but this does not imply that a change of productivity could be the result of a change in the price of the means of production. The only cause of changes of productivity discussed in Marx's passages reviewed above are technological changes that change the labour times required to produce commodities.

Therefore, I conclude again that the TSS interpretation of prices of production, which change every period, even though the physical productivity of labour remains the same, is a misinterpretation of Marx's concept of prices of production as long-run centre-of-gravity prices.

4 Current Costs and Sequential Determination[21]

In an appendix to Chapter 9 of his recent book, one of the chapters on the transformation problem, Kliman discusses my interpretation.[22] However, this discussion of my interpretation is not really about my interpretation of the transformation problem, and is thus out of place in this appendix. This is obvious because Kliman discusses my interpretation in terms of a *one commodity model*, and the transformation problem does not even arise in a one commodity model. There is no difference between the value and the price of production of the one commodity.[23]

Instead, the issue discussed in Kliman's appendix is whether or not constant capital is revalued to current costs as a result of technological change. This is an important issue, but it is a separate issue from the transformation problem. All interpretations of the transformation problem, including mine and Kliman's, have assumed constant technology.

Therefore, it is not relevant to introduce technological change into a discussion of the transformation problem.

However, there is one argument related to technological change in this Appendix that is relevant to my interpretation of the transformation problem.

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21 For a further discussion of the current cost evaluation of constant capital, see Moseley 1996.

22 Kliman 2007, pp. 170–2.

23 In this same Appendix, Kliman discusses Jean-Guy Loranger's interpretation of the transformation problem, but not mine. There are two 'branches of production' in Kliman's numerical example for Loranger's interpretation, but there is only one branch in Kliman's numerical example for my interpretation (only 'Year 1' and 'Year 2' for the one commodity).

Kliman asserts that, in the case of technological change, the assumption that constant capital is valued in current costs *necessarily implies or requires the simultaneous determination* of input prices and output prices. I argue that this assertion is not true: current cost valuation of constant capital, as I define it, does not imply or require the simultaneous determination of input and output prices.

As discussed in previous chapters, constant capital is taken as given in the determination of output prices, because it has been advanced in the sphere of circulation, and thus already exists and is in principle a known quantity. It is a *given datum from the sphere of circulation*. If the price of means of production in the sphere of circulation changes, this would continue to be true. The constant capital component of all similar commodities would be revalued as equal to the *new* price of production of the means of production, and this new magnitude of constant capital would also be taken as given in the determination of output prices, for the same reason as the old magnitude of constant capital – because the new magnitude of constant capital has been advanced in the sphere of circulation prior to the sale of the output, and thus already exists and is already a known datum. It is just a different given magnitude. The new magnitude of constant capital becomes the new given 'benchmark' against which M′ is measured and ΔM is determined.

Marx's discussions of examples of the revaluation of constant capital usually begin with something like the following: 'Assume the price of cotton has increased' (e.g., from a sixpence per pound to a shilling per pound).[24] This increase in the price of cotton is assumed to have already occurred, as evidenced by the most recent purchases of cotton on the market, and is *taken as given* in the further analysis of the *effects* of this given increase in the price of cotton. Marx's question in this analysis is this: how does this given increase in the price of cotton affect the constant capital (transferred value) component of the price of commodities that use cotton as an input (and, also, how does this increase of constant capital affect the rate of profit)? Marx's answer to this question is: the constant capital component of the price of all similar commodities that exist *anywhere in the circuit of money capital* is revalued accordingly. 'Anywhere' in the circuit of money capital includes all three phases: before production, during production, and after production / before sale. There is no reason in connection with this issue to make any distinction between the three phases. In all three phases prior to sale, the new magnitude of constant capital has been advanced in the sphere of circulation to purchase raw materials

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24   Marx 1981, pp. 317–18.

prior to the sale of the output and prior to the recovery of the constant capital advanced, and is taken as given as such. The new magnitude of constant capital is an actual fact, just like the old magnitude; the new magnitude is a more current actual fact. Contrary to Kliman, there is no reason to assume that the constant capital advanced cannot be revalued, and cannot be taken as given as revalued, after the means of production have entered production.

The following passage (from the chapter on Smith in the *Theories of Surplus-Value*, quoted above in Chapter 4) clearly states that, if the price of the means of production changes, then the magnitude of constant capital will also change; and this new magnitude of constant capital is still a '*postulated* value which must *reappear* in the value of the product':[25]

> If we take society at any one moment, ***there exists*** simultaneously in all spheres of production, even though in very different proportions, a ***definite constant capital – presupposed as a condition of production –*** that once and for all belongs to production and must be given back to it ... It is true that the *value* of this constant part can fall or rise, depending on whether the commodities of which it is composed have to be reproduced at less or greater cost. This *change of value*, however, ***never alters the fact that in the process of production, into which it enters as a condition of production, it is a*** postulated *value which must* reappear *in the value of the product*.[26]

Kliman can of course continue to argue that, according to Marx, there is no revaluation of constant capital after the means of production enter production, but that does not affect the substantial logical issue here – current cost valuation of constant capital, as I define it (which I think is how Marx defined it), does *not* necessarily imply or require the simultaneous determination of input prices and output prices. Current cost valuation of constant capital coming from the sphere of circulation is perfectly compatible with sequential determination, and indeed requires sequential determination. According to my interpretation, the price of cotton is not an 'unknown' that is determined simultaneously with the price of yarn. Rather, the price of cotton is *taken as given* at its current (most recent) price, as evidenced in the sphere of circulation, up until the sale of the output. Kliman suggests that there is 'no quantitative meaning' to taking constant capital as 'given' after the means of produc-

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25   For many more passages that support this interpretation, see Moseley 1996.
26   Marx MECW, v. 30, p. 413 [TSV, v. I, p. 109].

tion have entered production. But this is not true. The quantitative meaning of 'given constant capital' in Marx's cotton and yarn example is the new price of cotton, as evidenced in the sphere of circulation; e.g., *two shillings*, with a clear quantitative meaning.

It should also be added that Kliman's presentation of 'Moseley's interpretation' of the determination of constant capital in the case of technological change in this Appendix is a gross misrepresentation of my interpretation, again because it assumes a one commodity model. A one commodity model cannot adequately represent my interpretation because it cannot distinguish between a change in the price of *inputs* and a change in the price of *outputs*; any change in the price of the input is immediately and automatically a change in the price of the one commoditiy, and vice versa. Therefore, such a one commodity model limits the determination of constant capital in the case of technological change to only *two polar opposite cases*: (1) constant capital is equal to the *historical cost* of the one commodity, which is taken as given; or (2) constant capital is equal to the *current cost* of the one commodity, which is determined simultaneously with the price of the one commodity as output.

However, in the general case, in which the means of production used in the production of outputs are not the same commodities as the outputs, one can distinguish between a change in the prices of the inputs and a change in the prices of the outputs, and there is *another alternative* for the determination of constant capital in the case of technological change: constant capital can be taken as given as the *current (most recent) cost* of the means of production, as already manifested in the sphere of circulation, up until the time of the sale of the output. If there is a change in the price of the means of production, any time between the purchase of the inputs and the sale of the output, then the constant capital can be taken as given at this new current price of the means of production, rather than the old historical price of the means of production.

One bizarre result of Kliman's misunderstanding of my interpretation is the following: in Kliman's numerical example of 'Moseley's interpretation' in his Appendix, an increase of productivity in the production of the output reduces the price of the output. And since there is only one commodity, the price of the input is also reduced. However, if there were multiple commodities, then a change in the price of one commodity as output would have little or no effect on the prices of its own inputs. Kliman then argues that 'Moseley's interpretation' would assume that the money constant capital would *stay the same*, even though the price of the input has fallen. I don't know how Kliman arrives at this misunderstanding of my interpretation, since I have always emphasised that if there is a change in the price of the means of production, then constant capital will change accordingly. Finally, Kliman concludes that,

since the price of the input has fallen, and the constant capital has remained the same, more inputs are purchased to produce the same quantity of output, so that 'capital productivity' has declined (!). This absurd conclusion follows from two assumptions that are not part of my interpretation: (1) that there is only one commodity, and (2) that constant capital remains the same even if the price of the means of production changes.

Kliman also argues that the rate of profit in my interpretation is the same as the Sraffian 'physicalist' rate of profit, but here too his argument is based on the inappropriate assumption that the input and the output are the same one commodity. This assumption, and only this assumption, makes it possible to cancel the λ's (labour-values) on p. 173 and arrive at Kliman's conclusion. Kliman asserts that 'it is possible (but much more tedious) to show that the same conclusions hold true in multisector examples'. But this assertion is false. I showed in Chapter 6 that the rate of profit in Marx's theory is not the same as the rate of profit in Sraffa's theory. The rate of profit in Marx's theory refers in principle to the actual annual rate of profit in the real capitalist economy, which reflects actual sales of commodities and actual profit on these actual sales. By contrast, the rate of profit in Sraffian theory is a *hypothetical* rate of profit, completely unique to Sraffian theory. It is a rate of profit for a hypothetical unit time period (e.g., Steedman's 'week'), and it includes imaginary profit paid on 'partially completed products' and imaginary profit paid on 'partially used machines', even though these 'joint products' are not actually sold on markets.

Furthermore, the difference between Marx's rate of profit and the Sraffian rate of profit was clearly illustrated in Chapter 6 by the extreme case of *full automation*. In this case, the Sraffian rate of profit predicts that, if there is a physical surplus, then there will be a positive profit, even though there is no labour and no surplus labour. Marx's theory, on the other hand, predicts that, if there is no labour and hence no surplus labour, then there will be no profit (since $S = m\,L_s$), even though there is a physical surplus. As explained in Chapter 6, the reason for these different conclusions (besides the labour theory of value in Marx's theory) is the different methods of determination of constant capital and the prices of the means of production in the two theories. In Marx's theory, constant capital is taken as given, as the actual quantities of money capital advanced to purchase means of production at the beginning of the circuit of money capital in the real capitalist economy, and this given pre-existing constant capital must be recovered before there can be any profit. In Sraffian theory, on the other hand, the actual constant capital is not taken as given, but instead the prices of the means of production are 'unknowns' and are determined simultaneously with the prices of the output, and the prices of

the means of production can always be determined low enough to result in a positive rate of profit, as long as there is a surplus product.

Therefore, the rate of profit in my interpretation of Marx's theory is not the same as the rate of profit in the Sraffian theory. The two theories are not even about the same rate of profit; furthermore, they come to opposite conclusions with respect to the all-important question of the necessity of surplus labour in order to have a positive profit.

Conclusion

In sum, I think Kliman and McGlone (and the TSSI in general) have made important contributions to Marxian scholarship. Their main contributions are: (1) the insistence that Marx's theory is based on the logic of *temporal* (or sequential) *determination*, not on the logic of simultaneous determination; and (2) the insistence that Marx's theory of prices of production is based on a *single system* framework, in which values and prices of production are mutually interdependent, rather than a dual system framework, in which values and prices of production are mutually separate and independent.

However, the main problem with the TSS interpretation, in my view, is that it assumes that Marx's prices of production are short-run prices, that change from period to period, even though the productivity of labour and the real wage remain constant, in contrast to Marx's prices of production, which are long-run centre-of-gravity prices that change if and only if either the productivity of labour or the real wage changes. I have presented substantial textual evidence in this chapter and in Moseley 1999 to support my interpretation that Marx's prices of production are long-run centre-of-gravity prices in this sense.

One way to compare the TSS interpretation and my interpretation is the following: the two interpretations agree that, in any given period, *constant capital and variable capital are taken as given*, as the money capital advanced to purchase means of production and labour power, which are assumed to be equal to the *prices of production* of the means of production and means of subsistence (respectively). This is an important agreement.

However, there is disagreement over the precise meaning of 'prices of production', and thus over the meaning of the 'prices of production of the inputs'. According to the TSSI, prices of production are short-run prices, and thus the prices of production of the inputs are also short-run prices, and the prices of production of the means of production and means of subsistence as inputs are *not* equal to the prices of production of the means of production and means of subsistence as outputs. Because input prices are not equal to output prices,

prices of production will continue to change in the next period, due solely to the continuation of the equalisation of the rate of profit, without changes in the productivity of labour or the real wage, contrary to all the textual evidence. As a result, Marx's two aggregate equalities are not satisfied over the whole multi-period transformation process, and the rate of profit also changes from period to period, so that the price rate of profit at the end of the process ≠ value rate of profit at the beginning of the process.

I argue that, if the proponents of the TSSI would accept that prices of production are long-run centre-of-gravity prices, then all the above problems would disappear. This revised TSSI would be consistent with the substantial textual evidence on this issue. And since the economy is assumed to be in long-run equilibrium, input prices are equal to output prices, and the equalisation of the profit rate and transformation process would be complete after one period, as Marx presented it in Chapter 9. Finally, both of Marx's aggregate equalities over the whole transformation process would always be satisfied, and the rate of profit would not change in subsequent periods (unless there were a change of productivity or of the real wage). A revised TSSI along these lines would be a clear improvement.

The Rethinking Marxism Interpretation

Another important reinterpretation of Marx's theory and the transformation problem in recent decades has been presented in a series of papers by Rick Wolff, Bruce Roberts, and Antonio Callari (hereafter referred to, with apologies, as WRC). Their first two papers were published in 1982 and 1984.[1] More recent papers by Roberts have extended their interpretation to new issues (e.g., the reduction of concrete labour to abstract labour), but their basic interpretation of the transformation problem has remained essentially the same. This chapter discusses primarily their first two papers. I have labelled their interpretation the 'Rethinking Marxism' interpretation, since all three authors have been prominent leaders of the Rethinking Marxism group.

There are several important issues on which the WRC interpretation is similar to my interpretation, and other issues where there are significant differences between our interpretations. This chapter will first discuss the similarities and then will discuss the differences. The third section examines WRC's formal mathematical model, and the fourth section responds to WRC's critique of my interpretation.

1   Similarities

1.1   *Constant and Variable Capital are the Same for Both Values and Prices of Production*

The most important similarity between our interpretations is that we agree that constant capital and variable capital are the *same magnitudes* in the determination of *both* values and prices of production, and that these magnitudes are equal to the *prices of production* of the means of production and means of subsistence, not their values. This similarity is very important because it means that constant capital and variable capital *are not supposed to be transformed* from values to prices of production, and that Marx *did not fail* to make this unnecessary transformation. Therefore, the main criticism of Marx's theory of prices of production over the last century – that he 'failed to transform the inputs of constant capital and variable capital' – is mistaken, and is based on a

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1 Wolff, Roberts, and Callari 1982; Wolff, Callari, and Roberts 1984.

misinterpretation of Marx's logical method, and in particular of the method of determination of constant capital and variable capital.

Furthermore, WRC's rationale for this interpretation of constant capital and variable capital is also similar to mine. WRC emphasise that the commodities analysed by Marx are *products of capital*, not a more general commodity that could be the product of non-capitalist production. The inputs to capitalist production enter through the sphere of circulation, and therefore '*circulation is a precondition for capitalist production*'. The inputs to capitalist production are purchased in circulation, and they are purchased at their actual *prices of production*, not at their values. Therefore, the constant capital component of the *value* of commodities is equal to the *price of production* of the means of production; and the variable capital component of the *new value* produced is equal to the *price of production* of the means of subsistence. Since the constant capital and variable capital components of the *price of production* of commodities are also equal to the prices of production of the means of production and means of subsistence, it follows that these two components of capital are the *same magnitudes* for the determination of *both* values and prices of production, and do not have to be transformed from values to prices of production.

However, we will see below (Section 2.2) that, in spite of this important similarity, the ways in which the magnitudes of constant capital and variable capital are *determined* are very different in the two interpretations.

1.2   *Value of 'Commodities as Products of Capital'*

Another important similarity between our interpretations, which is related to the first similarity, is that the *concept of value changes* in *Capital*, from an initial abstract concept of the value of 'simple commodities' to a more concrete view of the value of 'commodities as products of capital'.[2] The value of 'simple commodities' is the total labour time required to produce a commodity, which is the sum of the labour time contained in the means of production (L_{mp}) and the current socially-necessary labour time required to produce the commodity (L_c): i.e. value1 = L_{mp} + L_c. On the other hand, the value of 'commodities as products of capital' is different. The two second components are the same (L_c),

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2 WRC use the term 'value' to refer exclusively to the substance and magnitude of value (abstract labour and socially-necessary labour time); they ignore the form of appearance of value as money and prices. I disregard this difference between our interpretations in this section, and will discuss it in Section 2.1. The similarity discussed here has to do with the 'past labour' component of the 'value' of commodities, whether 'value' is defined in terms of labour time only (WRC interpretation) or in terms of both labour time and money (my interpretation).

but the two first components, which have to do with 'past labour' or 'transferred value', are different. The 'past labour' of the value of commodities as products of capital is not L_{mp}, but is instead the labour time represented by the actual money constant capital advanced to purchase the means of production *at their prices of production* (L_p): i.e. value2 = L_p + L_c. The labour time contained in the means of production has already been represented by the price of production at which they were purchased, and it is in this form that past labour becomes the first component of the value of commodities as products of capital.

However, there is also an important disagreement between us on this issue – which has to do with the *location* in the three volumes of *Capital* at which the concept of value changes. WRC argue that the simple abstract concept of value applies to all of Volume I (and also Volume II), and that the concept of value changes only in Part 2 of Volume III, when the competition of capitals is considered. I argue, to the contrary, that the concept of value changes as soon as the theory analyses the circuit of *capital* in Part 2 of Volume I and the production of surplus-value in Part 3. The theory of surplus-value in Part 3 is clearly about commodities as 'products of capital', because these commodities contain surplus-value, the quintessential characteristic of capitalism, and thus the second concept of value applies from this point on.

One clear explicit indication that commodities in Volume I are analysed as 'products of capital' is in the 'Results of the Immediate Process of Production' manuscript, which is a summary of Volume I ('immediate process of production') and a transition to Volume II. Part 1 of the 'Results' is entitled 'Commodities as the product of capital'. In this part, Marx explains that 'commodities as products of capital' that are analysed after Part 1 are different from the 'simple commodity' that is analysed in Part 1. The most important difference is that 'commodities as product of capital' contain surplus-value, and therefore are produced, not just by labour, but in part by unpaid labour. Another important difference discussed is precisely the determination of constant capital, the first component of the value of commodities. WRC cite one passage from the 'Results' (p. 969) to support their interpretation of 'commodities as products of capital', but the 'Results' was intended to be located at the end of Volume I, as a transition from Volume I to Volume II (see Mandel's Introduction),[3] and explicitly excludes competition (i.e., before Volume III). Therefore, the theory of value and surplus-value in Volume I is already about 'commodities as products of capital', not 'simple commodities'. (I discussed this passage and several similar passages from the 'Results' in Chapter 4, Section 3, above).

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3   Mandel 1977.

WRC's interpretation implies that Volume I of *Capital* must be about a *hypothetical* capitalism, in which inputs are purchased at their values, rather than at their prices of production, and constant capital and variable capital are equal to these hypothetical values. It is as if inputs to capitalist production are 'simple commodities', rather than products of capital. I argue, to the contrary, that Volume I analyses *actual* capitalism, and the determination of the total surplus-value in actual capitalism, and this actual total surplus-value is then taken as given in the analysis of the distribution of the total surplus-value among individual capitals in Volume III. In order to explain the actual total surplus-value, the inputs of constant capital and variable capital themselves *must be the actual* quantities of money capital advanced to purchase means of production and labour power in the real capitalist economy, which are (tend to be) equal to the *prices of production* (not the values) of the means of production and labour power, and which are taken as given as known quantities.

1.3 *Production of the Total Surplus-Value Prior to Its Distribution: Class as Entry Point*

Another important similarity between our interpretations is the assumption that the production of surplus-value should be analysed prior to its distribution. WRC emphasise that Marx's theory privileges *class*, and the total class relation between capitalists and workers is the 'entry point' for Marx's theory.[4] Volume I is about the total surplus-value produced by the working class as a whole for the capitalist class as a whole, and Volume III is about the distribution of surplus-value, i.e., of the division of the total surplus-value among individual capitalists and different types of capitalists. In this way, the theory proceeds by 'levels of argument' and by 'intermediate stages'. WRC state that 'it is crucial to *first discuss the class relation* and develop the notion of *what* it is that is distributed via circulation (commodities containing unpaid labour-time) as the *necessary prior step* to the problem of *how* a capitalist distribution of those commodities takes place'.[5] Similarly, WRC also state that 'the price of production of any individual commodity is *constrained by the aggregate amount* of

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4 The primacy of class in Marx's theory has of course also been emphasised by Wolff and Resnick in many works. In *Knowledge and Class* (1987, Chapters 3 and 4), the method of class analysis is applied to the production and distribution of surplus-value. Wolff and Resnick emphasise that the total surplus-value is determined by the class process between capitalists and workers, prior to its intra-class distribution among individual capitalists. But they do not discuss the determination of the rate of profit and prices of production in this book (or elsewhere that I know of).

5 Wolff, Roberts, and Callari 1982, p. 570.

unpaid labour-time performed in the economy. The profit component of the price of production of any single commodity is then simply a proportional share of the surplus-value generated in the aggregate by all capitals'.[6]

WRC do not say so explicitly, but the implicit meaning of the 'constraint' of the total unpaid labour on the profit component of prices of production mentioned above would seem to be that the total surplus-value produced by the total unpaid labour is *taken as given* in the determination of the rate of profit and prices of production and the resulting distribution of total surplus-value, as in my interpretation. However, we will see below that the total surplus-value is not in fact predetermined and taken as given by WRC and that the total surplus-value plays no role in their interpretation of the determination of the rate of profit (similar in this respect to the New Interpretation and the Temporal Single System Interpretation). Therefore, WRC do not consistently adhere to their methodological principle of 'class as entry point'. In their interpretation of the determination of the rate of profit and prices of production, the Volume I class theory of surplus-value is *not* a 'necessary prior step', but is instead an unnecessary detour.

WRC argue that Marx faced a 'dilemma of discourse' in Volume I. On the one hand, a theory of surplus-value requires a theory of value, which they interpret as a micro theory of individual exchange-values. On the other hand, Marx's privileging of class requires that the total surplus-value be theorised prior to its distribution among individual capitalists. WRC argue that Marx's solution to this dilemma was to assume a *hypothetical*, preliminary 'rule of exchange', according to which individual commodities exchange according to their values, and use this preliminary rule of exchange to determine the total surplus-value. However, this strategy means that the total surplus-value determined in Volume I by the class analysis is a *hypothetical* quantity, and not the actual quantity of surplus-value produced by the working class as a whole. And we will see below that, in the determination of the rate of profit and prices of production, WRC abandon the primacy of class and the prior determination of the total surplus-value and switch instead to Sraffian theory and the simultaneous determination of the total surplus-value and its distribution.

I argue, to the contrary, that Marx's solution to this 'dilemma' was to distinguish between capital in general and competition, i.e., between the macro prior determination of the total surplus-value and the subsequent micro determination of the individual parts of surplus-value and individual prices of production. Volume I applies only to the total surplus-value produced in the economy as a whole; it does not apply to hypothetical prices of individual industries. The

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6 Wolff, Roberts, and Callari 1982, p. 575.

main variable that is determined in Volume I is the total surplus-value produced in the economy as a whole. A theory of the total surplus-value does not require a theory of individual prices ('rule of exchange' for individual commodities). All that is required is an aggregate, macro theory of total value and total surplus-value. And that is what Volume I provides, as I have shown in this book.

1.4   Two Aggregate Equalities are Always Satisfied

Another important similarity, that follows from the above similarities, is that both of Marx's two aggregate equalities are always satisfied, including the gross price-value equality. These two aggregate equalities are not conditional equalities, that may or may not be satisfied, but are instead identities that are always true by definition, or by the nature of Marx's logical method, especially the method of determination of constant capital and variable capital.

2   Differences

2.1   Variables Defined in Units of Labour Time or Money?

The first important difference between our interpretations to be discussed is that WRC argue that *all* the variables in Marx's theory are defined in units of *labour time*, including constant capital, variable capital, and surplus-value, and even the Volume III variables of cost price, price of production, and profit. *Money* is almost entirely missing in their interpretation, except for a few passing remarks about the money capital advanced to purchase means of production (see more below). The suggestion seems to be that the three volumes of *Capital* could have been presented entirely in terms of labour times. WRC acknowledge that Marx often expressed or measured labour times in terms of money, but they argue that this representation is not an essential part of the theory, but only for purposes of convenient exposition or illustration. Marx's theory is really about labour times, but Marx often chose to illustrate these quantities of labour time with quantities of money. Their interpretation on this point is similar to that of Duménil, which was discussed in Chapter 8 and need not be repeated here.[7]

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7   Even the concept of 'value form' (which is emphasised by WRC) is defined by them in terms of labour time – the labour time attached to commodities in the sphere of circulation. I argue that Marx's concept of 'value form' refers to quantities of money – as the observable quantities of money which are the necessary 'forms of appearance' of unobservable quantities of abstract labour. That is certainly what Marx meant by the title of Section 3 of Chapter 1 of Volume I of *Capital* – 'The Value-Form' – in which he explains the 'mystery of money'.

I argue of course that the key variables in Marx's theory are components of *money capital*, and thus are defined in units of money. As emphasised many times in this book, the logical framework of Marx's theory is the circuit of money capital: $M – C ... P ... C' – M'$. Marx's theory is about money from the very beginning – from Chapter 1, Section 3 of Volume I of *Capital*. The title of Part 1 of Volume I is 'Commodities and *Money*'. The title of Part 2 is 'The Transformation of *Money* into *Capital*'; the title is *not* 'The Transformation of Labour Time into Capital'. Capital is *money* with its own unique form of circulation (making more money). Surplus-value is defined as ΔM, the increment of money that emerges at the end of the circulation of money capital. ΔM is the main empirical phenomenon that Marx's theory is intended to explain. I think the textual evidence to support this 'monetary' interpretation of Marx's theory is indisputable. I don't see how the components of 'money capital advanced' could be interpreted solely in units of labour time.

This all-important phenomenon of surplus-value (ΔM) is of course *explained* in terms of labour time (surplus labour time), but surplus-value is not *defined* in terms of labour time. Similarly, constant capital and variable capital are defined as the two components of the initial money capital advanced (the '*money laid out*', as Marx said many times) to purchase means of production and labour power (i.e., $M = C + V$). These definitions are not just for convenient exposition or illustration, but rather they specify the most important phenomena that Marx's theory is intended to explain. Capitalism is above all else a *money-making economy*, and Marx's theory explains how this money-making is accomplished. A theory of capitalism whose variables are all labour times does not explain ΔM. What kind of theory of capitalism would this be?

Why would Marx want to illustrate quantities of labour time with quantities of money? If the theory really were only about quantities of labour time, why not illustrate quantities of labour time directly in terms of labour hours? Indeed, that is the way Marx illustrated labour times in his examples in *Capital*. But these examples generally also include quantities of money as well as quantities of labour time. Marx's labour theory of value is not just about labour times, but is instead about the *relation of determination between quantities of labour times and quantities of money*, and is based most fundamentally on the assumption that the quantity of current labour determines the quantity of (money) new value, as represented by the basic equation: $N = m L$. N is very definitely a quantity of money. In Marx's examples in *Capital*, L is illustrated in terms of labour hours and N is illustrated in terms of English money (pounds and shillings). For example, in the key Chapter 7 of Volume I, Marx's theory of surplus-value is illustrated by the working day of an average worker. L is first 6 hours and then L is 12 hours. The MELT (m) is assumed to be 0.5

shillings per hour. Thus the money new value produced in the two working days is first 3 shillings and then 6 shillings. And, since variable capital = 3 shillings, the surplus-value produced in the two cases is first 0 shillings and then 3 shillings, respectively. Surplus-value is indeed *determined* by surplus labour (6 hours in the second case); but surplus-value is *defined* as 3 shillings. And Marx's theory explains the origin and magnitude of this **ΔM**. As Marx concluded the presentation of his theory of surplus-value in Chapter 7: '… *27 shillings* have been turned into *30 shillings*; a surplus-value of *3 shillings* has been precipitated. The trick has at last worked: ***money has been transformed into capital***'.[8] I don't see how one could say that capital and its components are defined in units of labour time, and that money plays no essential role in Marx's theory. This interpretation leaves out the main phenomena that Marx's theory is intended to explain – ΔM, or how money is transformed into capital.

Furthermore, WRC's interpretation that all the variables in Marx's theory are defined in units of labour time contradicts their rationale for assuming that the constant capital component of the value of commodities is equal to the price of production of the means of production, rather than their value (Section 1.1 above). As discussed above, their rationale is that means of production are *purchased by constant capital* at prices of production; therefore, constant capital should be defined as equal to the price of production of the means of production (which is defined by them in units of labour time). However, the means of production are purchased at prices of production with *money capital*, with one component of the initial *money capital*, the constant capital component; means of production are not purchased with quantities of labour time. Therefore, constant capital should be defined in terms of the actual money that is advanced to purchase means of production at prices of production.

David Kristjanson-Gural has added money to WRC's labour time interpretation of Marx's theory, by introducing a new interpretation of the MELT and using this MELT to convert labour time quantities in WRC's equations into money price quantities.[9] Kristjanson-Gural's extension of the WRC model to include money is discussed in the Appendix to this chapter.

2.2 *Determination of Constant Capital and Variable Capital*
Another important difference between our interpretations has to do with the method of determination of the inputs of constant capital and variable capital in Marx's theory of value and surplus-value in Volume I and theory of prices of

8 Marx 1977a, p. 301.
9 Kristjanson-Gural 2008.

production in Volume III. I argue of course that constant capital and variable capital are initially *taken as given*, as the actual quantities of money capital advanced to purchase means of production and labour power at the beginning of the circuit of money capital, which tend to be equal to the prices of production of the means of production and means of subsistence. The circuit of money capital is the logical framework of Marx's theory, and the circuit of money capital begins with quantities of money constant capital and variable capital advanced. Therefore, Marx's theory of the circuit of money capital also begins with the money constant capital and variable capital advanced, and explains how the initial given money capital becomes more money.

WRC, on the other hand, argue that constant capital and variable capital are *derived from given quantities of physical goods* – the means of production and the real wage – and are determined simultaneously with the prices of production of the outputs, similar to Sraffian theory and the Sraffian interpretation of Marx's theory. Instead of the circuit of money capital, the implicit symbolic expression of the WRC framework is similar to the Sraffian interpretation:

Q ... P ... C′

Again, money is missing entirely from their interpretation. Instead of being initially taken as given as quantities of money capital, constant capital and variable capital are derived from the given physical quantities of the means of production and the real wage (in units of labour time). (Notice that WRC take as given the *real wage* rather than the money wage, in contrast to the New Interpretation).

WRC's interpretation that constant capital and variable capital are derived from given physical quantities contradicts their argument that '*circulation is a precondition for production*', which they advance to support their interpretation that the constant capital component of the value of commodities is equal to the price of production of the means of production (Section 1.1 above). 'Circulation is a precondition for capitalist production' suggests that the initial act of exchange in the sphere of circulation provides (some of) the initial presuppositions of the theory of value and surplus-value in the sphere of production – the actual quantities of money constant capital and variable capital advanced to purchase means of production and labour power in the sphere of circulation, prior to production. However, the interpretation of the initial givens in Marx's theory as physical quantities of means of production *eliminates circulation* as a 'precondition for capitalist production'. This interpretation makes it appear as if the inputs enter capitalist production as *mere physical quantities*, without first going through circulation and without predetermined prices.

I argue, to the contrary, that precisely *because* 'circulation is a precondition for capitalist production', the initial givens in Marx's theory are the quantities of money capital advanced in the sphere of circulation, prior to production. The inputs to capitalist production are not mere physical quantities, but are instead *commodities*, with already existing prices, which are purchased with money capital, and these already existing prices and quantities of money capital are presupposed in the determination of the prices of the outputs and the explanation of how the presupposed quantity of money capital (M) becomes more money capital (M+ΔM).

WRC emphasise one important passage in particular to support their interpretation that the constant capital component of the value of commodities is equal to the price of production of the means of production (not their values). I discussed this passage in Chapter 4, and the reader will recall that this passage is from the *Manuscript of 1861–63* and is the first time (in his published works) that Marx discussed this important feature of his theory (in a discussion of Bailey). I will re-quote the last sentence of the passage here:

> ... the difference between the cost price [i.e. price of production] and value [of the means of production], insofar as it enters into the price of the new commodity independently of its own production process, is incorporated into the **value** of the new commodity as a **presupposed** element.[10]

I agree with WRC that this passage is strong evidence that the first component of the *value* of commodities is the *price of production* of the means of production, not their value. However, as discussed in Chapter 4, there is a further point in this passage, which is not evident in the *Theories of Surplus-Value* because of a poor translation.[11] Marx states in this sentence that the price of the means of production is *presupposed* in the determination of the value of commodities. As discussed in Chapter 4, the German word for 'presupposed' – 'vorausgesetztes' – is unfortunately mistranslated in the *Theories of Surplus-Value* as 'antecedent'. 'Antecedent' correctly conveys the temporal implication that constant capital exists in the sphere of circulation prior to production (as part of the initial **M**), but it does not capture the important logical meaning of 'presupposed' (i.e., taken as given) as a factor in the determination of the *value* of commodities.

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10   Marx MECW, v. 32, p. 352 [TSV, v. III, p. 167].

11   In WRC's papers in the early 1980s, this passage is quoted from the *Theories of Surplus-Value*; the more recent and better translation in Volume 32 of the new 50-volume *Marx-Engels Collected Works* was published later in 1991.

There is a connection between these two meanings: *because* the constant cap-ital *exists prior* to production, it is *presupposed* in the determination of the value of the products, even though the constant capital is equal to the price of production of the means of production, not their value. The correct transla-tion of *vorausgesetztes* strengthens the case for the 'monetary' interpretation of constant capital and variable capital – that they are presupposed *because* they already exist prior to production, as quantities of money capital advanced in the sphere of circulation. In WRC's misinterpretation, on the other hand, constant capital is *not presupposed*, but instead the prices of production of the means of production are determined simultaneously with the prices of produc-tion of the output.

WRC acknowledge that there are many passages in which Marx states that the initial money capital is taken as given ('Marx makes this sort of assumption quite frequently').[12] But they argue that these statements are just for 'expository purposes'. I disagree. I argue that these statements accurately and consistently express Marx's logical method. The initial **M** is taken as given in order to explain **M′** and **ΔM**.

WRC's argument as to why Marx's many statements are only for 'expository purposes' has to do with the issue of historical costs vs. current costs. Their argument can be briefly summarised as follows: (1) Taking the initial money capital as given implies that constant capital must be evaluated at the *historical cost* of the means of production, and cannot be revalued as the *current cost* of the means of production. (2) But Marx clearly recognised that constant capital can and should be revalued as the current cost of the means of production. (3) Therefore, the inference is made that Marx must *not* have taken the initial money capital as given.

However, the inference (3) is false, because its premise (1) is false. I have argued in previous chapters (especially Chapter 9, Section 5) that the initial money constant capital is *both* taken as given *and* assumed to be equal to the *current cost* of the means of production. It is taken as given as the current cost of the means of production, as already purchased and sold in the sphere of circulation. If the price of the means of production changes, the means of production with a new price *must still go through the sphere of circulation*, prior to production, just like the means of production with the old price. As soon as a new average price is established in the sphere of circulation, the *given money constant capital changes* to this new price of the means of production, and this change also affects all similar commodities still in process and not

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yet sold (i.e., either in production or in circulation as finished products). The new current price of the means of production is taken as given ('circulation is the precondition to production'), just like the old price was before. Therefore, taking the initial money constant capital as given is fully consistent with the revaluation of constant capital in terms of current costs. We saw in Chapter 4 that Marx stated explicitly that although the magnitude of constant capital may change, constant capital is still a 'presupposed' quantity which must reappear in the value of the output. Once again:

> It is true that the *value* of this constant part can fall or rise, depending on whether the commodities of which it is composed have to be reproduced at less or greater cost. This *change of value*, however, ***never alters the fact that in the process of production, into which it enters as a condition of production, it is a postulated value which must* reappear *in the value of the product*.**[13]

2.3 *Determination of the Rate of Profit*

Another very important difference between the WRC interpretation and my 'macro-monetary' interpretation is the method of determination of the rate of profit. We have seen in Part 1 that, according to Marx's theory, the rate of profit is determined by dividing the total surplus-value by the total capital invested, and the total surplus-value is determined by the Volume I macro theory and then taken as given (predetermined) in the Volume III micro theory of the rate of profit and prices of production. Thus there is a direct logical connection between Marx's theory of surplus-value and his theory of the rate of profit; the former is the precondition of the latter.

In contrast, in WRC's interpretation, there is *no logical connection* between the theory of surplus-value and the determination of the rate of profit (similar to the New Interpretation in this important respect). The total surplus-value plays no role whatsoever in the determination of the rate of profit. Instead, Marx's theory of surplus-value and the rate of profit is abandoned, and replaced by the Sraffian theory of the rate of profit – derived from given physical quantities of inputs and outputs and determined simultaneously with prices of production (of both inputs and outputs). This Sraffian determination of the rate of profit does not depend in any way on the 'class' theory of surplus-value in Volume I. This point will be clearer in Section 3 below, where WRC's formal model is examined.

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13   Marx MECW, v. 30, p. 413 [TSV, v. I, p. 109].

WRC mention Marx's critique of Ricardo's faulty treatment of the rate of profit: 'Marx often criticised Ricardo for immediately assuming an average rate of profit, thereby presupposing its consistency with his concept of value, rather than developing the relation between value and the rate of profit'.[14] However, WRC fail in a similar way: they also do not develop the relation between value and the rate of profit. Marx developed this relation rigorously, but WRC have abandoned Marx's theory and instead determine the rate of profit according to Sraffian theory, which does not depend on value in any way. In the Rethinking Marxism interpretation of Marx's theory of the rate of profit, as in the New Interpretation, the labour theory of value is indeed 'redundant', as Steedman argued.

In a separate paper, Roberts has responded to Steedman's 'redundancy' critique by arguing that Marx's labour theory of value has a *different purpose* (different from the quantitative determination of prices and the rate of profit) – a more qualitative purpose: to analyse class relations in terms of the production, appropriation, and distribution of the surplus product.[15] With respect to this different purpose, Roberts argues, the labour theory of value is not redundant, but is instead essential. However, this is a very weak defence because Roberts continues to accept the Sraffian theory of the rate of profit and prices of production, which does not depend on the labour theory of value. If the labour theory of value and surplus-value play no role in the determination of the rate of profit, this would seem to cast doubt on the validity of Marx's qualitative theory of class relations. It would be like a Newtonian physicist explaining acceleration in a way that has nothing to do with force.

2.4   *Sequential vs. Simultaneous Determination*

Another important difference between our interpretations, which is related to all the above differences, is whether Marx's theory is based on the method of sequential determination or simultaneous determination. I have argued in this book that Marx's theory is based on the method of sequential determination, in two senses: the total surplus-value is determined prior to the determination of the rate of profit and prices of production, and constant capital and variable capital are taken as given in the determination of value and surplus-value and prices of production. The circuit of money capital, which is a real process in real historical time, can only be theorised with sequential determination.

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14   Wolff, Roberts, Callari 1982, p. 570.

15   Roberts 1987.

WRC, on the other hand, argue that Marx's theory is based on the method of simultaneous determination, similar to Sraffian theory and the Sraffian interpretation of Marx's theory. The rate of profit and the prices of both inputs and outputs are all determined simultaneously. I have argued repeatedly in previous chapters that the method of simultaneous determination cannot be applied to Marx's theory. The circuit of money capital and the prior determination of the total surplus-value cannot be theorised with the method of simultaneous determination.

Furthermore, the method of simultaneous determination contradicts the method of 'class analysis' emphasised by WRC themselves (Section 1.3 above). According to their interpretation of class analysis, Marx's theory begins with the total class relation between capitalists and workers and the determination of the total surplus-value produced by the working class as a whole, and then proceeds to the intra-class distribution of this total surplus-value among individual capitalists. The intra-class distribution of the total surplus-value happens by means of the general rate of profit and prices of production. Therefore, one would expect WRC, on the basis of the 'primacy of class', to deduce the rate of profit in the intra-class theory of the distribution of surplus-value from the total surplus-value determined by the prior inter-class theory of the production of surplus-value. However, this is not the case; the total surplus-value determined in the class theory of the production of surplus-value *plays no role* in the determination of the intra-class theory of the rate of profit and the distribution of surplus-value. There is no 'necessary prior step' that determines the total surplus-value prior to its distribution. Instead, Marx's primacy of class is abandoned and replaced with Sraffa's method of simultaneous determination.

Simultaneous determination also contradicts 'circulation as a precondition for production', which WRC have also emphasised. As discussed above, 'circulation as a precondition for production' suggests that the quantities of money capital advanced in circulation to purchase means of production and labour power are presuppositions in the theory of production (the production of value and surplus-value). But according to the simultaneous determination of input prices and output prices, *there are no presuppositions coming from circulation* in the theory of relative prices and the rate of profit. It is as if the inputs enter capitalist production as mere physical quantities, without previously existing prices from circulation.

Roberts has asserted that simultaneous determination is 'consistent with Marx's theory'.[16] He doesn't support this assertion with any explanation, and in

16   Roberts 2005, p. 143.

particular he does not explain how simultaneous determination is consistent with the primacy of class. His argument is instead a critique of the alternative – sequential (or temporal) determination. He assumes that sequential determination implies that input prices are not equal to output prices, and thus that the economy is in a state of *disequilibrium*. And he argues that Marx's prices of production are clearly long-run 'centre-of-gravity' prices, and thus that sequential determination is a clear misinterpretation of Marx's theory ('misspecifies the problem').

However, I argue that my interpretation of sequential determination does *not* assume disequilibrium and instead assumes that the economy is in a state of long-run equilibrium, and that this is the reason why input prices are equal to output prices: not because input prices are determined simultaneously with output prices, but because the economy is in long-run equilibrium. I agree entirely that Marx's prices of production are long-run equilibrium prices (see Chapters 9 and 11). Therefore, Roberts's criticism does not apply to my interpretation of the sequential determination of long-run equilibrium prices. And he still needs to explain how simultaneous determination is consistent with the primacy of class, and also with the circuit of money capital.

On the other hand, this criticism does apply to the 'temporal single system interpretation' (TSSI) of Marx's theory presented by Kliman and McGlone, which is based on 'temporal determination', and was discussed in Chapter 9. In the TSSI, prices of production are *not* long-run centre-of-gravity prices, and thus input prices are not equal to output prices.

3   Formal Model

The similarities and differences between my interpretation and WRC's interpretation discussed above can be clarified by an examination of their formal model, which consists of the following three equations:[17]

(2) $p = (pA + pbL)(1 + r)$

(3) $V = pA + L$

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17   I number these equations (2)–(4) in order to be consistent with the numbers in their 1982 and 1984 articles. Equation (1) in their articles is the Sraffian equation for numeraire prices: $P_j = p_j / p_k$, where the kth commodity is the numeraire.

(4) $r = (Lx - pbLx) / (pAx + pbLx)$

p   price of production (defined in units of labour time)
A   input-output coefficient matrix
b   real wage bundle
L   labour input coefficient vector
r   rate of profit
V   value (defined in units of labour time)
X   output vector

First, we can see the *similarities* in our interpretations discussed above:

1. Constant capital is the same in all the equations (pA or pAx), and variable capital is the same in equations (2) and (4) (pbL or pbLx).
2. The first component of the *value* of commodities in equation (3) is equal to the *price of production* of the means of production, not their values (pA, not VA).
3. Both total surplus-value and total profit are defined by the numerator of the right-hand side of equation (4), as the difference between value added (new value) and the *price of production* of the means of subsistence (Lx – pbLx). Surplus-value is not defined as the difference between value added and the *value* of the means of subsistence, as in the standard interpretation. Therefore, total profit is always by definition equal to total surplus-value, as in my interpretation.

We can also see the *differences* in our interpretations discussed above:

1. All the key variables are defined in units of labour time; money is entirely missing from these equations.
2. Constant capital and variable capital are derived from given physical quantities (A and b), rather than taken as given as quantities of money capital.
3. The rate of profit is determined simultaneously with the relative prices of the inputs and the outputs by equation (2) alone. *Equations (3) and (4) play no role in the determination of the rate of profit*. Equation (4) looks like it determines the rate of profit, but it is only a definition of the rate of profit, and the numerator is only a normalisation condition (total profit = total surplus-value) that affects the absolute price level, but does not affect the rate of profit (similar again to the New Interpretation). The normalisation condition guarantees that total profit = total surplus-value, but total profit and total surplus-value play no role in the determination of the rate of

profit. The determination of the rate of profit is by equation (2) alone and is completely independent of the 'class analysis' of surplus-value in Volume I.

Equation (3) for values also plays no role in the determination of the rate of profit and either relative or absolute prices. Relative prices and the rate of profit are determined by equation (2), and equation (4) determines the absolute price level, and pA is then substituted into equation (3) in order to determine values. Values do not appear in equations (2) and (4). Values are used for the purpose of comparing total values and total prices of production, and that is all. Values determined in this way are indeed 'useless' in the determination of the rate of profit and prices of production. This 'uselessness' of value and surplus-value in the WRC interpretation is clear from these equations.

In his 2005 paper, Roberts asserts that this Sraffian theory of the rate of profit is 'consistent with Marx's intent', but no further explanation is given.[18] It is hard to see how the loss of the logical connection between Marx's theory of value and surplus-value and the determination of the rate of profit can be considered 'consistent with Marx's intent'.

In their 1982 HOPE paper, WRC acknowledge that the rate of profit and prices of production determined by their equations are '*identical* to the Sraffian physical quantities model'.[19] The reason their solution is identical to the Sraffian model is that their interpretation of Marx's theory is the same as the Sraffian physical quantities model (i.e., linear production theory). WRC argue nonetheless that the Sraffian approach is 'quite different' from their approach, because the Sraffian approach 'makes no use of value or value form as labour time magnitudes'. WRC also argue that Marx's focus on *class* relations as the object of his discourse requires him to constantly link a physical surplus to surplus labour, which produces surplus-value.

However, we have seen that, in the end, the WRC determination of the rate of profit in equation (2) also 'makes no use' of Marx's theory of value and surplus-value; instead the rate of profit is determined solely by the Sraffian physical conditions of production and the real wage. There is no logical connection in the WRC interpretation between surplus labour and the rate of profit, because Marx's class theory of surplus-value has been abandoned in the determination of the rate of profit.

WRC also argue that another difference between their interpretation and Sraffian theory is that in their interpretation the rate of profit is '*expressed*' as

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18   Roberts 2005, p. 143.
19   Wolff, Roberts, Callari 1982, p. 579.

a ratio of aggregate magnitudes in equation (4) 'just as Marx insisted that it should be understood'. Notice that WRC do not state that the rate of profit is *determined* by this aggregate ratio (as Marx assumed), because that would be a mistake. The rate of profit in their interpretation is not determined by equation (4), but is instead determined by equation (2). Equation (4) only normalises the absolute level of prices.

WRC also argue that another difference between their interpretation and Sraffian theory is that, according to Sraffian theory, with the real wage taken as given, the rate of profit does not depend on the conditions of production in the non-basic goods industries, whereas Marx's theory concludes that the composition of capital in *all* industries affects the rate of profit. WRC argue that in their interpretation non-basic goods industries are 'indeed relevant to equation (4) which expresses the rate of profit as a ratio of aggregate labour time magnitudes', implying that this is similar to Marx's conclusion. However, notice again that WRC do not state that the aggregate labour time ratio is relevant to equation (2), because that would also be a mistake. Even if non-basic industries are relevant to equation (4), they are not relevant to the determination of the rate of profit, which is determined entirely by equation (2). Because WRC also take the real wage as given in equation (2), they come to the *same conclusion* as Sraffian theory with respect to non-basic industries and the determination of the rate of profit – contrary to Marx's conclusion.

4 WRC's Critique of My Interpretation

In their 1998 paper, WRC briefly criticise my interpretation of Marx's theory.[20] There are four criticisms: (1) the idea that Volume I is *only* about aggregate quantities (and not also about the prices of individual commodities) is 'unsupportable'; (2) the total surplus-value and rate of profit are *not* determined prior to prices of production by taking money quantities as given; (3) taking constant capital and variable capital as given precludes the *interdependency* between value and value form; and (4) my hostility to linear algebra and my 'purist reading' of Marx hinders the further development of Marx's value theory.

My responses to these criticisms are the following: (1) I do not argue that there is no reference to the values of individual commodities in Volume I. Rather, I argue that individual commodities are considered as typical representatives of the total commodity product and the values of individual commod-

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20   Callari, Roberts, and Wolff 1998, p. 52.

ities are considered only as individual parts of the total value of all the commodities produced in the economy as a whole and. Most importantly, I argue that Volume I does not assume that individual commodities exchange at their values; instead the exchanges of individual commodities are *abstracted from* altogether. As discussed above, WRC argue that Volume I *does* assume that individual commodities exchange at their values, and thus they interpret Volume I to be about *hypothetical* exchanges in a *hypothetical* economy (similar to the standard interpretation). According to their interpretation, *none* of the hypothetical quantities determined in Volume I are carried over to Volume III, so that the hypothetical quantities in Volume I play no role in the determination of the general rate of profit and prices of production in Volume III. I argue, to the contrary, that Volume I is about the *actual* capitalist economy, theorised first at the marco level, and the macro quantities that are determined in Volume I are carried over to the micro theory of Volume III and play an essential role in the determination of the general rate of profit and prices of production in Volume III.

(2) I am surprised by this criticism, because it explicitly rejects the prior determination of the total surplus-value, which I thought WRC at least tried to maintain in their 'class' theory of the total surplus-value. But this criticism is consistent with their interpretation of the rate of profit and simultaneous determination. In any case, this point has already been discussed extensively above, and need not be repeated here. I agree that the total surplus-value is not explained *solely* by 'taking money quantities as given'. In addition to the money quantities of constant capital and variable capital, Marx's theory of the total surplus-value also takes as given the total quantity of current socially-necessary labour time (L) and the MELT, as discussed in Chapter 2. The crucial variable is the quantity of current socially-necessary labour time, a part of which is surplus labour, which produces the total surplus-value (ΔM).

(3) Taking constant capital and variable capital as given does *not* preclude the interdependence of value and value form; indeed, there is *more interdependence* between value and value form in my interpretation than in WRC's interpretation. In my interpretation, money constant capital (value form) is a constituent of the *value* of commodities, and money variable capital (value form) is a determinant of the *surplus-value* of commodities, similar to their interpretation (except that I define constant capital and variable capital as quantities of money rather than as quantities of labour time). In addition, in my interpretation, *value and surplus-value in turn determine the rate of profit*, which is a determinant of prices of production (value form). However, in their interpretation, as we have seen above, value and surplus-value do *not* determine the rate of profit, and thus prices of production are determined *independently*

of value and surplus-value. The relation between value and value form in their interpretation goes in only one direction, from value form to value; but in my interpretation this relation goes in both directions, which is true interdependence.

(4) My 'hostility toward linear algebra' (I would say my scholarly criticism of the linear algebra interpretation of Marx's theory) derives from my conviction that Marx's theory is not compatible with the method of linear production theory and simultaneous determination, for the substantial reasons discussed throughout this book: in Marx's theory, the total surplus-value and the rate of profit are determined prior to prices of production, not simultaneously with prices of production; and the logical framework of Marx's theory is the circuit of money capital, which is a real process in real historical time, and which requires sequential determination.

Is this a 'purist reading' of Marx? What is meant by a 'purist reading'? I am trying as best I can to understand Marx's theory as he intended it – and especially the logical method Marx used to construct his theory – in order to be able to more fairly and appropriately evaluate the logical consistency of Marx's theory. The conventional wisdom for a century has been that Marx's theory is *logically inconsistent*, and in particular that Marx's theory of prices of production is logically inconsistent with his theory of value and surplus-value. On the basis of years of careful study and closer examination, I have concluded that this conventional wisdom is mistaken; or at least that there is another possible way to interpret Marx's logical method, with substantial theoretical and textual support, in which Marx's theory of prices of production is *logically consistent* with his theory of value and surplus-value. The WRC interpretation, on the other hand, with its non-'purist' reading of Marx's theory, eliminates the alleged logical inconsistency by abandoning Marx's theory of value and surplus-value in favour of the Sraffian theory of the rate of profit and prices of production! This does not seem to be a promising way to 'further develop Marx's value theory'.

5   Conclusion

WRC's interpretation is another important contribution to Marxian scholarship. Its main contributions are: (1) it is emphasised that Marx's method of class analysis requires that the production of surplus-value by the working class as a whole for the capitalist class as a whole should be theorised prior to its distribution among individual capitalists ('class as entry point'); and (2) it is emphasised that 'circulation is a precondition for capitalist production' and

that the inputs to capitalist production are purchased in circulation at prices of production, which remain invariant in the transformation of values into prices of production (hence a century of criticism that Marx 'failed to transform the inputs' has been mistaken).

However, these valuable contributions are offset and contradicted by WRC's acceptance of a Sraffian physical quantities interpretation of Marx's theory and the simultaneous determination of the rate of profit and prices of production, which has no connection with Marx's theory of value and surplus-value and the rate of profit. The Sraffian theory of simultaneous determination of the rate of profit and prices of production contradicts 'class as entry point' (i.e., the prior determination of the total surplus-value) and also contradicts the argument that 'circulation is a precondition for capitalist production'.

I have argued throughout this book that the method of simultaneous determination is incompatible with Marx's theory of the circuit of money capital and the prior determination of the total surplus-value, and that the simultaneous determination interpretation of Marx's theory inevitably leads to the conclusion that Marx's theory is redundant and useless in the determination of the rate of profit. WRC are trying to 'reconcile the irreconcilable'. They do indeed have a 'dilemma of discourse'. I suggest that they resolve this dilemma by rejecting Sraffian theory and sticking to the Marxian principles of the 'primacy of class' and 'circulation is a precondition to production'. Neither the total surplus-value (produced by surplus labour) nor the prices of the inputs in circulation are preconditions in Sraffian theory, but are instead determined simultaneously with the prices of the outputs. The preconditions in Sraffian theory are the physical quantities of inputs and outputs; this ignores the purchase of inputs in the sphere of circulation.

In addition, money is entirely absent in their interpretation, and thus so is ∆M, the most important phenomenon of capitalist economies and the main variable that Marx's theory is intended to explain. In a more recent paper, David Kristjanson-Gural has attempted to incorporate money into the WRC interpretation, and this attempt is discussed in the Appendix to this chapter.

Appendix. Kristjanson-Gural's Extension of the WRC Model to Include Money

In a more recent paper, David Kristjanson-Gural has added money to WRC's labour time interpretation of Marx's theory, by introducing a new interpretation of the MELT and using this MELT to convert labour time quantities in

WRC's equations into money price quantities.[21] In Kristjanson-Gural's model, WRC's three basic equations remain essentially the same as above, with all the variables defined in units of labour time (Kristjanson-Gural's equations (4)–(6) correspond to WRC's equations (2)–(4), discussed above). The main difference is that gold as the money commodity is explicitly added to the n industries. Another minor difference is that Kristjanson-Gural's normalisation equation is the same as Duménil's normalisation in terms of the labour value of the net product (py = lx), rather than the WRC normalisation (total profit = total surplus-value). There is no MELT in these basic equations.

The solution to these equations is arrived at in the same way as before: the rate of profit and relative prices are determined by a Sraffian-type equation representing the physical conditions of production (Kristjanson-Gural's equation (5); WRC's equation (2)), and the normalisation equation determines the absolute price level (Kristjanson-Gural's equation (6); WRC's equation (4)). The solution now includes the *direct price of gold* and the *price of production of gold*, both of which are defined in units of labour time.

The price of production of gold is then used to determine the MELT, by dividing the currency price of gold by the price of production of gold (equation (7)).[22] And then the MELT determined in this way is used to convert both the direct prices and the prices of production of all the other commodities from units of labour time into units of currency, by multiplying the MELT by these labour time direct prices and prices of production (equations (8)–(9)).

Kristjanson-Gural's extension with money is an improvement over the original WRC model with only labour time variables. However, as in the original WRC model, the determination of the rate of profit in Kristjanson-Gural's extended model still does not depend in any way on Marx's labour theory of value and surplus-value. The total surplus-value still plays no role in the determination of the rate of profit, as before. Instead, the rate of profit continues to be determined by the Sraffian-type equation based on physical quantities. Therefore, adding money to WRC's labour time interpretation in this way does not add much. Money is an after-thought, rather than the central focus of the theory (ΔM), and this treatment of money does not solve the fundamental disconnect between Marx's theory of value and surplus-value and the determination of the rate of profit and prices of production.

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21   Kristjanson-Gural 2008.

22   The currency price of gold is an extraneous element, which depends on an arbitrary government official exchange rate. The basic issue here is the determination of the MELT with prices of production in terms of gold. In such a formulation, Kristjanson-Gural's MELT would be equal to 1/(price of production of gold).

Furthermore, I have argued in Moseley 2005 (and in Chapter 5 above) that the 'direct price of gold' and the 'price of production of gold' have no meaning in Marx's theory, because the *price* of a commodity in Marx's theory is a *quantity of gold* that is equivalent in value to a given commodity, and *gold cannot be its own equivalent value*.[23] The equivalence of gold with other commodities cannot be expressed in terms of itself. As Marx put it: 'money has no price'.[24] Therefore, neither the 'direct price of gold' nor the 'price of production of gold' exists in Marx's theory.

As discussed in Moseley 2005 (and in Chapter 5), since gold has neither a direct price nor a price of production, the rate of profit in the gold industry cannot be equalised by a *divergence* of the 'price of production of gold' from the 'direct price of gold'. There is equalisation of the profit rate in the gold industry, but this equalisation cannot happen in the usual way (divergence of price of production from direct price). Rather, this equalisation happens by means of the opening and closing of marginal mines, which changes the amount of surplus-value produced in the gold industry. The surplus-value produced in the gold industry cannot be shared with other industries as a means to equalise the rate of profit, because the surplus-value in the gold industry is a *definite quantity of gold*, and the profit received in the gold industry is always equal to this same definite quantity of gold. Therefore, Kristjanson-Gural's addition of money to WRC's labour time interpretation is flawed in this respect as well. Kristjanson-Gural cites my 2005 paper, and I made the arguments just presented in that paper, but he does not respond to these points.

Finally, Kristjanson-Gural argues that Marxists have not yet explained how the MELT is determined after values are transformed into prices of production. I think I have provided an explanation of the determination of the MELT with prices of production in Chapter 5 above. I argue that the magnitude of the MELT is *not affected* by the transformation of values into prices of production. With commodity money (the assumption in Kristjanson-Gural's paper), the MELT continues to be determined by the inverse of the labour time required to produce a unit of gold. The MELT has to do with the *production* of surplus-value, and is not affected by the *distribution* of surplus-value. Indeed, there is no redistribution of surplus-value in and out of the gold industry at all, because surplus-value in the gold industry is a definite quantity of gold which cannot be transferred to other industries through the price mechanism.

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23   Moseley 2005.
24   Marx 1977a, p. 189.

The Organic Composition of Capital Interpretation

Another non-standard interpretation of Marx's theory of the transformation problem has been presented in recent decades by Ben Fine and taken up by Alfredo Saad-Filho, and is also presented in their joint textbook.[1] For brevity, I will refer by abbreviation to their interpretation as the FSF interpretation (with apologies). This FSF interpretation emphasises the role of the *organic composition of capital* in the transformation procedure. It is argued that Marx's use of the organic composition of capital (OCC) in Part 2 of Volume III indicates that the inputs of constant capital and variable capital are *not supposed to be transformed* from values to prices of production, but instead are supposed to remain equal to the values of the inputs. This interpretation of the inputs of constant capital and variable capital in turn implies that prices of production are not long-run equilibrium prices.

I agree that Marx presented his theory of prices of production in Part 2 of Volume III in terms of the OCC, and I think FSF's emphasis on this point is an important contribution. However, I disagree in part with FSF's interpretation of the OCC, and I don't agree that Marx's use of the OCC indicates that constant capital and variable capital are supposed to remain equal to values, nor that prices of production are disequilibrium prices. These are the issues with which this chapter is concerned: What exactly is Marx's definition of the OCC? What role does the OCC play in Marx's theory of prices of production? And are Marx's prices of production long-run equilibrium prices or not? After my discussion of the FSF interpretation, I will also consider their criticisms of the New Interpretation and also their brief criticisms of my interpretation.

1 Prices of Production as Disequilibrium Prices

The FSF interpretation accepts the standard criticism of Marx's theory of prices of production to the extent that, *if* Marx's goal was to explain prices of production as long-run equilibrium prices (we will see below that they deny this 'if'), then he failed to achieve this goal, because he did not transform the inputs of constant capital and variable capital from values to prices of production. They

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1 Fine 1983; Saad-Filho 1993, 1997, and 2002; Fine and Saad-Filho 2004.

also accept that Marx's mistake can be 'corrected', with a modern version of the 'Bortkiewicz solution' (i.e., a Sraffian-type system of equations based on physical input-output coefficients), in which the prices of production of both inputs and outputs are determined simultaneously, and also determined simultaneously with the rate of profit, and all these variables derived from given physical conditions of production.[2]

However, FSF also argue that this criticism 'misses the point', because the goal of Marx's theory of prices of production was *not* to explain long-run equilibrium prices, but was instead to explain how the total surplus-value is distributed by means of prices of production deviating from values, with the prices of the inputs intentionally held constant.[3] FSF argue that Marx's prices of production are *disequilibrium prices*, in which the profit component deviates from the surplus-value produced, but the constant capital and variable capital components remain the same. They argue that the simultaneous transformation of input prices would 'obscure' the distribution of surplus-value, and therefore Marx left the input prices of constant capital and variable capital untransformed. But that is not a problem, according to FSF, because Marx's goal was not to explain long-run equilibrium prices, but rather to explain the distribution of surplus-value as clearly as possible.

I strongly disagree with the FSF interpretation that Marx's prices of production are not long-run equilibrium prices. I have already presented in Chapter 9 (on the TSSI) substantial textual evidence to support the interpretation that Marx's prices of production are long-run centre-of-gravity prices that change only if productivity or the real wage changes. This section will present additional textual evidence to support this interpretation of Marx's prices of production as long-run centre-of-gravity prices, including that Marx regarded his prices of production to be essentially the same concept as Smith's and Ricardo's 'natural prices', which were clearly long-run equilibrium prices.[4]

In the *Manuscript of 1861–63*, in which Marx developed his theory of prices of production for the first time (which he called 'average prices' or 'cost prices' in this manuscript), he discussed Smith's and Ricardo's theory at length (Chapter 10 of *Theories of Surplus-Value*), and agreed with Smith's and Ricardo's assumption of the equalisation of profit rates across industries and with their focus on 'natural prices' as long-run centre-of-gravity prices as the subject of his theory. The entire discussion of Smith's and Ricardo's theories of natural

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2 Fine and Saad-Filho 2004, pp. 130–1.

3 Fine and Saad-Filho 2004: pp. 131–4.

4 See Moseley 1999 for further discussion of this issue and further textual evidence.

price in this chapter is in terms of Marx's own concepts of average price or cost price (e.g., the title of the chapter). Throughout this chapter, Marx switched back and forth between his critical discussion of Smith and Ricardo theories and the development of his own theory, using the same concepts of average price or cost price for both purposes. Nowhere did Marx state or even hint that what Smith and Ricardo meant by 'natural prices' was somehow different from what he meant by average prices or cost prices. All these concepts mean the same thing: long-run center-of-gravity prices that equalise the rate of profit. Indeed, in a number of places, Marx explicitly used the terms 'cost price or natural price' synonymously.[5] For example:

> As a result of this variation [of values], NEW COST PRICES or, as Ricardo says, following Smith, 'NEW NATURAL PRICES' take place of the old.[6]

In general, Marx's main criticism of Ricardo and Smith in this chapter is that they *did not explain* how the 'natural prices' of commodities are determined. Most importantly, that they did not explain how the general rate of profit (the key determinant of cost prices) is itself determined. They simply took this general rate of profit as given, without an explanation, and argued that all individual rates of profit would tend to equal this general rate of profit. Marx's criticism of Smith and Ricardo in this chapter was *not* that rates of profit rate are not equalised or that 'cost prices' should not be defined as long-run, profit rate equalising, centre-of-gravity prices, but should instead be defined as short-run market prices or some other prices. Smith and Ricardo's shortcoming, according to Marx, was that they did *not explain* the determination of these long-run centre-of-gravity prices, not that they should have instead explained some other disequilibrium prices. Marx's decisive advantage over Smith and Ricardo is that he was able to provide a theory of the determination of the general rate of profit and long-run centre-of-gravity prices, and they were not able to do so.

During the time that Marx was working on this chapter in the *Manuscript of 1861–63*, he wrote a letter to Engels (August 2, 1862, discussed in Chapters 3 and 4 above), in which he summarised for Engels his theory of rent and, as a necessary preliminary, also his theory of cost price (price of production). This letter provides a succinct and valuable summary of the conclusions that Marx drew from his critical study of Smith's and Ricardo's theories of the cost price

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5 Marx TSV, v. II, pp. 214, 215 (twice), 217, 220 (twice), and 235.
6 Marx MECW v. 31, p. 439 [TSV, v. II, p. 215].

of commodities for his own theory of cost price. Marx commented at the end of his letter that prices determined as he had explained it – i.e., prices that equalise rates of profit – are what Smith called 'natural prices' or 'cost prices'.

> The *price* so regulated = THE EXPENSES OF CAPITAL + THE AVERAGE PROFIT (F.I. 10 p.c.) is what Smith called the *NATURAL PRICE*, *COST PRICE*, etc. It is THE *AVERAGE PRICE* to which competition between DIFFERENT TRADES (by TRANSFER OF CAPITAL or WITHDRAWAL OF CAPITAL) reduces the prices in DIFFERENT TRADES. Hence, competition reduces commodities *not* to their *value*, but to the *cost price*, which, depending on the organic composition of the respective capitals, is either *above*, *below* or *equal* to their *values*.[7]

The next manuscript in which there is an extensive discussion of Marx's theory of prices of production is the *Manuscript of 1864–65*, which as we have seen contains the first and only full draft of Volume III of *Capital*. In general, there are no major changes in Marx's theory of prices of production in this manuscript compared to the earlier *Manuscript of 1861–63*. Marx never mentions that there has been a change in this theory; instead he continues to develop his theory along the same lines already sketched in the earlier manuscript: to explain the average prices that equalise the rate of profit as the long-run centre-of-gravity around which market prices fluctuate The main change is a purely terminological one: the long-run centre-of-gravity prices are now called 'prices of production', instead of 'cost prices'.

Marx also repeated at the end of Chapter 10 of Volume III an explicit statement that his concept of price of production 'is the same thing' as Smith's and Ricardo's concept of natural price, and also repeated his criticism that they were not able to explain the difference between price of production and value.

> The price of production includes the average profit. ***And what we call price of production is in fact the same thing that Adam Smith calls 'natural price'***, Ricardo 'price of production' or 'cost or production', and the Physiocrats *'prix necessaire'*, though none of these people explained the difference between price of production and value.[8]

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7 Marx MECW, v. 41, p. 396.

8 Marx 1981, p. 300.

Therefore, I think it has to be concluded that Marx's prices of production are long-run centre-of-gravity prices (i.e., classical long-run equilibrium prices), contrary to FSF's interpretation of prices of production as disequilibrium prices.[9]

2   Organic Composition of Capital

The main argument presented by FSF to support their interpretation (that input prices are supposed to remain equal to values and are not supposed to be transformed into prices of production) is that Marx's discussion of the transformation is in terms of the *organic composition of capital*, rather than the value composition of capital, and the organic composition of capital is defined in such a way as to *not take into account* differences in input prices across industries that are due to any other reason besides differences in the *physical quantities* of means of production and labour in different industries. Specifically, the organic composition of capital does not take into consideration differences in the *values of the means of production*, from which they infer that the OCC does not take into account the transformation of input prices from values to prices of production. Therefore, according to this interpretation, Marx's use of the organic composition of capital in his discussion of the transformation in Part 2 of Volume III indicates that he was not taking into account the transformation of the values of inputs into their prices of production.

I will first discuss my interpretation of the organic composition of capital and then discuss the FSF interpretation. The textual evidence to support my interpretation of the OCC will be presented later in this chapter. As is well known, the *technical composition of capital* (TCC) is a ratio in *physical* terms: the ratio of the quantity of means of production to the quantity of living labour in the production process (MP / L). I argue that the *value composition of capital* (VCC) is a ratio in *money* terms: the ratio of money constant capital to money variable capital (C / V). I have argued throughout this book that constant capital and variable capital are quantities of *capital*, and capital is defined in terms of *money* (as money advanced to make more money). Constant capital and

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9   Alan Freeman 1995 has also argued that Marx's theory is about disequilibrium market prices, rather than equilibrium prices of production. He does not discuss all the textual evidence to the contrary presented in this section and in Chapter 9. He presents only one passage to support his interpretation, and this passage is from *The Poverty of Philosophy*, which was an early work written in 1847 and implies nothing about Marx's theory of prices of production developed in the 1860s. See Moseley 1999 for a further critique of Freeman's interpretation.

variable capital are the two components of the initial money capital M that are advanced at the beginning of the circuit of money capital to purchase the means of production and labour power. Therefore, constant capital and variable capital in the VCC refer to these quantities of money capital advanced, and hence are defined in units of money.

I argue further that the *organic composition of capital* (OCC) is defined as the VCC with the *additional stipulation* that the variable capital in the denominator serves as an *index of the number of workers employed*. Using variable capital as an index for labour employed means that Marx is assuming that the wage rate is the same in all industries, so that a greater (or lesser) amount of variable capital indicates unambiguously a greater (or lesser) amount of current labour employed. Thus, in effect, the OCC is defined as the ratio of quantity of money constant capital invested to the quantity of current labour employed (C / L). The numerator in the OCC is the same as the numerator in the VCC – the actual money constant capital.

The purpose of assuming an equal wage rate across industries and using variable capital as an index for the quantity of labour employed is to distinguish between *two possible causes of unequal quantities of variable capital* across industries, which have *opposite effects* on the quantity of surplus-value produced in each industry and thus on the determination of the general rate of profit and prices of production. A greater quantity of *labour* in some industries compared to other industries results in a *greater* quantity of surplus-value produced in the first industries; whereas relatively higher *wage rates* in some industries results in a *smaller* quantity of surplus-value produced in those industries. Therefore, these two causes of differences in the quantities of variable capital across industries must be kept separate, and a way to keep them separate is to assume equal wage rates across industries, so that a difference in variable capital will always mean a difference in the labour employed.

On the other hand, constant capital is different from variable capital in this respect. Quantities of constant capital also may be different across industries for two similar reasons: either unequal *quantities* of means of production or unequal *prices* of the means of production. However, neither of these causes has an effect on the quantity of surplus-value produced, and *both* of these causes have the *same effect* on the rate of profit in different industries. A relatively higher constant capital in some industries results in a lower value rate of profit in those industries, whether the cause of the higher constant capital is a greater quantity of means of production or higher prices of the means of production. Therefore, there is no reason to keep these two causes of changes in constant capital separate, and constant capital in the numerator of the OCC is *not* an index of the quantity of means of production, but is instead the actual money

capital advanced to purchase means of production, that can be different for *both* of these reasons. Textual evidence to support this interpretation will be presented below.

FSF present a different definition of the OCC; they define the OCC as the TCC *assessed in terms of values* (by which they mean labour values).[10] More specifically, FSF define the OCC as the ratio of the *labour value* of the means of production to the quantity of living labour employed (VMP / L). Thus, the denominator of their OCC (L) is the same as in my OCC. However, the numerator of their OCC is different from mine. In the first place, they interpret the value of the means of production as the *labour time* required to produce the means of production, instead of the *money constant capital* advanced to purchase the means of production. Furthermore, even though the means of production are assessed in terms of values, it is not supposed to take into account *differences in the values* of the means of production across industries. If two industries have equal TCCs, then they will have the same OCCs, no matter what the values of the means of production might be. They argue that differences in the values of the means of production are taken into account in the VCC, but not in the OCC. These definitions are interpreted to imply that, since the transformation is presented in terms of the OCC, input prices are not supposed to be transformed, but should remain equal to their values.

2.1   *Logical Contradiction*

The FSF interpretation of the OCC raises the following logical problem: if two industries have the same TCC, but different VCCs, because of different values of the means of production, then how should be the OCC in these two industries be measured? According to the FSF interpretation, the OCCs in the two industries should be the same, because the TCCs are the same. However, the OCCs are physical quantities measured in terms of the *values* of the means of production, and the values of the inputs are *different* in the two industries. So *which values* (i.e., the values of the means of production in *which* of these two industries) should serve as the unit for measuring both of their OCCs, so that the OCCs will be equal?

Saad-Filho raises this question, but he does not provide a satisfactory answer.[11] He suggests that this problem can be solved by redefining the constant capital in the numerator of the OCC and variable capital in the denominator in

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10   Fine 1983, p. 521; Saad-Filho 1993, p. 131; 1997, pp. 118–20, and 2002, p. 73; Fine and Saad-Filho 2004, pp. 104–8.

11   Saad-Filho 1997, pp. 119–20; Saad-Filho 2002, pp. 104–5.

terms of *percentages of the total capital* (the sum of constant capital and variable capital), rather than their absolute magnitudes (e.g., the 'adjusted constant capital' in industry i is $C_i / (C_i + V_i)$).[12]

But this 'adjusted constant capital' does not solve the problem. If the original ratios of constant capital and variable capital are unequal, then dividing both the numerators and denominators in each industry by their respective total capital *does not change the ratios*; the ratios remain the same. Therefore, the problem remains: the two OCCs are defined in terms of value and should be equal, but they are unequal in terms of their own values. *Which value* should be used as the basic unit to measure both of their OCCs? Therefore, in my view, the FSF definition of the OCC is logically self-contradictory because it does not define the OCC unambiguously. The OCC cannot both be defined in terms of values and ignore differences in values.

The problem is even worse in the case of different sectors with entirely different production processes, involving different kinds of inputs. In this case, it is impossible to compare quantitatively the TCC in different industries, and thus it is impossible to determine whether the TCC in a given industry is equal to or not equal to the TCC in other industries. In this case, the statement that 'if the TCC is equal, then the OCC will be equal' is doubly incoherent.

The FSF interpretation of the concept of the OCC in the transformation problem is an extension of Fine and Harris's interpretation of the OCC in a dynamic context, premised upon technological change and related to the falling rate of profit.[13] In this dynamic context, the OCC is defined by Fine and Harris in terms of the value of the means of production as a result of a change in the technical composition of capital, but *before* the prices of the means of production adjust. The value composition of capital, on the other hand, is defined in terms of the prices of the means of production *after* their prices have adjusted to the technological change. In other words, the OCC is in terms of the 'old' price of the means of production, and the VCC is in terms of the 'new' price of the means of production. Although I disagree with this interpretation of the OCC, this definition is at least logically coherent.[14] One can define the 'old' and the 'new' prices of the means of production unambiguously. However, their related interpretation of the OCC in the static context of the transformation problem is not logically coherent, because one cannot define the OCC unambiguously.

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12   Saad-Filho 1997, pp. 122–4 and 120–31.

13   Fine and Harris 1979.

14   See Moseley 1992, pp. 5–6.

In their textbook, Fine and Saad-Filho acknowledge that only 'when production processes are ***changing*** does the distinction between the OCC and the VCC have any real significance'; which implies that, in the static case of constant technology, e.g., in the transformation problem, their distinction between the OCC and the VCC does *not* have any real significance.[15] I can only concur. However, two chapters later (Chapter 10), the transformation problem is presented in terms of their interpretation of the OCC. But since their concept of the OCC has no real significance in the static context, their interpretation of the transformation problem in terms of the OCC also has no real significance.

2.2 *Textual Evidence: The OCC in the* Manuscript of 1861–63 (*Section on Cherbuliez*)

The main textual evidence presented by Fine and Saad-Filho to support their interpretation of the OCC comes from the *Manuscript of 1861–63*, in a section toward the end of the manuscript on Cherbuliez. This section is mostly about the falling rate of profit due to changes in the OCC over time, which is not directly relevant to the static transformation problem (there is one important brief discussion of the transformation problem, discussed in Chapter 3 above). Marx gave Cherbuliez high praise for having an 'inkling' (almost alone among the classical economists; Ramsay was another exception, discussed in the previous section of this manuscript) that the distinction between constant capital and variable capital is 'decisive for the rate of profit', and in particular is decisive for the explanation of the falling rate of profit.[16] Marx also discusses at some length in this section the 'cheapening' of the elements of constant capital, which '*checks but does not cancel*' the falling rate of profit.[17] Therefore, Marx was definitely *not* holding the prices of the means of production constant in his theory of the falling rate of profit (in this manuscript at least), contrary to Fine and Harris's interpretation of the OCC in this dynamic contest discussed above. This discussion also offers important textual evidence for the 'current cost' interpretation of constant capital, as opposed to the 'historical cost' interpretation.

Another general point about this section on Cherbuliez is that Marx's definition of the OCC in this early work is generally in physical terms (quantity of means of production and quantity of labour time), not in value terms. In other words, the OCC in this early work is simply a synonym for the 'technological

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15   Fine and Saad-Filho 2004, p. 105; emphasis added.
16   Marx MECW, v. 33, p. 293 [TSV, v. III, p. 370].
17   Marx MECW, v. 33, p. 291 [TSV, v. III, p. 369].

composition' (what Marx would later call the technical composition of capital, a term that Marx had not yet used at this time). The first time that Marx mentioned the OCC in this section was in the new outline of what later became Part 2 of Volume III (that Marx broke off from the discussion of Cherbuliez to write, as discussed above in Chapter 3), which is of course about the 'transformation problem'. The OCC is a key concept in this outline:

> In the second chapter of part III, on 'Capital and Profit', where the formation of the general rate of profit is dealt with, the following must be considered:
> 1) *Different organic composition of capitals*, partly conditioned by the difference between variable and constant capital is so far as this arises from the *stage of production* – the absolute *quantitative* relations between machinery, raw materials and the quantity of labour which sets them in motion. These differences relate to the labour process ...
> 2) *Differences in the relative value of the parts* of different capitals which do not arise from their organic composition. These arise from the difference of <u>value</u> particularly of the raw materials ...
> 3) The result of those differences is *diversity of the rates of profit in different spheres* of capitalist production ...
> 4) ... *Formation of the general rate of profit.* (Competition)
> 5) *Transformation of values into prices of production.*[18]

We can see that in this early outline the OCC is defined in terms of physical quantities, and differences in the OCC are contrasted with differences in the values of the inputs, and (most importantly) Marx states that *both* of these factors affect the formation of the general rate of profit, and both factors will be taken into consideration in his theory of prices of production.

Saad-Filho also quotes excerpts from this outline, and also acknowledges that this outline is evidence that the equalisation of the profit rate involves both of these two aspects: unequal physical ratios across industries and unequal values of the means of production.[19] In discussing this outline, Saad-Filho uses 'technical composition' and 'organic composition' as synonyms, which is indeed the way Marx is using the OCC in this outline. However, this is not the usual definition of the OCC suggested by FSF, which (as we saw above) is in terms of labour values of the inputs, not the physical quantities of the inputs.

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18   Marx MECW, v. 33, p. 299 [TSV, v. I, p. 415].
19   Saad-Filho 1997, pp. 132–3.

Another similar passage is from a few pages later in this manuscript:

> The ratio between the different elements of productive capital is determined in **two ways**. First: by the **organic composition** of the productive capital. **By this we mean the technological composition** ... *Secondly, however*, if one assumes that the **organic composition** is given and likewise differences which arise from the differences in their **organic composition**, the *value ratio* can change although the **technological composition** remains the same.[20]

Saad-Filho quotes this passage to support his interpretation of the OCC, but it contradicts his usual interpretation of the OCC in terms of the *values* of the inputs.[21] Marx does not say: 'by this [the OCC] we mean the TCC assessed in value terms'. Instead he says: 'by this we mean the TCC' period, measured in physical units.

On the other hand, there is one sentence later in this section in which Marx suggests a different definition of the OCC:

> The **organic composition** can be taken to mean the following: Different ratios in which it is necessary to **expend constant capital** in the different spheres of production in order to absorb the **same amount of labour**.[22]

The difference here is that the numerator is no longer the physical quantity of the means of production, but is instead the 'constant capital expended' to purchase the means of production, which is a quantity of money capital. The denominator is still a quantity of labour. Thus the OCC is defined here in terms of the quantity of labour employed by a given quantity of money constant capital. I have argued above that this definition of the OCC is the definition adopted by Marx in his later writings.[23] Perhaps this discussion of Cherbuliez helped Marx clarify his eventual concept of the OCC.

Saad-Filho also quotes this sentence and suggests that it supports their interpretation of the OCC, in terms of the labour values of the inputs.[24] However, their interpretation presumes that the 'constant capital expended' – the

20   Marx MECW, v. 33, pp. 305–6 [TSV, v. III, pp. 382–3].
21   Saad-Filho 1993, p. 131.
22   Marx MECW, v. 33, p. 310 [TSV, v. III, p. 387].
23   Marx also defined the OCC is this way earlier in this manuscript: Marx MECW, v. 31, p. 492 and v. 32, p. 12 [TSV, v. II, pp. 276 and 376].
24   Saad-Filho 1993, p. 142, and 2002, p. 73.

numerator of the OCC – means the *labour value* of the means of production. I have argued throughout this book that constant capital is defined as a *quantity of money capital* 'expended' to purchase the means of production, as the actual money constant capital, which is equal to the *price of production* of the means of production, not equal to (nor proportional to) the labour value of the means of production. And I think it is clear that is what constant capital means in this passage: capitalists expend *money capital* to purchase means of production; they do not expend labour times to purchase means of production. Therefore, I conclude that this passage also contradicts FSF's interpretation of constant capital in the OCC.

2.3   The OCC in Parts 1 and 2 of Volume III of Capital (*Manuscript of 1864–65*)

We will see below that Saad-Filho argues that Marx divided the transformation of values into prices of production into *two stages*, and that Part 2 of Volume III is about 'stage one' of the transformation, and the OCC applies to 'stage one' and is defined as 'the TCC assessed in values', and the values of the inputs remain un-transformed in this first stage. This section will re-examine Marx's definitions of the TCC, VCC, and OCC in Chapter 8 of Volume III, the first chapter of Part 2 which is entitled 'Different Compositions of Capital', and will also examine related evidence in Part 1 of Volume III. The meaning of the OCC is somewhat complicated and is not entirely clear in the opening pages of Chapter 8, but I think its meaning becomes clearer in the pages that follow. We will see that the OCC is no longer simply a synonym for the TCC, as it was in the *Manuscript of 1861–63*.

Marx begins to present his definitions of the different aspects of the composition of capital on p. 244. The first paragraph is a brief two-sentence introduction.

> By the **composition of capital** we mean, as already stated in Volume I, the ratio between its active and its passive component, between variable and constant capital. **Two relationships** are involved here which are not of equal importance, even though they may in certain circumstances produce the same effect.[25]

The paragraphs that follow attempt to explain these 'two relationships' involved in the composition of capital (i.e., in the ratio of constant capital to variable capital).

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25   Marx 1981, p. 244.

The second paragraph presents a straightforward definition of the TCC: the physical ratio of the quantity of means of production to the quantity of labour employed.

The third paragraph is only one ambiguous sentence:

> This proportion constitutes the **technical composition** of capital, and is the actual **basis** of its **organic composition**.[26]

Unfortunately, this sentence does not explicitly define the OCC, and it is unclear what is meant by 'basis'.

The first three sentences of the fourth paragraph is the main passage quoted by Fine and Saad-Filho to support their interpretation:

> But it is possible for the proportion to be the same in different branches of industry only in so far as variable capital serves simply as an index of labour power, and constant capital as an index of the volume of means of production that labour power sets in motion. Certain operations in copper or iron, for example, may involve the same proportion between labour power and means of production. But because copper is dearer than iron, the value relationship between variable and constant capital will be different in each case, and so therefore will the **value composition** of the two capitals taken as a whole.[27]

Fine and Saad-Filho argue that these sentences provide textual support for their interpretation that the OCCs in different industries are unequal *only if* their TCCs are unequal, and the OCCs are not affected by unequal prices of the inputs. The first sentence could perhaps be interpreted in that way; however, nothing is said explicitly about the OCC in this sentence. Rather, I think this sentence means that the value ratios of constant capital to variable capital in the two industries with equal TCCs *could possibly* also be equal, but *only in so far as* both variable capital and constant capital were considered as 'indexes' of the quantity of labour employed and the quantity of means of production employed, respectively. However, Marx goes on to say in the third sentence and in the rest of the paragraph (including three sentences not quoted by FSF) that industries with equal TCCs will often have unequal VCCs, because of unequal prices of the means of production (e.g., copper and iron). Again, nothing is said

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26 Ibid.
27 Ibid.

explicitly about the OCC. So I think this paragraph provides very little textual support for Fine and Saad-Filho's interpretation of the OCC.

The next paragraph is another ambiguous one-sentence paragraph, which was added by Engels (it is not in Marx's *Manuscript of 1864–65*) and which again mentions the OCC without defining it clearly:

> The *organic* composition of capital is the name we give to its value composition, in so far as it is *determined by* its technical composition and *reflects it*.[28]

Unfortunately, the meaning of 'determined by' and 'reflects it' is left vague and imprecise in Engels' sentence.

The next paragraph is a key paragraph in my view, which I think clarifies Marx's definition of the OCC.

> The *variable capital*, therefore, is assumed to be an *index of a definite amount of labour power*, a definite number of workers or definite masses of living labour set it motion ... A difference in the magnitude of the *constant capital, on the other hand*, may well be the index of a change in the volume of the means of production set in motion by a certain quantity of labour power; though *it can also arise from a difference in the value* that the means of production set in motion in one sphere of production as compared with those in other spheres. *Here, therefore* [i.e., with respect to constant capital], *these two aspects both come into consideration*.[29]

We can see that Marx assumes in this paragraph that variable capital is an index of the amount of living labour set in motion, which means that he is assuming that the wage rate is the same in all industries, so that a greater (lesser) amount of variable capital indicates a greater (lesser) amount of living labour set in motion. However, Marx goes on to say that constant capital is *treated differently* from variable capital. Constant capital is *not just an index* of the means of production employed, but also depends on the value of the means of production in different industries. Therefore, in the determination of constant capital (the numerator in the OCC), *both* of these two factors 'come into consideration'. Unfortunately, Marx does not explicitly use the term OCC in this paragraph, but I think this paragraph implicitly gives his definition of the

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28   Marx 1981, p. 245.
29   Ibid.

OCC: the ratio of the quantity of money constant capital advanced (affected by both the quantity and the value of the means of production) to the quantity of living labour set in motion (with variable capital as an index of this quantity of labour, on the assumption that wage rates are equal across industries). Algebraically:

$$OCC = C / V^* = C / L$$

where V^* is an index for L, with the assumption that the wage rate is equal across industries. As we saw above, this is the definition of the OCC first stated by Marx in his discussion of Cherbuliez in the *Theories of Surplus-Value – money constant capital expended* in relation to *the quantity of labour employed*.

The pages that follow lend additional support to this interpretation. Marx continues to discuss variable capital as an index of the quantity of labour employed and surplus-value produced. And he does not say anything about constant capital being an index of the quantity of means of production; instead constant capital continues to be affected by 'both aspects'. On pp. 246–7, Marx contrasts two examples, which lead to 'the same result' *with respect to the rate of profit*. In the first example, the OCCs in two industries are different due to differences in their TCCs. In the second example, the OCCs are unequal, even though the TCCs are equal, because the prices of the means of production are unequal (which contradicts FSF's definition of the OCC). However, in both cases, the unequal OCCs result in unequal (value) rates of profit, and thus also affect in the same way the general rate of profit that is determined for the economy as a whole, and thus both of these factors are taken into consideration in the determination of the general rate of profit and prices of production.

> The same result follows in fact if the technical conditions in the one sphere of production are the same as in the other, but the value of the constant capital element is greater or less.[30]

And if there remains any doubt about Marx's definition of the OCC in Chapter 8, Marx makes it unmistakably clear in the first sentence of Chapter 9:

> At any one given time, the ***organic composition of capital depends on two factors***: firstly, on the technical proportion between the labour power

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30   Marx 1981, p. 247.

and the means of production applied, and secondly, on the ***price of those means of production***.[31]

This key opening sentence of Chapter 9 obviously supports my interpretation of the OCC, and contradicts FSF's interpretation.

There is also important textual evidence in Part 1 of Volume III that is related to Marx's concept of the OCC which should also be considered, even though Marx did not explicitly use the term OCC in this chapter. Chapter 3 was greatly reduced in length by Engels (with the help of Samuel Moore) (from 100 rambling pages in Marx's manuscript to much more concise and organised 20 pages). The analysis is carried out in terms of the simple equation:

$$p' = s'(v/C)$$

where p' is the rate of profit, s' is the rate of surplus-value, v is variable capital, and C is the sum of constant capital and variable capital. The main point of this analysis is that the rate of profit depends not only on the rate of surplus-value, but also on the relative proportions of constant capital and variable capital (i.e., the composition of capital). This obvious point was intended in part as a criticism of Ricardo, who tended to ignore the composition of capital and identify the rate of profit and rate of surplus-value (or the profit to wage ratio).

In the course of this analysis, Marx emphasises a crucial difference between constant capital and variable capital with respect to the *effects of changes in each on the rate of profit*. For constant capital, it is *irrelevant* whether a change of C is due to a change in the *quantity* of means of production or to a change in the *price* of the means of production; the effect of both types of changes on the rate of profit is *the same* (an inverse effect; e.g., an increase of c reduces the rate of profit). On the other hand, for variable capital, it *makes all the difference* in the world whether a change of V is due to a change in the quantity of labour or a change in the price of labour power (i.e., the wage rate), because these two types of causes have *opposite effects* on the quantity of surplus-value produced and thus on the rate of profit. An increase of v due to an increase of labour *increases* the quantity of surplus-value produced and the rate of profit; whereas an increase of v due to an increase in the wage rate has the opposite effects. For example, Marx stated:

> Here we see precisely the special ***organic relationship*** that the ***variable capital*** has with the movement of the capital as a whole and its valor-

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31   Marx 1981, p. 254.

isation, as well as its distinction from the constant capital. The constant capital, in so far as the formation of value is concerned, is important only on account of the value that it has. It is *quite immaterial* here, as far as value formation is concerned, whether a constant capital of £1,500 represents 1,500 tons of iron at £1 a ton or 500 tons at £3. The *quantity of actual material* is *completely unimportant* for the formation of value and for the rate of profit, which varies in the opposite direction to the value of the constant capital, *irrespective* of what relationship the increase or decrease in this value has to do with the *mass of material use-values* it represents.

The case of variable capital is *completely different*. What *matters above all* here is not the value that it actually has, the amount of labour objectified in it, but rather the value as a mere *index* of the total labour that it sets in motion, which is not expressed in it.[32]

This is also an interesting and indicative use of the word 'organic' in the first sentence. Variable capital has an organic relationship with the valorisation of the total capital, because it purchases labour power which is the source of surplus-value. Constant capital, on the other hand, does *not* have an organic relationship with the valorisation of capital because it is not a source of surplus-value. This sentence suggests that the term 'organic composition of capital' is intended to highlight this organic relationship between *variable capital* and valorisation, by making variable capital an index for the quantity of labour employed, which is the source of valorisation.

Marx makes this point even clearer in the following passage in his original manuscript, which was not included in Engels's Volume III:

If we consider the influence of c on the rate of profit, the reasons why c falls are *entirely irrelevant*, although differences between the causes for a fall have a very evident impact on the prices of commodities. What is of *decisive importance*, however, is whether v changes because a smaller or larger number of workers is technologically required for the production of the same value; whether, therefore, the decrease or increase in v is an *index* of the amount of labour set in motion … or v rises or falls because the *wage* rises and falls …[33]

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32   Marx 1981, p. 144.

33   Marx 2016, p. 106.

Although these passages are not explicitly in terms of the OCC, they clearly express the reason why constant capital and variable capital are treated differently in Marx's definition of the OCC – because *changes in their prices have different effects on the rate of profit.*

And in the next paragraph (after the one just quoted) Marx stated that the analysis in this chapter of the effects on the rate of profit of *changes* over time in c and v of a single capital also applies to the effects of (cross-section) *differences* between capitals in different industries in the same period of time, which 'will be utilised … in the next chapter' (i.e., in Part 2 of Volume III):

> It should finally be remarked that what we have presented here as movements of different constituents of the same capital over a period of time could just as well be presented as *differences between different capitals in various areas of investment lying alongside each other in a spatial sense* and what has been presented so far **will be utilised in this latter form in the next chapter.**[34]

Thus we can conclude from the above that, with respect to effects on the rate of profit, it is 'entirely irrelevant' whether differences in constant capital across industries are due to differences in the quantities of means of production or to differences in the prices of the means of production; but it is of 'decisive importance' whether differences in variable capital across industries are due to differences in the quantities of labour employed or to differences in the wages of labour. That is why constant capital and variable capital are treated differently in the OCC.

In the rest of Part One, Chapter 5 is about the effects on the rate of profit of 'economy in the use of constant capital' and Chapter 6 is about 'changes in the prices of raw materials'. Clearly, Marx was not holding constant capital and the price of raw materials constant in his analysis of the rate of profit; rather the opposite: he was emphasising the effects of *changes* in the price of raw materials on the rate of profit.[35] And these effects are just as important for

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34   Marx 2016, p. 143.

35   Marx also emphasised this point in his important letter of April 30, 1868 which summarised for Engels each part of Volume III (discussed above in Chapter 3). The last paragraph of his summary of Part 1 starts as follows: 'The laws thus discovered, which are very important for understanding for instance **how the price of raw materials influences the rate of profit**, hold good *no matter how* the surplus value may later be divided between the producer, etc.', Marx, MECW, v. 43, p. 23.

differences across industries as they are for changes over time. That is why such changes are taken into account in Marx's definition of the OCC.

Therefore, I conclude, contrary to Fine and Saad-Filho, that Marx's concept of the OCC does take into account differences in the prices of the means of production. Variable capital is an index for the quantity of labour employed, but constant capital is not an index for the quantity of means of production. Constant capital is the money capital advanced to purchase means of production, which is affected by 'both aspects', i.e., both by the quantity of the means of production and by the prices of the means of production, because both of these aspects have the same effect on the rate of profit. Differences in the ratio of constant capital invested to labour employed results in differences in surplus-value produced for the same amount of capital invested, which necessitates a redistribution of surplus-value in order to equalise the rate of profit. Such a redistribution of surplus-value is necessary in both cases of unequal quantities of constant capital discussed above: both unequal TCCs and unequal prices of the means of production.

And it is a good thing that Marx defined the organic composition of capital in this way, because it is a logically coherent concept, unlike Fine and Saad-Filho's incoherent interpretation of the OCC. If two industries have the same TCC, but unequal prices of the means of production, then they will have unequal and unambiguous OCCs. For a given amount of capital, the two industries will employ unequal quantities of labour, and will therefore produce unequal amounts of surplus-value. The purpose of the OCC is to highlight these differences and their different effects on the rate of profit. If there remains any doubt about which of these two interpretations of the OCC is the correct one, why not give Marx the 'benefit of the doubt', and assume that his concept of the OCC is the logically coherent one, rather than the incoherent one?

3   'Two Stage' Transformation

3.1   *Saad-Filho on Marx*

Saad-Filho acknowledges that the full transformation of values into prices of production involves not only unequal TCCs, but also the transformation of input prices.[36] But he argues that Marx decided to *divide up* these two aspects of the transformation into *two stages*, and to define the OCC and VCC accordingly. In the first stage of the transformation, the input prices are held

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36   Saad-Filho 1997, pp. 120–5, and 2002, pp. 82–7.

constant (equal to the values of the inputs) and the equalisation of the profit rate involves only the deviations of the amounts of profit received in each industry from the amounts of surplus-value produced in each industry. The OCC applies to the first stage, and is interpreted as above to mean the ratio of the values of the means of production to labour employed, with the value of the means of production un-transformed. 'Prices of production' at this first stage are *disequilibrium prices* that result from this partial equalisation of the profit rate and partial transformation of values; prices of production are not long-run equilibrium prices that would result from the full equalisation of the actual rate of profit and a full transformation of values into prices of production.

In the 'second stage' of the transformation (according to Saad-Filho), the further effects of the transformation of input prices from values to prices of production are analysed, and long-run equilibrium prices and the associated general rate of profit are determined. The VCC applies to the second stage, and is defined in terms of the prices of production of the inputs. This second stage also involves a *change in the concept of prices of production*, from disequilibrium prices (as above, with input prices equal to values) to long-run equilibrium prices (with input prices equal to prices of production). And the long-run equilibrium rate of profit in the second stage is different from the rate of profit in the first stage.

Saad-Filho acknowledges that this second stage of the transformation 'received little attention from Marx'.[37] It is argued that Part 2 of Volume III of *Capital* is almost entirely concerned with the first stage and that the presentation in Part 2 is in terms of the OCC, which indicates that this is 'stage one' of Marx's transformation, in which the input prices are not supposed to be transformed (i.e., are assumed to be equal to values), prices of production are not long-run equilibrium prices, and the rate of profit is not the long-run equilibrium rate of profit. All of Marx's tables and examples in Part 2 are interpreted to mean that input prices are equal to values and are supposed to remain as such. I have argued above this interpretation of the OCC and Marx's theory of prices of production is logically contradictory and not supported by the textual evidence. I will pass over these objections for now and consider Saad-Filho's interpretation of the 'second stage' of Marx's transformation process.

Unfortunately, this 'second stage' of the transformation also has received little attention from Saad-Filho himself. The only passage cited that has to do with this second stage is from Chapter 12 of Volume III, in which Marx states that there are 'two reasons for the divergence of prices of production from

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37   Saad-Filho 1997, p. 125, and 2002, p. 88.

values'.[38] However, Saad-Filho provides no explanation of how Marx himself derived these revised prices of production and the revised rate of profit in this second stage. And the short Chapter 12 (the last chapter of Part 2) says nothing about this kind of 'second stage', or a change in the meaning of prices of production. And yet Saad-Filho seems to imply that Marx somewhere and somehow must have completed this second step, because Saad-Filho states that 'having done this' (i.e., having completed the second stage, I presume), Marx's revised concept of price of production is the same as Smith's and Ricardo's 'natural price' (i.e., long-run equilibrium prices), and he quotes a passage from Chapter 10 of Volume III (p. 300) to that effect.[39] I have quoted this passage above to support my interpretation that Marx's prices of production are long-run centre-of-gravity prices. I think this passage clearly supports my interpretation and contradicts Saad-Filho's interpretation. Marx says nothing in this passage about two different concepts of prices of production, a disequilibrium concept with inputs = values and an equilibrium concept with inputs = prices of production. There is only one concept of prices of production, and it is the same as Smith's and Ricardo's 'natural prices' (i.e., long-run equilibrium prices), as Marx also discussed in the *Manuscript of 1861–63* (as we discussed above). This identification of Marx's prices of production with Smith's and Ricardo's natural prices comes in Chapter 10 of Volume III, which is interpreted by Saad-Filho to be about the '*first stage*' only and in which prices of production are not supposed to be long-run equilibrium prices.

3.2   *Saad-Filho's 'Second Stage'*

Furthermore, Saad-Filho's own explanation of the 'second stage' of the transformation process (i.e., of prices of production as long-run equilibrium prices) is not based on Marx's theory at all, but is instead based on Sraffian theory.[40] The rate of profit is not determined prior to prices of production, by the ratio of the total surplus-value (determined by Marx's labour theory of surplus-value) to the total capital, but is instead determined simultaneously with the prices of production of inputs and outputs. None of Marx's conclusions from the first stage are carried over to the second stage; 'stage one' is simply dropped and replaced with 'stage two'. Saad-Filho's 'second stage' is not a second stage of Marx's theory, but is instead the abandonment of Marx's theory in favour of Sraffian theory. Saad-Filho's equation for the determination of the rate of profit

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38   Marx 1981, pp. 308–9; discussed above in Chapter 4.

39   Saad-Filho 1997, pp. 126–7, and 2002, p. 89; at the end of his main paragraph about the second stage.

40   Saad-Filho 2002, pp. 87–90.

and prices of production is the same familiar Sraffian system of equations, based on physical quantities of inputs and outputs and simultaneous determination, which does not depend in any way on Marx's labour theory of value and surplus-value.[41]

FSF argue that the use of the OCC is significant, because the OCC connects the rate of profit with production, where labour creates new value and surplus value, whereas the VCC connects the rate of profit with circulation and the prices of the means of production. However, the rate of profit which the OCC links with production (according to their interpretation) is *not the actual general rate of profit*, associated with long-run equilibrium prices, but is instead a *hypothetical disequilibrium* rate of profit, in terms of hypothetical quantities of 'untransformed' constant capital and variable capital. According to FSF, the actual general rate of profit is not determined by Marx's theory of surplus-value, utilising the concept of the OCC, but is instead determined by Sraffian theory. Marx's theory of surplus-value and the OCC play no role in their interpretation of the determination of the general rate of profit.

In his book, Saad-Filho states in a parenthetical remark, in referring to the Sraffian system of equations, that '(this rate [the average rate of profit] is *limited by the total surplus-value*; see Section 4.1)'.[42] However, nothing is said in Section 4.1 ('Wage labour and exploitation') about the rate of profit, and *no logical connection* is made in this section nor anywhere else between Marx's theory of surplus-value and the rate of profit. No explanation is given as to precisely how the rate of profit is 'limited by the total surplus-value'. Perhaps Saad-Filho means that, in his Sraffian system of equations, he assumes a normalisation condition that total profit = total surplus-value, similar to the New Interpretation normalisation condition that total value added remains the same. However, as discussed in Chapter 8 (on the New Interpretation) this 'Marxian' normalisation condition does not affect the magnitude of the rate of profit, but only affects the absolute level of prices.

4   Labour Theory of Value Still Essential?

Even though FSF's interpretation of Marx's labour theory of value does not provide a quantitative theory of long-run equilibrium prices and the associated general rate of profit, FSF argue (like many other Marxists, such as Sweezy,

41   Saad-Filho 2002, p. 98; equation 8.3.
42   Saad-Filho 2002, p. 99.

Shaikh, etc.), that the labour theory of value is nonetheless essential for an adequate theory of capitalism, because the labour theory of value provides a *qualitative* understanding of capitalism – most importantly that price is a form of appearance of labour and that profit is a form of appearance of surplus labour.[43]

I think this argument is weak and unpersuasive. It is true that Marx's theory provides a superior understanding of these qualitative aspects of capitalism, but surely a satisfactory theory of capitalism should also provide an explanatory quantitative theory as well. The most important feature of capitalism is ΔM, which is, above all else, a *quantity*. The main goal of Marx's theory was to explain the actual quantity of ΔM in the real capitalist economy, and to use that quantity to determine the magnitude of the actual rate of profit and prices of production. If Marx's qualitative theory of profit is not able to provide the basis for a quantitative theory of profit and the rate of profit, then this failure would seem to cast doubt on the validity of the qualitative theory.

Similarly, FSF also argue that Marx's partial explanation of the transformation of values into prices of production (the 'first stage') 'substantiates' the labour theory of value, because it explains how surplus-value is distributed through the deviations of prices of production and profits from values and surplus-values.[44] But I don't see how a qualitative theory of capitalism can be 'substantiated' without an adequate quantitative theory of ΔM and the rate of profit and prices of production. At best, the 'substantiation' is partial and provisional, and depends ultimately on the ability of the labour theory of value to complete the 'second stage', which FSF's interpretation does not seem to be able to do. The substantiation of the labour theory of value would seem to require an explanation of the actual rate of profit. FSF's interpretation of Marx's labour theory of value does not provide such an explanation.

5   Critique of the New Interpretation

In a paper co-authored by Fine, Saad-Filho, and Costas Lapavitsas (which I will abbreviate as FLSF, again with apologies), these authors criticise the New Interpretation as a 'wrong turn' in the development of Marxian theory.[45] This section will discuss and comment on their main criticisms of the New Interpretation.

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43   Saad-Filho 1997, pp. 127–9, and 2002, pp. 90–1.

44   Saad-Filho 1997, p. 127, and 2002, p. 90.

45   Fine, Lapavitsas, and Saad-Filho 2004.

5.1 *Value of Labour Power*

One of FLSF's main criticisms of the New Interpretation (NI) is that the value of labour power is determined by dividing the money wage, which is taken as given, by the MELT, and they argue that the value of labour power and the money wage are very important variables in Marx's theory that should not be determined in such a simple way, but instead should be explained by their many complex determinants. I agree to some extent with this criticism, but I don't think that this limitation is inevitable in the NI. Instead, I think that, although the NI initially takes the money wage as given, it could be extended to also provide an explanation of the money wage, as I have done in my interpretation (although I emphasise the concept of variable capital rather than the value of labour power). The money wage is initially taken as given, because it cannot yet be fully explained, because it is equal to the prices of production of the means of subsistence, and prices of production cannot yet be explained. But after prices of production have been explained, the money wage can also be explained, as equal to the price of production of the means of subsistence. And this explanation could be further extended to include an analysis of the complex social and historical factors that determine the quantity of means of subsistence that provides the prevailing standard of living, along the lines of Fine's 1998 book.[46]

FLSF argue that the two assumptions with respect to wages – the money wage given (in the NI) or the real wage given (in the standard interpretation) – are mutually exclusive. But this is not entirely true. These two assumptions are mutually exclusive in the theory of value and surplus-value and prices of production. However, at a later stage of the theory, after prices of production have been determined, these two assumptions can be complementary. The given bundle of wage goods can be used to explain the money wage, which is taken as given in the earlier stages of the theory. Therefore, I don't think the failure to explain the money wage and the value of labour power is an inherent weakness of the NI, but one which could be overcome with this type of further development. The fact that the money wage is initially taken as given does not 'preclude' an eventual explanation of this important variable, as FLSF claim.[47]

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46   Fine 1998.

47   FLSF make a similar critique of the NI interpretation of the *value of money* as the ratio of living labour to money value added (VM = L / MVA) – that it 'precludes an explanation of the determination of the value of money' (p. 7). Again, I don't think this is necessarily true. The NI can (and should) go beyond its definition of the value of money and seek to provide an explanation of the value of money independent of MVA. Indeed Foley has attempted to do that (rather unsuccessfully so far; see 1998) and has encouraged other attempts. So

5.2   *Sequential vs. Simultaneous Determination*

In the next-to-last section of their paper, FLSF argue that the NI macro equations seem to imply that all exchanges occur simultaneously and all the variables are determined *simultaneously*.[48] They argue that this assumption is realistic for a single industry, but not for all industries together, 'since all individual cycles are necessarily *sequenced* relative to one another,' and thus all exchanges do not occur simultaneously.

I of course agree very strongly with this critique of simultaneous determination, and have presented a similar critique throughout this book. However, I have two further comments to make on this point. In the first place, I think that this critique of the NI on this issue is misplaced. The NI macro equations do not necessarily imply simultaneous exchange of all commodities, and hence do not imply simultaneous determination of all the variables. These macro equations are in terms of aggregate variables *over some period of time*, e.g., a year. The macro variables in the NI equations (e.g., value added, wages, profit) are the annual sums of these variables for all capitals in the economy as a whole, without requiring any assumption of simultaneous exchange, and allowing for the many 'sequenced' individual circuits emphasised by FLSF. In this respect, the NI macro variables are similar to the variables in mainstream macroeconomics, which also do not imply simultaneous exchange and simultaneous determination.[49]

Secondly, FLSF's critique of simultaneous determination should also be directed at themselves to some extent. As discussed above, the theory of the rate of profit and prices of production as interpreted by Saad-Filho's 'second stage' of the transformation is essentially the same as Sraffian theory, which is based on simultaneous determination and which thus assumes simultaneous exchange of all commodities.[50] Saad-Filho also discusses the 'shortcomings' of Sraffian theory (namely that it cannot grasp the specific nature of capitalist relations of production and values cannot be determined by their value system of equations), but he does not mention any shortcomings of the Sraffian price system, and in particular does not mention that simultaneous determination

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I agree with FLSF that the lack of an explanation of the value of money (or the MELT) in the case of non-commodity money is an important weakness of the NI, as it stands now.

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48   Fine, Lapavitsas, and Saad-Filho 2004, p. 15.

49   Of course, as discussed in Chapter 8, in its theory of the rate of profit and micro prices of production, the NI switches its logical method from sequential determination to simultaneous determination.

50   Saad-Filho 2002, p. 98.

in the Sraffian price system is a shortcoming.[51] And Fine and Saad-Filho in their textbook seem to accept the Sraffian 'correction' of Marx's theory of prices of production as long-run equilibrium prices, which is also based on simultaneous determination (although they call this a secondary matter).[52] But in this paper, FLSF provide a convincing argument against the simultaneous determination of all prices (both inputs and outputs) and the rate of profit, because of the sequencing over time of the individual circuits of capital.

In conclusion, FLSF argue that the NI is a 'wrong turn' for Marxian theory. In my view (as discussed in Chapter 8), the NI is not a 'wrong turn', but rather a partial, incomplete turn in the right direction; because it only 'goes halfway'. The NI makes a correct turn with respect to variable capital, but fails to make a similar correct turn with respect to constant capital, so that the NI remains logically inconsistent.

6   Critique of 'Monetary' Interpretation of Constant Capital

In this same next-to-last section, FLSF also briefly discuss my criticism of the inconsistency in the New Interpretation between the determination of variable capital (taken as given) and constant capital (derived from given means of production), which 'forces an analytical wedge between variable capital and constant capital'.[53] They seem to agree with this criticism, but they also seem to agree with Foley's reply that 'there is no plausible interpretation of the labour time equivalent of constant capital since it is neither the historical labour time embodied in the means of production, nor the current labour time embodied in the means of production.'[54] I have already responded to Foley's criticism in Chapter 8; there *is* a plausible interpretation of the labour time equivalent of constant capital: the labour time represented by the money constant capital advanced to purchase means of production. It is true that this quantity of labour time is not equal to the labour time embodied in the means of production (either historical or current). But that is not a problem. The means of production have already been purchased and sold, and thus already have a price (their price of production), and the labour time embodied in the means of production has already been represented in this already existing price of production of the means of production. As discussed in previous chapters,

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51   Saad-Filho 2002, pp. 23–5.

52   Fine and Saad-Filho 2004, pp. 130–1.

53   Fine, Lapavitsas, and Saad-Filho 2004, p. 13.

54   Fine, Lapavitsas, and Saad-Filho 2004, p. 14.

this already existing price of production is transferred directly to and becomes the first component of the price of the output. It is true that the labour time embodied in the means of production is somewhat misrepresented by its already existing price of production, because this price is not proportional to the labour time embodied in the means of production due to the equalisation of profit rates. But nonetheless, this actual price of production of the means of production objectively represents the labour time embodied in the means of production and this actual price of production becomes the first component of the price of the current output. This is the way that the prices of commodities as *products of capital* are determined, as the sum of the already existing constant capital (= to the price of production of the means of production) plus the new value produced by current labour (i.e., P = C + N). And this is the way past labour plays a role in the determination of the value of commodities produced by capital – through the transfer of the constant capital advanced to purchase means of production at their prices of production.

On a related point, FLSF also argue that my interpretation of past labour 'disregards the problem of achieving equivalence between dead labour and living labour.'[55] But I argue that there is *no problem* in Marx's theory of 'achieving equivalence between dead labour and living labour'. Dead labour has already been expressed as quantities of money (as the money price of production of the means of production) and thus has already achieved equivalence in the form of money ('general social labour'). The calculation of past labour (= C/m) is not a logically necessary part of the theory of the price of the output. The actual money constant capital is taken as given, and is transferred directly to the price of the output as such, without having to be translated into past labour. This translation can be made in order to compare and contrast the determination of the prices of 'simple commodities' and the prices of 'commodities as products of capital' (see Chapters 2 and 4), and also in order to emphasise that the magnitude of constant capital depends primarily, but not solely, on the labour time required to produce the means of production.

Finally, FLSF also argue that defining past labour in this way (= C/m) leaves out technological change and the devaluation of capital due to crises and disruptions.[56] I don't understand why defining 'past labour' as derived from the money constant capital advanced leaves out technological change and the devaluation of capital. Perhaps they think that I mean the 'historical cost' constant capital, which is not devalued. But this is not my interpretation. As I have

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55   Fine, Lapavitsas, and Saad-Filho 2004, p. 14.
56   Fine, Lapavitsas, and Saad-Filho 2004, pp. 14–15.

discussed in previous chapters (and in Moseley 1996), the constant capital that is taken as given in Marx's theory of value and prices of production is the *current cost* constant capital. If there is technological change that reduces the prices of the means of production and hence reduces current constant capital, then all similar means of production will be devalued correspondingly, with losses and possible disruptions, as in the FLSF interpretation. Similarly, if constant capital is devalued due to crises and bankruptcies, the constant capital that is taken as given is the current constant capital, after the devaluation. Therefore, defining past labour as I do fully accounts for technological change and the devaluation of capital. After technological change or devaluation due to crises, the past labour represented by the smaller constant capital is revalued along with the constant capital and is *less* that what it was before.

Conclusion

Fine and Saad-Filho have made important contributions to the development of Marxian theory and the interpretation of the transformation problem. Their main contribution is their emphasis that Marx's theory of prices of production is presented in terms of the organic composition of capital, and that variable capital in the denominator of the OCC is an index for the quantity of labour employed (that is different across industries *only if* the quantities of labour are different), which I think is the key characteristic of the OCC. I argue that variable capital is defined in this way because differences across industries in the amounts of variable capital could be due *either* unequal quantities of labour employed *or* unequal wage rates, and these two causes of unequal amounts of variable capital have *opposite effects* on the quantity of surplus-value produced in different industries and hence on the determination of the general rate of profit and prices of production. A greater quantity of *labour* in some industries compared to other industries results in a *greater* quantity of surplus-value produced in the first industries; whereas relatively higher *wage rates* in some industries results in a *smaller* quantity of surplus-value produced in those industries. However, constant capital is different in this crucial respect, and Fine and Saad-Filho misinterpret constant capital in the OCC. Differences across industries in the amounts of constant capital could also be due to *either* unequal *quantities* of means of production *or* to differences in the *prices* of the means of production; but these two causes of unequal amounts of constant capital have the *same effect* on the rate of profit in individual industries and in the economy as a whole. In either case, a relatively higher constant capital in some industries results in a lower value rate of profit in those industries,

whether the cause of the higher constant capital is a greater quantity of means of production or higher prices of the means of production. Therefore, constant capital in the numerator of the OCC is *not* an index of the quantity of means of production (that is different across industries *only if* the quantities of means of production are different), and Fine and Saad-Filho's interpretation of constant capital in the OCC as an index of the quantity of means of production is mistaken.

Another misinterpretation, in my view, is that Fine and Saad-Filho also argue that prices of production in Marx's presentation in Part 2 of Volume III are not long-run equilibrium prices. But Marx said many times that his prices of production are 'centre of gravity' prices, which equalise the rate of profit, and around which actual market prices fluctuate, similar to Smith's and Ricardo's 'natural prices'. Marx's prices of production are long-run equilibrium prices in the classical tradition. Surely an interpretation of Marx's theory that can also explain long-run centre-of-gravity prices is preferable to an interpretation of Marx's theory that cannot.

Another misinterpretation is that Saad-Filho argues that there is a 'second stage' of Marx's transformation of values into prices of production, beyond what Marx did in *Capital*, in which prices of production are long-run equilibrium prices with the associated long-run equilibrium rate of profit. However, in this second stage, Marx's theory is abandoned altogether and replaced by the Sraffian theory of prices of production and the rate of profit. This does not seem like a promising path for the future development of Marx's theory.

In conclusion, I would say that a general problem with the FSF interpretation is that they do not pay sufficient attention to the *circuit of money capital* (M ... M+ΔM) as the logical framework of Marx's theory. The circuit of money capital is hardly mentioned in their writings; the numerator of the OCC is defined as the labour value of the means of production, rather than the money constant capital advanced to purchase means of production. But constant capital and variable capital are the two components of the initial money capital M advanced at the beginning of the circuit of money capital, and thus both components of capital are defined in terms of money. I think that this logical framework of the circuit of money capital provides a better understanding of Marx's concept of the organic composition of capital, and of Marx's theory in general.

Replies to Criticisms of My Macro-Monetary Interpretation

This chapter responds to previous criticisms of my 'macro-monetary' interpretation of Marx's theory by David Laibman and Riccardo Bellofiore.[1] I appreciate their attention to my interpretation, and I would like to take this opportunity to respond to their criticisms. The first section responds to Laibman and the second section responds to Bellofiore.

1   Reply to Laibman: The Return to Marx: Retreat or Advance?

David Laibman has defended the Sraffian interpretation of Marx's theory and has criticised my interpretation (as presented in Moseley 1993, my first article on this subject) and the interpretations of others that he calls 'new orthodox Marxists' ('NOMists'), mainly the 'temporal single system' interpretation (discussed in Chapter 9).[2] This section will discuss Laibman's general interpretation of the transformation problem, his critique of my interpretation, and his concluding remarks.

In his introduction, Laibman accuses 'NOMists' of asserting that Marx's theory is '*literally* true and *completely* correct' and that 'Marx made no errors'. I myself have not made any such grand and sweeping statements, and I don't think these other authors have either. I am arguing specifically that Marx did not make the error of failing to transform the inputs in his theory of prices of production, and that this in itself is very important for the evaluation of the logical consistency of Marx's theory.

1.1   *Laibman's General Interpretation of the 'Transformation Problem'*
Laibman's own interpretation of the transformation problem adopts the basic Sraffian input-output framework in term of physical quantities.[3] All the dependent variables in the theory are defined in units of labour times (both val-

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1 Laibman 2000 and Bellofiore 2004a.
2 Laibman 2000.
3 Laibman 1973–4, 2000, and 2002, Chapter 2.

ues and prices of production; similar in this respect to Duménil and to Wolff, Roberts, and Callari). The 'invariance condition' is assumed to be 'equal rate of exploitation' in all industries, defined in terms of the real wage and the surplus product. As a result of these assumptions, neither the gross aggregate price-value equality nor the net aggregate price-value equality is satisfied.

Laibman repeats the long-standing criticisms of Marx's theory of prices of production: that Marx failed to transform the inputs of constant capital and variable capital; as a result the conditions of simple reproduction are violated; Marx's mistake was corrected by Bortkiewicz, using the method of simultaneous determinations; but Marx's key quantitative conclusions are no longer valid. In particular, total profit is in general no longer equal to total surplus-value, and the price rate of profit is not equal to the value rate of profit. These criticisms are based, as always, on the implicit interpretation that the initial givens in Marx's theory are the physical quantities of the technical conditions of production and real wage, and that constant capital and variable capital are derived from these given bundles of goods, first as their values and then as their prices of production.

I have answered these criticisms in the preceding chapters. The main point is that Marx did not 'fail to transform the inputs', and therefore none of the other points follow. The conditions of simple reproduction are not violated in the transformation of values into prices of production; no 'correction' is necessary; and Marx's key quantitative conclusions are valid, including especially total profit = total surplus-value.

Laibman, like many traditional Marxists (e.g., Sweezy and Shaikh), does not consider these criticisms to be serious weaknesses of Marx's theory, but rather to lead to its further development. He argues that the divergence of total profit from total surplus-value 'does not diminish Marx's qualitative argument concerning capitalist exploitation. Indeed, the argument is enhanced by the realization that exploitation, far from taking place in mutually isolated sectors, is systemic and inseparable from the entire web of interconnections in the structure or production and exchange.' Marx's 'pooling-and-redistribution metaphor' is 'relativised', but its essential truth (the exploitation of labour) remains.[4]

In response, I argue that 'pooling-and-redistribution' is not a metaphor, but is instead an essential aspect of Marx's logical method, which he emphasised over and over again in his manuscripts, as we have seen. As discussed above, it follows from Marx's basic labour theory of value and surplus-value that all the different individual forms of surplus-value *come from surplus labour*, and from

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4   Laibman 2000, p. 314.

surplus labour alone (despite superficial appearances to the contrary). There-fore, I think the divergence of total profit from total surplus-value would dimin-ish considerably the force of Marx's theory of surplus-value and exploitation. According to the Laibman's interpretation (which is the standard interpreta-tion), in order to 'correct Marx's mistake' of failing to transform the inputs, this key aspect of Marx's theory has to be given up. However, if Marx did not make this 'mistake', then this key aspect of Marx's theory does not have to be given up.

Exploitation is indeed systemic, because exploitation is a class relation, between the capitalist class as a whole and the working class as a whole. And that is precisely the reason why the total surplus-value of system as a whole is determined prior to its division into individual parts. This total surplus-value is determined entirely in production, by surplus labour in production. According to Marx's logic, the production of surplus-value (the determination of the total surplus-value) is indeed 'separable' from exchange and the distribution of surplus-value, in the sense that the total surplus-value is determined in production, prior to its distribution through exchange.

Laibman also argues that the divergence of total profit from total surplus-value is one aspect of the 'mystification' of surplus-value, which hides its source in surplus labour. As we saw in Chapter 3, the 'mystification' of surplus-value is indeed a very important part of Marx's theory, and is one of the main themes of Volume III of *Capital* – that all the different forms of surplus-value (profit, average profit, commercial profit, interest, and rent) mystify and obfuscate in one way or another that the only source of surplus-value is surplus labour. With average profit and prices of production, each capital receives a share of the total surplus-value in proportion to its size, with no distinction between constant capital and variable capital, thereby mystifying the fact that variable capital is the only real source of surplus-value. This is the mystification that results from average profit and prices of production. Marx emphasised that, in spite of this mystification, *total profit = total surplus-value*, as determined by surplus labour. In the divergence of total profit from total surplus-value according to the Sraf-fian interpretation, it does not just *appear* that there is another determinant of the total profit besides surplus labour, there *really is* another determinant – the equalisation of profit rates across industries (which has nothing to do with exploitation). This is no longer mystification, but in reality another source of surplus-value (according to the Sraffian interpretation).

Indeed, as we have seen in previous chapters, it follows from the Sraffian re-interpretation of Marx's theory that total profit and the rate of profit could be determined without surplus-value and surplus labour at all; they could be determined directly from the physical quantities of inputs, outputs, and

real wages (as emphasised by Steedman and others). This alternative direct determination of total profit and the rate of profit (without the labour theory of value) would lead to *the same total profit* and *the same rate of profit* as the indirect determination (with the labour theory of value). So the labour theory of value and exploitation in this Sraffian re-interpretation is indeed 'redundant' with respect to these key quantitative conclusions, as Steedman and others have argued. Laibman does not respond to this 'redundancy critique'.

Finally, Laibman argues that this Sraffian re-interpretation of Marx's theory of prices of production is 'in fact a *coherent* theory of price'. This Sraffian re-interpretation, based on simultaneous determination, may be a coherent theory of price, but it is also a very unrealistic theory of price. It shares with Sraffian theory the same important defects discussed in Chapter 6 – it is unable to realistically incorporate fixed capital, and it is unable to realistically incorporate unequal turnover periods across industries. Marx's theory, on the other hand, in terms of quantities of money capital, does not have these problems. Marx's theory is also 'in fact a coherent theory', and it is also a much more realistic one, with no problem incorporating fixed capital and unequal turnover periods.

1.2   *Marx's Admissions of Errors*

Laibman also repeats the often-made argument that Marx himself acknowledged in several passages that he had made an error in his own explanation of prices of production by failing to convert the inputs of constant capital and variable capital from value terms to price terms. Laibman states:

> It should be mentioned that Marx himself **repeatedly** referred to the 'possibility of error' in disregarding the effect of formation of prices of production upon the valuation of inputs (see, e.g., Marx 1982: 261, 65). Marx is therefore the first 20th-century Marxist, despite strenuous, and admirable, efforts by some of the NOMists to discount and **explain away** those passages.[5]

Even though Laibman says that Marx 'repeatedly' acknowledged his 'error', he cites only two passages, both from Chapter 9 of Volume III. I have discussed both of these passages at length in Chapter 4, where I acknowledged that these passages could be interpreted as Laibman does (which is the standard interpretation), but only if one takes a narrow view of these few sentences in isol-

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5   Laibman 2000, p. 315.

ation and ignores the surrounding paragraphs which provide the context for these sentences. If, on the other hand, one takes into account the surrounding paragraphs (as one should), and even other sentences in the same paragraph, this surrounding text contradicts the standard interpretation. The standard interpretation of these passages is also contradicted by the many statements in Chapter 9 according to which 'the cost price is the same' in the determination of both values and prices of production, including especially the recently discovered 'missing paragraph' discussed in Chapter 4.

I have argued that these controversial passages can be interpreted in another way, which is consistent with the surrounding text, and according to which Marx is *not* 'admitting his errors', but is instead providing a *more complete explanation* of the given actual quantities of money constant capital and variable capital. These given actual quantities of money capital are now understood to be equal to the prices of production of the means of production and means of subsistence, instead of equal to their values. Laibman does not discuss any of the many passages of textual evidence that I have presented in earlier papers to support my 'monetary' interpretation of the initial givens in Marx's theory (the circuit of money capital, M presupposed, cost price is the same, etc.). My interpretation does not 'explain away' these controversial passages, but rather puts them in the proper context of the surrounding paragraphs (and much other textual evidence), which enables us to understand and explain these passages more thoroughly and accurately.

1.3 *Laibman's Critique of My 'Methodological' Interpretation*

Laibman calls my interpretation a 'methodological' interpretation (which it is). Laibman begins his critique of my 'methodological' interpretation of Marx's theory by stating that this interpretation 'rests on an invocation of the sanctity of Marx's method'. The word 'sanctity' seems to imply that Marx's method is considered to be necessarily true and without fault (holy?).

However, that is not what I am arguing. I am *not* arguing that Marx's theory must be correct; rather I am arguing that an evaluation of the logical consistency of Marx's theory should be based on the best possible understanding of Marx's own logical method, not on the basis of an altogether different logical method. The critics of Marx's theory of prices of production, including Laibman, argue that Marx made a *logical error* – that he failed to transform the inputs of constant capital and variable capital from values to prices of production. Surely, the validity of this logical criticism depends on whether or not the logic of Marx's theory with respect to the determination of these inputs has been correctly understood. That is the reason I insist that Marx's logical method should be re-examined, in order to more properly evaluate whether or not there

is a logical error in Marx theory, not because I regard Marx's theory to be necessarily true and without error. I hope that others will agree that Marx's logical method on this key issue is worth another look.

I have argued that, within the framework of Marx's own logical method, he did not commit this alleged logical error. That is, he did not fail to transform the inputs of constant capital and variable capital from values to prices of production because, according to Marx's logical method, the *same quantities* of constant capital and variable capital are *taken as given* in the determination of both values and prices of production – the actual quantities of money capital advanced at the beginning of the circuit of money capital. These quantities of money capital are not derived from given technical conditions of production and the real wage, first as their values and then as their prices of production. Therefore, the correct judgement with regard to the logical consistency of Marx's theory depends on which of these two interpretations of Marx's logical method is correct. One cannot just brush aside this issue of the correct interpretation of Marx's logical method and refuse to consider it. Those who follow the Sraffian interpretation, including Laibman, should not simply continue to presume and reassert dogmatically that the fundamental givens in Marx's theory are the technical conditions and the real wage, and that constant capital and variable capital are derived from these fundamental givens, but should instead present arguments and textual evidence to support this alternative interpretation, and should also discuss the arguments and textual evidence that I and others have presented to support alternative interpretations.

Laibman argues further that my 'methodological' interpretation confuses two meanings of the word *constant*.[6] Specifically, it is argued that constant capital and variable capital are held constant in the transformation of values into prices of production because they must be held constant in order to explain the origin of surplus-value. Laibman writes:

> To isolate the source of the increase [i.e., the source of surplus-value], in the purchase and sale of labour-power, the original *M must be held constant. From this we deduce* that the value magnitudes of inputs *are not transformed* when (direct) values are transformed into prices of production.[7]

6   Laibman 2000, p. 316.

7   Ibid.

However, this is not my argument regarding why constant capital and variable capital remain constant in Marx's theory of the determination of prices of production. My argument is that constant capital and variable capital are held constant because Marx's theory takes the same quantities constant capital and variable capital as given in both stages of the theory – the actual quantities money capital advanced to purchase the means of production and labour power in the beginning of the circuit of money capital. Marx's theory of surplus-value in Volume I of Capital takes as given the total amounts of constant capital and variable capital, and his theory of prices of production in Volume III takes as given the individual amounts of constant capital and variable capital invested and consumed in each industry. The sum of the individual amounts of constant capital and variable capital taken as given in Volume III is by definition identically equal to the total amounts of constant capital and variable capital taken as given in Volume I. The actual quantities of constant capital and variable capital do not change in the transition from the macro theory in Volume I to the micro theory in Volume III. Therefore, my argument for why constant capital and variable capital are held constant in Marx's theory of prices of production does not confuse two meanings of the word 'constant'; instead, it is based on a different interpretation of the initial givens in Marx's theory, an interpretation for which I have provided substantial arguments and textual evidence.

In my 1993 paper, I presented several arguments to support this interpretation that constant capital and variable capital are taken as given in terms of money.[8] (1) The fact that Marx's general formula for capital M – C – M′ begins with a sum of money, which suggests that this sum of money is the initial given in Marx's theory. (2) The logical relation between Parts 1, 2, and 3 of Volume I, according to which the concept of money is developed as the logical presupposition to his theory of capital and surplus-value. (3) The numerous passages in which Marx stated that the quantity of money capital that initiates the circulation of capital is given or presupposed in his theory of value and surplus-value. Laibman did not respond to any of these arguments. Rather, he continues to assert, without argumentation or justification except the authority of the prevailing interpretation, that the initial givens in Marx's theory are the physical conditions of production and the real wage, and that constant capital and variable capital are derived from these given physical quantities, first in terms of values and then in terms of prices of production.

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8   Moseley 1993.

Laibman also argues that, according to my interpretation of the transformation process, constant capital and variable capital *are left in terms of value*, that is, as the value of the means of production, and wage goods, respectively.[9] I hope it is clear from this book that this criticism is mistaken. According to my interpretation, constant capital and variable capital do not remain in terms of value because constant capital and variable capital *are never in value terms* to begin with. Constant capital and variable capital are taken as given as actual quantities of money capital advanced and consumed in the beginning of the circuit of money capital, which in general (as a long-run tendency) are equal to the prices of production (not the values) of the means of production and means of subsistence. It is provisionally assumed, as a first approximation, that these actual quantities of money capital are equal to the values of the means of production and means of subsistence. But this provisional assumption about the actual given C and V does *not determine* their magnitudes in the theory of value and surplus-value and prices of production; rather these magnitudes of C and V are instead the actual quantities of money capital, which are taken as given. Therefore, my interpretation does not leave C and V in value terms, because they never are in value terms in the first place. They are in terms of the actual money capital advanced, which are equal to the prices of production of the inputs, but prices of production cannot be explained until Volume III.

In subsequent email correspondence, I tried to clarify this point to Laibman, and his response was that my interpretation is similar to what he called in his paper the 'retroactive' interpretation, which he attributed to Carchedi and Mage.[10] According to Laibman, the 'retroactive' interpretation assumes that the inputs in Marx's tables in Chapter 9 of Volume III have already been transformed (that is why he calls this interpretation 'retroactive'), and the only transformation that remains is for the outputs. Therefore, this interpretation (according to Laibman) isolates inputs and outputs into separate categories, so that there are two separate transformations, and the rates of profit are different for the two transformations, which requires that the prices of inputs be transformed again, contrary to the original assumption.

My response to this criticism is that Laibman has misunderstood my interpretation (and I think he has also misunderstood Carchedi's and Mage's interpretation).[11] There are not two different transformations with two different

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9   Laibman 2000, p. 316.

10   Laibman 2000, p. 317.

11   I agree that on this important point, my interpretation is similar to that of Carchedi and

rates of profit. Rather, constant capital and variable capital are taken as given, as the actual quantities of money capital advanced to purchase means of production and labour power, without reference to *any* rate of profit. These given amounts of constant capital and variable capital are used to determine the total value and total surplus-value and the general rate of profit, and also to determine the individual prices of production. Once prices of production are explained, then the initial given amounts of constant capital and variable capital are explained as equal to the prices of production of the means of production and means of subsistence, which depend in part on the rate of profit. There are not two different rates of profit, but only one rate of profit, which is determined at the aggregate level and then taken as given in the determination of individual prices of production and in the eventual explanation of the given constant capital and variable capital.

In an important footnote, Laibman makes the following argument:

> Moseley argues that the given money sums of constant and variable capital are unrelated to *any* physical quantities, whether measured (untransformed) in value or in production-price terms. This removes the formation of production prices from any concept of reproduction and the labour process, and in effect makes the magnitude of value and surplus-value indeterminate. Here, as in many ultra-orthodox efforts to defend Marx, the result is the dismantling of his conceptual edifice. A deeper insight arises from this: a viable system of thought will tend to be destroyed, unless it is continually developed and transformed.[12]

To clarify, I do not argue C and V 'have no relation at all' to the physical quantities of means of production and means of subsistence. I argue that C and V in Volume I (and II) are *not* equal to the *value* of given means of production and means of subsistence (i.e., hypothetical unreal quantities in a hypothetical 'value system'), but are instead taken as given as the actual quantities of money capital advanced to purchase means of production and labour power in the real capitalist economy, which tend to be equal to the *prices of production* of the means of production and means of subsistence, not equal to their values. Therefore, C and V clearly do have a relation to these physical quantities, and

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Mage. I think it is very interesting (and somewhat amazing) that Mage had a similar interpretation as a lone Marxian scholar in the early 1960s.

12   Laibman 2000, pp. 316–17.

it is the real actual relation, not the hypothetical unreal relation that Laibman and the standard interpretation have in mind.

Secondly, Marx's theory does indeed 'remove price determination from physical reproduction'. Prices in each industry are not determined by the requirements of physical reproduction, but are instead determined by actual capital costs in each industry plus the average rate of profit (which is determined for the economy as a whole and is the same for all industries). Marx's theory of price of production in Part 2 of Volume III is not in terms of the reproduction schemes; the reproduction schemes are not relevant to the determination of prices of production. And the reproduction schemes themselves are in terms of quantities of money capital, not in terms of physical quantities of inputs and outputs.

Thirdly, I do not understand why Laibman says that 'value and surplus value are indeterminate' in my interpretation, except perhaps that he thinks that value and surplus-value can *only* be determined by physical reproduction; so without physical reproduction, value and surplus-value are indeterminate. But physical reproduction is *not* the *only* way value and surplus-value can be determined; value and surplus-value can be determined in other ways. I think I have clearly shown that value and surplus-value are fully determined in my 'macro-monetary' interpretation (see Chapter 2) without any consideration of physical reproduction. And so also are the rate of profit and prices of production in a logically coherent way.

Also, I have shown in previous chapters that Marx's 'conceptual edifice' is *not* a physical input-output matrix, but is instead the *circuit of money capital*: **M – C ... P ... C′ – M+ΔM**. My emphasis on the circuit of money capital does not 'dismantle' Marx's conceptual edifice, but rather returns it to its proper place.

Finally, I would say that 'a viable system of thought will tend to be destroyed' if it is misinterpreted in terms of an alien logic. Marx's theory is indeed a viable system of thought, but it is misinterpreted and turned into an invalid system of thought, and in that way destroyed.

1.4   *Laibman's Concluding Remarks*

In conclusion, Laibman suggests that three lessons follow from his critique of 'new orthodox Marxism': (1) Simultaneous determination is a necessary feature of a Marxian theory of capitalism, because simultaneous determination reflects the *interdependence* of economic variables. (2) The method of simultaneous determination is 'entirely consistent' with Marx's theory of value and surplus-value. Laibman argues that 'the simultaneous *quantitative determination* of the profit rate and prices does not inviolate the *ontological priority* of the profit rate.' And 'the 20th century Marxist [*eigenvalue*] conception of pro-

duction prices is arguably the closest thing available in all of economics to a coherent theory of price formation'. (3) Most importantly, according to Laibman, we should avoid dishonouring Marx by treating him as a 'holy prophet'. There is only one path from the 19th to the 21st century and it goes through the 20th century.[13]

With regard to the first two points, I have argued extensively that simultaneous determination is *not consistent* with Marx's theory, for two main reasons: (1) because the total surplus-value is determined by the total surplus labour, prior to the division of this total amount into individual parts; and (2) because the logical framework of Marx's theory is the circuit of money capital, and the advance of capital at the beginning of the circuit is logically and chronologically prior to the recovery of capital at the end of the circuit. The key variables in Marx's theory are indeed interdependent, but the interdependence is of a sequential nature, rather than simultaneous. The main interdependence that is usually invoked by Sraffian critics is between the initial capital advanced (M) and the rate of profit (r) (Laibman does not mention any specific examples). I have responded to this criticism in Chapter 6 (Section 2.4). I have argued throughout this book that M is taken as given, as a pre-existing known datum, without reference to r. No explanation of M is necessary in order to use the pre-existing M to explain the resulting ΔM and r. Marx's theory proceeds from the *known* M (capital advanced and consumed) to the *unknowns* M′ (capital recovered), ΔM (surplus capital recovered), the general rate of profit, and prices of production. This sequential logic is not circular reasoning.

On the other hand (as we saw in Chapter 6), simultaneous determination poses very serious problems for which there are no good solutions: (1) fixed capital must be treated as a 'joint product', which requires further unrealistic assumptions (all the different types of fixed capital goods in an industry must be assumed to have the *same lifetime*, so they can be analysed together as a 'plant', with only one price for all the fixed capital goods in the 'plant', and the 'age distribution' of every type of fixed capital good is assumed to be 'uniform', i.e., the quantity of all ages of a given fixed capital good must be the same, and the total quantity of each type of capital good must be an integer multiple of its lifetime); and (2) it must be assumed that all industries have the *same turnover period* – or all the different turnover periods are assumed to be reduced to a hypothetical 'unit time period' and the result of production in every 'unit time period' is assumed to include hypothetical 'partially completed products' whose prices are determined simultaneously with the prices of actual

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13   Laibman 2000, pp. 328–30.

products. Marx's theory, based on the circuit of money capital and sequential determination, has none of these problems.

I am not sure what Laibman means by the 'ontological priority' of the rate of profit, but Marx's theory is clearly based on the *logical priority* of the rate of profit and the *quantitative determination* of the rate of profit prior to prices of production. If the 'ontological priority' of the rate of profit plays no role in the quantitative determination of prices of production, what is its significance? Although the Sraffian-Marxian theory might be logically coherent, it is also very unrealistic (as I argued above) because it cannot incorporate fixed capital and unequal turnover times in reasonable and realistic ways. Marxian theory, on the other hand, is both logically coherent and also much more realistic, and it has no problem incorporating these important characteristics of capitalist economies.

Finally, with regard to treating Marx as a 'holy prophet', I hope it is clear that I do not treat Marx as a holy prophet, but instead I am trying to understand Marx's theory better, and especially his logical method, as a necessary preliminary step toward a more appropriate evaluation of the logical consistency of Marx's theory and the further development of Marx's theory. To re-examine Marx's theory seriously, with special attention to the logical method employed, is not to dishonour Marx as a holy prophet; rather it is to honour him by taking his theory and his logical method seriously enough to study it thoroughly and on its own terms, not from the perspective of some other theory. As a result of this re-examination, I and others have come to the surprising and disappointing conclusion that Marx's theory has been fundamentally misunderstood for most of the 20th century. Paradoxical as it may seem, if we want to develop a theory of capitalism based on Marx's own logical method, then we are forced, at the beginning of the 21st century, to re-examine and restudy Marx's 19th century writings. (Fortunately, this is now more possible than ever before, because of the recent publication of all of Marx's economic manuscripts in the MEGA).

This re-examination of Marx's theory might look like a retreat, but in terms of the development of Marx's theory, it is clearly an advance, which is long overdue. Whether or not a better understanding and the further development of Marx's theory turn out to be an advance in understanding 21st century capitalism remains to be seen. But if the 'new orthodox Marxists' are on the right track, and Marx's theory really is fundamentally different, not only from neoclassical theory, but also from Sraffian theory, then the rediscovery of Marx's logical method at least provides us with *another alternative theory* with which to try to understand capitalism as it evolves into the 21st century.

In conclusion, Laibman proposes a distinction between Error I ('a crucial logical flaw that strikes at the heart of a theoretical system') and Error II ('an

inconsistency, whose removal, through the further development of the theory, leaves the foundation of the theory in tact').[14] Laibman argues that Marx's mistake in his theory of prices of production (failing to transform the inputs) is only an Error II mistake. I argue that Marx did not make this mistake in his theory of prices of production at all, but if Marx had made this mistake, then it would be an Error I mistake, because its 'removal' contradicts the prior determination of the total surplus-value, which does indeed 'strike at the heart' of Marx's theoretical system. This 'removal' is not the further development of the theory, but rather its abandonment.

Laibman criticises me (and other NOMists) for being 'willing to sacrifice the whole Marxian enterprise' on our claim that Marx did not make this mistake in his theory of prices of production. I would say that the 'Marxian enterprise' in terms of the labour theory of value and surplus-value and the rate of profit has already been largely abandoned by left-wing economists and other social scientists. And the main reason the labour theory of value has been abandoned is precisely because of Marx's alleged 'mistake' in his theory of prices of production, and also because, after the Sraffian 'correction' is made, the labour theory of value is 'redundant' in this Sraffian framework – the *same quantitative conclusions* concerning prices of production and rate of profit can be derived in Sraffian theory directly from the technical conditions and the real wage, without the labour theory of value. If the Marxian enterprise is to be resurrected, it will have to be on more fundamental grounds.

But even if this strong conclusion is not accepted, can we not agree that the simultaneous determination interpretation is *not the only possible interpretation* of Marx's theory, i.e., that there are *other possible interpretations* of Marx's theory that have *at least as much* methodological and textual support in Marx's writings as the Sraffian 'eigenvector' interpretation? (I would say much more support). If this minimum conclusion is accepted, then it should be acknowledged that at least some of these valid interpretations of Marx's theory (including the 'macro-monetary' interpretation presented in this book) come to very different conclusions regarding the logical consistency of Marx's theory of prices of production; that is: (1) Marx did not make a logical mistake in his theory of prices or production (he did not fail to transform the inputs from values to prices); (2) the rate of profit does not change as a result of the determination of prices of production; and (3) Marx's two aggregate equalities are both true simultaneously. At the very least, it should be acknowledged that these conclusions cannot be dismissed out of hand, as having already been

14   Laibman 2000, p. 330.

proven false, but instead follow from an interpretation of Marx's theory that has at least as much validity as the simultaneous determination interpretation.

2   Reply to Bellofiore: What is Macro? What is Monetary?

Riccardo Bellofiore has also presented a critique of my 'macro-monetary' interpretation of Marx's theory.[15] He also calls his interpretation a 'macro-monetary' interpretation, but his meaning of these terms is somewhat different from my meaning, and he has criticised my meaning. This section will respond to Bellofiore's criticisms, first with respect to 'macro', then with respect to 'monetary', and finally with respect to our most important difference – the determination of variable capital.

2.1   *Macro*
In the following passage, Bellofiore seems to argue that the theory of surplus-value in Volume I is a macroeconomic theory about the total surplus-value produced by the working class as a whole:

> The main question addressed by Marx in Volume I is thus the following: *how can the capitalist class get out of this economic process more than they put into it? ...* From a macroeconomic point of view, it is clear that *the 'valorisation' of capital cannot have its origin in the 'internal' exchanges within the capitalist class ...* As a consequence, *the source of surplus-value must be traced back to the only exchange which is 'external' to the capitalist class, namely the purchase of labour-power.*[16]

And yet Bellofiore argues against my interpretation of individual capitals in Volume I as representative of the total social capital and individual workers as representative of the working class as a whole.[17] But if Volume I is about the total class relation between capitalists and workers and the determination of the total surplus-value, and the theory of surplus-value is illustrated in terms of individual capitals, doesn't it make sense that the individual capitals in these illustrations represent the total social capital?

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15   Bellofiore 2004a.
16   Bellofiore 2004a, p. 175.
17   Bellofiore 2004a, p. 201.

Bellofiore also argues that my interpretation of 'representative capital' and 'representative worker' is similar to the mainstream macroeconomic assumption of a 'representative agent'. I argue that the logic of Marx's representative capital is entirely different from mainstream macro's representative agent. To begin with, mainstream macro's analysis of the representative agent is not about capital or surplus-value, but is instead usually about the effects of monetary policy and how individuals adjust their spending and investment decisions in response to changes in monetary policy. Furthermore, mainstream macro's analysis of the representative agent is based on the utility theory of value and the representative agent's utility function, which is usually assumed to be *the same for all individuals*; i.e., there is no distinction between capitalists and workers, nor between creditors and debtors, etc. The most obvious problem with this 'homogeneity' assumption is creditors and debtors who generally have *opposite* preferences with respect to monetary policy and opposite reactions to changes in monetary policy. This is obviously a very unrealistic theory which has little or no relevance or application to the real capitalist economy.

Marx's theory, on the other hand, is based on the labour theory of value, and assumes that all workers produce value and produce more value than they are paid. According to Marx's theory, the determinants of the quantity of surplus-value produced are the *same for all workers* – the quantity of socially-necessary labour time performed, the MELT, and the money wage (see Chapter 2 above). Therefore, it is valid to analyse the production of surplus-value by all workers in terms of a typical worker, and to determine the total surplus-value by adding up the surplus-value produced by each and every worker, because the *same theory applies to all workers*.

In Bellofiore 2004b (which is a rejoinder to my reply to his 2004a in Moseley 2004b), he seems to present a different interpretation of Volume I:

> Moseley's attempt to define Volume I as 'macro' in its entirety is pure 'reconstruction', not 'interpretation'. Marx's method for more than two-thirds of *Capital I* is very different, and **definitely not 'macro'**. In most of Volume I, **individual capitals are the subject** of the inquiry, and they are treated **not as aliquot parts** of the aggregate but as typical.[18]

But Marx's theory of surplus-value is presented in the first two-thirds of Volume I, and Bellofiore had argued in 2004a (as we saw above) that Marx's theory

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18   Bellofiore 2004b, pp. 214–15. Bellofiore does not explain the difference between a 'typical' and a 'representative' capital.

of surplus-value is about the total class relation between capitalists and workers. Bellofiore seems to forget about classes in this rejoinder and to imply that Marx's theory of surplus-value in Volume I is only about individual capitals. Furthermore, we saw in Chapter 3 that in the important December 1862 outline of what later became Part 2 of Volume III Marx stated explicitly that in Volume I individual capitals *are* treated as *aliquot parts* of the total social capital. To quote again an excerpt:

> For the *total capital*, however, what has been explained in Chapter 1 [i.e., Volume I] holds good. In capitalist production, each capital is assumed to be a unit, an **aliquot part** of the total capital.[19]

In the same volume as Bellofiore's paper, my paper presented a detailed examination of the textual evidence to support my interpretation that Marx's theory of surplus-value in Volume I is about the *total* surplus-value produced in the economy as a whole.[20] A very brief summary review of this textual evidence includes: *Chapter 4* presents the *'general* formula for capital' and the meaning of 'general' is that this formula applies to all capitals together, and thus applies to the total social capital and the total surplus-value; and this general formula for capital is the logical framework of Marx's theory of surplus-value. *Chapter 5* clarifies that his theory would not try to explain surplus-value by individual capitalists cheating each other: 'The capitalist class of a given country, taken as a whole, cannot defraud itself',[21] thereby indicating that his theory of surplus-value is about the total surplus-value appropriated by the capitalist class as a whole, not the surplus-value of individual capitalists. *Chapter 6* argues that the necessary condition for the appropriation of surplus-value by the capitalist class as a whole is the existence of a class of wage labourers, which clearly applies to the capitalist economy as a whole. *Chapter 10* is about the conflict over the determination of the working day and clearly applies to the general conflict between the capitalist class as a whole and the working class as a whole.[22] *Chapter 11* states that the total labour in the economy as a whole may be regarded as the product of the average working day and the total number of workers, and the total surplus-value produced is the product of the total num-

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19   Marx MECW, v. 33, p. 299 [TSV, v. I, p. 416].

20   Moseley 2004.

21   Marx 1977a, p. 266.

22   Bellofiore 2004a, p. 202, acknowledges that Chapter 10 (which is in the first two-thirds of Volume I) is clearly a macro theory about this economy-wide class conflict over the working day. Doesn't this suggest that the rest of Volume I is also a macro theory?

ber of workers and the average surplus-value produced per worker. *Chapter 12* is about technological change and relative surplus-value, i.e., about the effect of technological change on the price of wage goods and hence on necessary labour and surplus-labour, which is a general effect that applies to all workers, not just to an individual worker. Bellofiore referred to my paper in the first sentence of his paper (2004a), but he did not respond to any of this substantial textual evidence concerning the macro nature of Volume I.

Bellofiore also argues that I failed to clarify why the total surplus-value should have logical priority over the individual parts.[23] But I think I have clarified this fundamental point – the total surplus-value is determined prior to the individual parts because the surplus-value produced by each and every worker is determined by the *same factors* and because all the individual parts of surplus-value come from the *same source* – the surplus-labour of workers. And the individual parts of surplus-value are in turn determined by additional factors, which are incorporated subsequently into the theory of the distribution of surplus-value. Therefore, the total surplus-value must have logical priority, i.e., must be determined prior to its division into the individual parts.

Furthermore, in Bellofiore's own interpretation of the transformation problem and prices of production in an earlier paper, he follows the 'iterative' interpretation discussed in Chapter 7 above (on Shaikh's interpretation).[24] In this iterative interpretation, the total surplus-value is determined in Volume I and is taken as given in the determination of the 'value rate of profit' in the first iteration of prices of production. Therefore, according to this iterative interpretation, Volume I does determine the total surplus-value in this interpretation. The difference between the iterative interpretation and my interpretation in this respect is that, in the iterative interpretation, the total surplus-value that is determined in Volume I is a *hypothetical* total surplus-value (which is determined by the difference between the total living labour minus the labour time required to produce the worker's wage goods) rather than the *actual* total surplus-value (which is determined by the difference between the actual money new value produced and the actual variable capital advanced to purchase labour power), as in my interpretation. Thus this difference is ultimately related to our different interpretations of the determination of variable capital, which is our most important difference and is the subject of subsection 2.3.

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23   Bellofiore 2004a, p. 171.
24   Bellofiore 2002.

2.2   *Monetary*

Bellofiore also made several criticisms of the 'monetary' aspect of my interpretation of Marx's theory. In the first place, he argued that I interpret money as a 'veil', similar (again) to mainstream macroeconomics, by which he means that 'surplus-value is surplus money, and the latter is the mere, though necessary, appearance of surplus labour determining it'.[25] To which I reply: what *else* is surplus-value (ΔM) besides the 'necessary appearance of surplus labour determining it'? If it is 'necessary', why is it 'mere'? In Marx's theory, money is indeed a veil, in the sense that money appears to have value as an intrinsic natural property of itself, independent of labour (i.e., the fetishism of money). The mainstream macro notion of 'money as a veil' is very different from this – that a change in the quantity of money has no effect on the real quantities of output and employment, etc.

Bellofiore also argued that I interpret Volume I to be *only about money* and that the *only form of capital is money capital*, excluding commodity capital.[26] But this is a misunderstanding of my interpretation. I have argued that the main *observable phenomena* that Volume I is about are quantities of money capital (ΔM above all else), but these observable phenomena are *explained by* unobservable quantities of labour time, as in the basic equation of the labour theory of value that I have emphasised: N = m L (see equation (4) in Chapter 2). I would never say that Volume I is only about quantities of money; that would eliminate the labour theory of value. And I have always emphasised that the circuit of capital consists of three phases and three types of capital (money capital, commodity capital, and productive capital). The only way to explain ΔM at the end of the circuit of capital is to analyse the production of commodities in the second phase of the circuit.

Thirdly, Bellofiore argued that the general formula for capital 'does not give any reason to privilege the accounting of values starting from the money shape of capital'.[27] But I disagree; the general formula for capital *does* give a reason to start with money capital – because the general formula for capital itself starts with money capital and because the initial M advanced is taken as given in the determination of M′ and ΔM. In Volume II, Part 1, Marx also discussed the circuits of commodity capital and productive capital, but these circuits are used for other purposes besides the theory of surplus-value (ΔM). As discussed above in Chapter 8, Section 2 on Duménil's New Interpretation, the circuit of com-

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25   Bellofiore 2004a, p. 171.
26   Bellofiore 2004a, pp. 214 and 191–2.
27   Bellofiore 2004a, pp. 193–4.

modity capital begins with C′, the 'already valorised capital', which includes the surplus-value produced in the previous period. Therefore, this circuit obviously cannot be used to explain the production of surplus-value. The purpose of the circuit commodity capital is instead to analyse '*what becomes*' of the different components of the price of the output (constant capital, variable capital, and surplus-value) in the subsequent phases of the exchange of commodities, after production. The purpose of the circuit of productive capital is also not to explain the origin and magnitude of surplus-value, but is instead to emphasise that the production of surplus-value is a continuously repeated process. Marx emphasised in these chapters that, in order to explain surplus-value (ΔM) (the all-important question), the appropriate theoretical framework is the circuit of *money* capital.

An important aspect of Bellofiore's own interpretation of money in Marx's theory is that he argues that Marx's theory requires that *money must be a commodity* produced by labour in order to perform the following crucial functions: (1) to express the different kinds of concrete labour as homogenous abstract labour, either as an ideal exchange or a real exchange; and (2) to determine the value of money before production, which is necessary to determine the value of labour power prior to production. I have argued, to the contrary, that money does not have to be a commodity in Marx's theory and that the above functions can be performed by non-commodity money.[28] This issue of commodity money vs. non-commodity money in Marx's theory is not directly related to the debate over the transformation problem, which has followed Marx and assumed commodity money; so I will not discuss this issue further here.

It should also be recalled, as discussed in Chapter 5, Section 4, that the abandonment of gold as the money commodity eliminates one of the main criticisms of Marx's theory in the traditional debate over the transformation problem – that the equalisation of the profit rate together with a non-average composition of capital in the gold industry would cause total prices of production to diverge from total value-prices. With non-commodity money, prices are no longer exchange-ratios with gold. Therefore, the equalisation of the profit rate in the gold industry (due to a non-average composition of capital) does not affect the prices of commodities, and hence could not possibly affect the total price of commodities, which continues to be identically equal to the total value-price of commodities.

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28   Moseley 2010; a number of other Marxian scholars also argue that money does not have to be a commodity in Marx's theory, including Costas Lapavitsas, Michael Williams, Martha Campbell, and Daniel Saros.

2.3 The Determination of Variable Capital: Money Wage or/and Real Wage?

We come now to the most important disagreement between Bellofiore and myself with respect to the transformation problem – the determination of variable capital. Bellofiore presents a more or less standard interpretation of the determination of variable capital – that variable capital (or the money wage) is derived from a *given real wage*, first in Volumes I and II as the *value* of the given real wage, and then in Volume III as the *price of production* of the given real wage. Thus the magnitude of variable capital *changes* from Volumes I and II to Volume III, *from* a *hypothetical* money wage = value of the given real wage *to* the *actual* money wage = price of production of the given real wage.

I have argued in this book that this standard interpretation of the determination of variable capital (and similarly constant capital) is a misinterpretation. Variable capital in Volume I is not a *hypothetical* money wage; variable capital in Volume I is the *actual* money wage, which is *taken as given* in Volume I, because it cannot yet be explained according to Marx's logical method of the macro before the micro. In Marx's theory of surplus-value in Volume I, the given actual total money wage is subtracted from the actual total new value produced by current labour in order to determine the actual total surplus-value. This interpretation has been supported in this book by the following arguments: this interpretation is consistent with Marx's fundamental methodological premise of the *determination of the total surplus-value prior to its division into individual parts* (and the standard interpretation is not consistent with this fundamental premise); the *circuit of money capital* is the logical framework of Marx's theory of surplus-value and the circuit of money capital *starts with M*, one component of which is variable capital; all the textual evidence presented in Chapter 4, including Marx's many explicit statements that 'M is presupposed' in his theory of the circuit of money capital and the production of surplus-value and that the 'cost price is the same' in the determination of both values and prices of production.

One especially clear passage about the 'characteristic feature of variable capital' was quoted in Chapter 4 from Volume II of *Capital*. An excerpt again:

> The ***characteristic feature of variable capital*** is that a ***definite, given*** (i.e. in this sense constant) part of capital, a ***given*** sum of value (assumed to be equal to the value of the labour-power, although ***it is immaterial here whether the wage is the same as, or more or less than, the value of the labour-power***), is exchanged for a force that valorises itself and creates value – labour-power, which not only reproduces the value paid to it

by the capitalist, but also produces a surplus-value, a value that did not previously exist and is not bought with an equivalent.[29]

N.B. In the determination of surplus-value, it is '*immaterial*' whether the variable capital is *equal to*, *greater than*, or *less than*, the value of labour power. What matters in the determination of surplus-value is the actual magnitude of variable capital paid, in comparison with the new value produced by living labour.

Bellofiore acknowledges that there is textual evidence to support my interpretation that the money variable capital is taken as given.[30] But he argues that these 'monetary' passages can be explained by the fact that they are in the *first two-thirds of Volume I* in which Marx adopts a *microeconomic* perspective. However, I think I have demonstrated that there is overwhelming textual evidence in the first two-thirds of Volume I that Marx's theory of surplus-value is a *macroeconomic* theory of the total surplus-value produced by the working class as a whole for the capitalist class as a whole. Therefore, all these monetary passages in the first two-thirds of Volume I in which Marx states that the money variable capital is taken as given refer to a *macro* theory of the total surplus-value.

On the other hand, Bellofiore argues that there are a number of passages in Volume I in which Marx clearly states that the quantity of wage goods (i.e., the real wage) is taken as given and is used to determine the value of labour power, as the labour time required to produce the given wage goods (he quotes two passages from Chapter 6 and two from Chapter 19).[31] And he infers from these passages that variable capital in Volume I is equal to the *value* of labour power and is thus determined by the *value* of a given real wage. I agree that Marx states in these passages that the real wage is taken as given and that the given real wage determines the value of labour power. And I agree that these passages could be interpreted to mean that the money wage (or money variable capital) in Volume I is determined by the value of the real wage.

Thus there seem to be two sets of textual evidence on this key issue – *both* that the *money* wage (the *money* variable capital) is taken as given *and* that the *real* wage is taken as given.[32] Bellofiore calls these two sets of evidence

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29   Marx 1978, pp. 295–6.
30   Bellofiore 2004a, pp. 194 and 207.
31   Bellofiore 2004a, pp. 194–5.
32   I would say much stronger textual evidence for the 'monetary interpretation', but I put
      that aside.

'contradictory'.[33] But I argue that they are *not* contradictory. The interpretation that I have presented in this book reconciles this apparent contradiction.

According to my 'monetary' interpretation, the actual money variable capital (the money wage) is taken as given in Volume I in order to explain the actual total surplus-value, and the real wage is also taken as given in order to provide a *partial* explanation of the given actual variable capital, as determined primarily (but not entirely) by the labour time required to produce the given real wage. But the value of the given real wage *does not determine the magnitude of variable capital* that is subtracted from the new value produced in order to determine the magnitude of surplus-value in Marx's theory (see equation 7 in Chapter 2). Instead, the magnitude of variable capital that is subtracted from new value in Marx's theory is the actual money capital that is advanced to purchase labour power in the first phase of the circuit of capital, which is taken as given, and which thus determines the actual total surplus-value. And the value of the given real wage provides a partial explanation of the given money wage.

Therefore, I argue that Marx takes as given in Volume I *both* the money variable capital (the money wage) *and* the real wage, for *different purposes*. The actual money variable capital is taken as given in order to determine the actual total surplus-value produced, and the real wage is taken as given in order to provide a partial explanation of the given variable capital. Bellofiore's interpretation, on the other hand, is contradicted by one side of the textual evidence – all the textual evidence that the actual money variable capital is 'presupposed' in Marx's theory of surplus-value in Volume I.

Bellofiore also argues that further textual evidence to support his interpretation (real wage given, not the money wage) is provided by *Chapter 23 of Volume I* ('Simple Reproduction').[34] It is here, according to Bellofiore, that Marx makes the transition from the *micro* perspective of individual capitals to the *macro* perspective of the total social capital. Bellofiore argues that the micro perspective is to take the *money wage* as given and the macro perspective is to take the *real wage* as given, and that the money wage micro perspective hides the essential class relation, which is the division of the net *real output* between workers and capitalists. From the macro perspective, the capitalist class as a whole unconsciously decides (somehow) a definite real wage for the working class as a whole and capitalists appropriate the rest of the net output. Therefore, according to Bellofiore, the main goal of Marx's theory is to explain the class division of the *net output*, and for that purpose the real wage should be taken as given.

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33   Bellofiore 2004a, p. 194.
34   Bellofiore 2004, pp. 202–4.

I argue, to the contrary, that the main goal of Marx's theory is *not* to explain the division of the *net output*, but rather to explain the production of *ΔM*, and more precisely to explain the *actual total ΔM* (more on this point in the conclusion). For that purpose, the appropriate initial given is the actual initial money capital advanced (M), a component of which is variable capital or the actual money wage advanced, not a hypothetical money wage that is proportional to the labour time required to produce a given real wage.

Bellofiore argues that the assumption of the money wage 'hides the essential class relation'. I argue, to the contrary, that the assumption of the real wage makes it impossible to explain and demystify the false appearance of money wages – that all labour is paid labour. For that explanation and demystification, one needs to assume a given *money wage*, which, along with the MELT determines necessary labour time (NLT = V/m), and thereby reveals the existence of unpaid labour (the essential class relation). Marx's theory shows that workers spend only a part of their working day producing an equivalent to the money wage paid by capitalists, and spend the rest of their working day performing unpaid labour and producing surplus-value for capitalists.

Furthermore, I argue that Marx did not change his perspective from micro to macro in Chapter 23. I think I have demonstrated above that Marx's perspective in Volume I was macroeconomic from the beginning (at least from Chapter 4 which presents the *'general* formula for capital' as the logical framework for his theory of the total surplus-value). Marx's theory of surplus-value in Volume I is a macro theory of the actual total surplus-value produced by the working class as a whole, and the reason Marx took the actual variable capital (money wage) as given in Volume I is that he wanted to explain the actual total money surplus-value (ΔM), not a hypothetical total surplus-value that is proportional to the labour time required to produce the surplus goods. The main point of Chapter 23 is not to switch from a micro to a macro perspective, but is instead to argue that the money variable capital that is advanced by capitalists to workers, which appears to come from capitalists' own savings and funds, actually comes from value produced by the workers themselves in previous periods, and this fact becomes clear if capitalist production is viewed as a continuous repeated process rather than a single isolated circuit.

> Variable capital ... *loses its character of a value advanced out of the capitalist's funds* only when we view the process of capitalist production in the flow of its constant renewal.[35]

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35   Marx 1977a, p. 714.

This main point is repeated and elaborated in Chapter 24 ('The Conversion of Surplus-Value into Capital').

> The original capital was formed by the advance of £10,000. Where did its owner get it from? 'From his own labour and that of his forefathers', is the unanimous answer of the spokesman of political economy ... But it is quite otherwise with regard to the additional capital of £2,000. We know perfectly well how that originated. There is not one single atom of its value that does not owe its existence to unpaid labour.[36]

Conclusion

In the conclusion of his paper, Bellofiore emphasises again that the main goal of Marx's theory is to explain the class division of the net *real output*, and for this purpose the real wage should be taken as given.[37] However, I have argued throughout this book that the analytical framework of Marx's theory is the *circuit of money capital*, and that the main goal of Marx's theory is not to explain the division of the net output, but instead to explain the production of ΔM, i.e., to explain how the initial M at the beginning of the circuit of money capital becomes M+ΔM at the end of the circuit. And for this purpose, the appropriate initial given is the quantity of M at the beginning of the circuit, not the real wage.

It is true that capitalism is like all other class societies in the sense that the workers' means of subsistence is only a part of the products that they themselves produce, and it is important to recognise this fundamental similarity between capitalism and other class societies. However, it is even more important to understand the *historically specific* features of capitalism, and especially ΔM above all else. As we saw in Chapter 4, Marx called the relation between the *M which is presupposed to production* (including variable capital) and the M′ and ΔM that result from the 'all embracing and decisive factor ... of capital production'.[38]

Therefore, I come to the same conclusions as before: (1) Marx's theory of surplus-value in Volume I is a *macro* theory about the *total surplus-value* produced by the working class as a whole for the capitalist class as a whole; (2)

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36   Marx 1977a, p. 728.

37   Bellofiore 2004a, pp. 207–8.

38   Marx MECW, v. 32, p. 318 [TSV, v. III, p. 131].

the total surplus-value is determined logically prior to its division into individual parts because all the individual parts of surplus-value *come from the same source* – the surplus-labour of workers; (3) the *circuit of money capital* is the logical framework of Marx's theory of surplus-value and the initial money capital M at the beginning of the circuit is the initial given in the theory of the increment of money ΔM that results at the end of the circuit; (4) one component of the initial money capital M that is taken as given is variable capital, the *actual money wage* advanced to purchase labour power at the beginning of the circuit, which is subtracted from the actual new value produced in order to determine the actual total surplus-value produced; and (5) Marx also took as given in Volume I the *real wage* (a quantity of wage goods) in order to provide a *partial explanation* of the given actual variable capital.

PART 3

Conclusion

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Conclusion

I hope that the main conclusions of this book are sufficiently clear by now. I will briefly summarise, and also offer a radical suggestion for consensus, and close with some comments about the explanatory power of Marx's theory.

In the first place, I think it is clear that Marx's theory is constructed in terms of *two main levels of abstraction* – the *production* of surplus-value and the *distribution* of surplus-value (i.e., capital in general and competition) – and the production of surplus-value is theorised prior to the distribution of surplus-value, which means that the *total surplus-value* in the economy as a whole *is determined logically prior* to its division into individual parts. This predetermined total amount of surplus-value is then a presupposition in the subsequent theory of the distribution of surplus-value, which is about how the predetermined total surplus-value is divided into individual parts – first the equalisation of the rate of profit across industries and then the further division of the total surplus-value into industrial profit, commercial profit, interest, and rent.

With respect to the 'transformation problem', in Marx's theory of prices of production in Part 2 of Volume III, the total annual surplus-value produced in the economy as a whole is taken as a predetermined given, as determined in Volumes I and II, and this predetermined total annual surplus-value is used to determine the annual rate of profit ($R = S / M$), which in turn is a determinant of prices of production ($PP_i = (C_i + V_i)(1 + R)$). As a result, the predetermined total surplus-value is distributed to individual industries in such a way that all industries receive the same rate of profit.

I think the textual evidence to support this 'two levels of abstraction' interpretation of Marx's logical method and the prior determination of the total surplus-value is overwhelming and conclusive. We saw in Chapter 3 that Marx employed this logical structure of the production and distribution of surplus-value in all the drafts of *Capital*. He first developed this logical structure in the *Grundrisse*, and he credited Hegel for the inspiration for this aspect of his logical method. Marx further developed this logical structure in the remarkable *Manuscript of 1861–63*, in which a fortuitous reading of Rodbertus's book on Ricardo's theory of rent stimulated Marx to develop his own theory of rent, which in turn required that he develop his theory of prices of production and the equalisation of the rate of profit, which he did in this manuscript. He also drafted for the first time in this manuscript his theory of interest and commercial profit, as other parts of the total surplus-value. Then in the *Manuscript of 1864–65*, he wrote a full draft of his theory of the distribution of surplus-

value (what we know as Volume III of *Capital*). In all these drafts, the crucial methodological premise of the prior determination of the total surplus-value is emphasised and utilised in his theory of the distribution of surplus-value and the division of the total surplus-value into individual parts. And Marx considered this particular aspect of his logical method one of the two or three 'best points' of *Capital*.

Another important characteristic of Marx's logical method, which follows from the prior determination of the total surplus-value, is that Marx's theory in all three volumes of *Capital* is about a *single system*, the actual capitalist economy, which is assumed to be in long-run equilibrium, and which is theorised first at the macro level (in order to determine the total amount surplus-value) and then is analysed at the micro level (in order to determine the division of the total surplus-value into individual parts). Marx's theory is not about 'two systems' – a hypothetical 'value economy' in Volume I and then the actual capitalist economy in Volume III (as in the standard interpretation). Marx's theory is about the actual capitalist economic system from beginning to end.

Therefore, the total surplus-value that is determined in Volumes I and II is the *actual* total surplus-value produced in the economy as a whole; it is not a hypothetical total surplus-value, which is assumed to be equal to the value of surplus goods, and which later has to be transformed into the actual total profit in Volume III (as in the standard interpretation). Instead, Marx's theory is about the actual total surplus-value from the beginning in Volume I. This must be true, in order to be consistent with the fundamental premise of Marx's theory of the prior determination of the total surplus-value, discussed in the previous section. The prior determination of the total surplus-value is logically possible *only if* Volume I is about the actual capitalist economy and the actual total surplus-value. And it is.

Another important conclusion of this book is that the logical framework for Marx's theory of surplus-value is the *circuit of money capital* ($\mathbf{M} - \mathbf{C} \ldots \mathbf{P} \ldots \mathbf{C}' - \mathbf{M}{+}\mathbf{\Delta M}$), and this logical framework implies that the initial M at the beginning of the circuit is the 'given data' for Marx's theory of M′ and ΔM. The amount of money capital advanced by capitalists is assumed to be known and the main question of Marx's theory is how this pre-existing known quantity of money capital becomes more money. And for this all-important question, the appropriate given is the initial M advanced at the beginning of the circuit, which must be recovered before any surplus-value is produced.

And the crucial point with respect to the 'transformation problem' is that, in Marx's theory of prices of production in Volume III, the *same quantities of constant capital and variable capital* are taken as given as in the Volume I theory of the total surplus-value – the *actual* quantities of money capital advanced

to purchase means of production and labour power in the beginning of the circuit of money capital. The only difference is that in Volume III the *individual* quantities of constant capital and variable capital advanced are also taken as given, in addition to the total constant capital and variable capital that are taken as given in Volume I (i.e., the M_i's in each industry, in addition to the total M for the economy as a whole). For this question, the appropriate initial givens are the initial M_i's in each industry which have to be recovered before any surplus-value can be distributed.

That is why Marx did *not* 'fail to transform the inputs' of constant capital and variable capital from values to prices of production – because no such transformation is necessary or appropriate in Marx's theory. The inputs of constant capital and variable capital in Marx's theory of prices of production in Volume III are the *same actual quantities of money capital* advanced in the real capitalist economy that are inputs in Marx's theory of total surplus-value in Volume I. There are not 'two systems' in Marx's theory – a 'value system' and a 'price system' – with two sets of magnitudes of constant capital and variable capital. Instead, there is only one system in Marx's theory, the actual capitalist economy, with one set of magnitudes of constant capital and variable capital, which is first analysed at the aggregate level and then at the individual industry level. Therefore, there is no 'transformation' of constant capital and variable capital that is supposed to be made in Marx's theory. Constant capital and variable capital are the same actual quantities of money capital at both levels of abstraction.

The textual evidence presented in Chapter 4 to support this 'monetary' interpretation of the initial givens in Marx's theory is not as clear-cut and unambiguous as the evidence presented in Chapter 3 on the 'two levels of abstraction' and the prior determination of the total surplus-value, although I think that the entire body of evidence related to the initial givens clearly favours the 'monetary' interpretation presented here. The circuit of money capital by itself is strong evidence that the initial givens in Marx's theory is the quantity of money capital advanced at the beginning of this circuit. In order to explain the actual total surplus-value (ΔM) at the end of the circuit, the actual initial M (= C + V) at the beginning of the circuit is taken as given, both as a 'cost of production' and also as components of the value and surplus-value produced.

In addition, there are many passages in all the drafts of *Capital* in which Marx stated explicitly that the initial M in the circuit of money capital is *'given'* or *'presupposed'*. For example, the passages in the *Grundrisse* and the *Theories of Surplus-Value* that the 'decisive factor' of capitalist production is the quantitative relation between the quantity of money capital *'presupposed*

to production' (M) and the greater quantity of money capital that results from production (M′ = M + ΔM), and the passage in the 'Results' that a given amount of money as the *'point of departure'* for Marx's theory of how this initial M becomes M + ΔM. There are also numerous passages in which Marx stated or assumed that the '*cost price is the same*' in the determination of both value and prices of production (e.g., the 'missing paragraph' that Engels left out of Chapter 9 of Volume III), and thus no 'transformation' of the cost price is necessary or appropriate in Marx's theory. There is only one cost price in Marx's theory – the actual cost prices, which is taken as given at both levels of abstraction. And in other passages, Marx distinguished between the value of 'simple commodities' and the value of '*commodities as products of capital*', and the main difference (for our purposes) is that the 'transferred value' component of the *value* of *commodities produced by capital* is the *actual money constant capital advanced* to purchase the means of production utilised in the production of these commodities by capital, which is equal to the price of production of the means of production, not their value.

I acknowledge that there are also some passages in *Capital* that could be interpreted (as in the standard interpretation) to provide contrary evidence, i.e., to mean that the magnitudes of constant capital and variable capital in Volume I are *determined solely* by the labour times required to produce the means of production and means of subsistence (i.e., are proportional to these labour times). However, this standard interpretation of these passages is contradicted by all the other textual evidence presented in Chapter 4 and summarised in the preceding paragraph. The standard interpretation of these passages also means that constant capital and variable capital in Volume I are *hypothetical* quantities in a hypothetical 'value economy', instead of actual quantities of money capital in the actual capitalist economy.

Furthermore, the standard interpretation of these passages regarding the determination of constant capital and variable capital also contradicts Marx's method of 'two levels of abstraction' and the prior determination of the total surplus-value. If constant capital and variable capital are hypothetical quantities in Volume I that must be transformed into actual quantities in Volume III, then the total surplus-value and the 'value rate of profit' determined in Volume I are also hypothetical quantities, which also must be transformed into the actual total profit and the price rate of profit in Volume III, and thus cannot be taken as given in Marx's theory of the distribution of surplus-value and prices of production in Volume III. In general, the standard interpretation of these passages and the determination of constant capital and variable capital makes Marx's theory *logically contradictory*, and implies that Marx made fundamental logical mistakes in his theory of prices of production.

However, I have argued that the controversial passages could also be *interpreted in another way*, and in a way that is consistent with all the other textual evidence presented in Chapter 4 – that the actual quantities of constant capital and variable capital are taken as given in the theory of surplus-value in Volume I, and these controversial passages present a provisional, *partial explanation* of these given actual quantities of money capital (that they depend primarily, but not entirely, on the values of the means of production and means of subsistence). This partial explanation is supplemented in Volume III, in which it is shown that the given actual quantities of constant capital and variable are (tend to be) equal to the *prices of production* of the means of production and means of subsistence, not their values. However, this *more complete explanation* of these given actual quantities in Volume III *does not change the quantities themselves*; what changes in Volume III is the *explanation* of these given actual quantities – from a partial explanation to a more complete one. Thus, 'the cost price is the same' in the determination of both value and prices of production, and Marx did not 'fail' to change the cost price, because no such change is necessary or appropriate in his theory.

This 'monetary' interpretation of the initial givens in Marx's theory is also consistent with the basic premise of Marx's theory of the prior determination of the total surplus-value, discussed in Chapter 3. If one assumes the 'monetary' interpretation of the initial givens, then it is possible to determine the total surplus-value prior to its division into individual parts. In general, the 'monetary' interpretation of the initial givens in Marx's theory presented in this book makes it possible to understand Marx's theory as a *logically consistent whole*.

As discussed at the end of Chapter 4, it is a widely accepted principle in the field of hermeneutics that, when the textual evidence for different interpretations of a text is ambiguous and not clear-cut and decisive one way or the other, then the preferred interpretation is the one that *makes the text as a whole more internally logically consistent*. I suggest again that this principle should be applied to these different interpretations of the initial givens in Marx's theory. The preferred interpretation is the one that makes Marx's theory more of a logically consistent whole, and that interpretation is the monetary interpretation presented here. Why continue to insist on the standard interpretation of the initial givens in Marx's theory, and the logical contradictions that result, when there is an alternative interpretation, with substantial textual support, that does not have these contradictions?

Part II of this book examined various alternatives to the standard interpretation of Marx's theory that have been presented in recent decades: Shaikh's interpretation, the New Interpretation, the Temporal Single System Interpre-

tation, the Rethinking Marxism interpretation, and the Fine and Saad-Filho interpretation. All these interpretations have made important contributions to our understanding of Marx's theory. However, they all ultimately make the same mistinterpretation: they all, for one reason or another, abandon Marx's theory of the rate of profit and instead determine the rate of profit as it is determined in Sraffian theory – by physical quantities of inputs and outputs – rather than by the surplus labour of workers and the quantities of money capital advanced at the beginning of the circuit of capital. Marx's theory of the total surplus-value plays no role in their interpretation of the determination of the rate of profit. I argued in these chapters that it is not necessary to abandon Marx's theory of the rate of profit; Marx's theory can be reasonably interpreted in such a way, and with substantial textual evidence, that Marx's theory of the rate of profit is logically consistent and complete.

To those who would still insist that my interpretation is a fundamental misunderstanding of Marx's theory and that there is no way that one could reasonably interpret Marx's theory as I do, I would make the following radical suggestion for consensus: there are at least significant threads of this 'monetary' interpretation of constant capital and variable capital throughout the various drafts of *Capital* (as discussed at length in this book), even if Marx himself may not have been completely clear about it or may have thought that constant capital and variable capital should be derived from given physical quantities, and thus that their magnitudes should change from Volume I to Volume III, as in the standard interpretation. If this were the case, then I would suggest that we *revise* Marx's theory, or *reconstruct* it, along the lines of these significant threads in his drafts and the 'monetary' interpretation presented here – that the actual magnitudes of constant capital and variable capital are initially presupposed in the theory of surplus-value and prices of production and then are eventually explained in successive stages by the values and the prices of production of the presupposed quantities of means of production and means of subsistence. As Foley put it in the conclusion to his influential 1982 paper: if the money wage is not what Marx meant by variable capital, then the money wage is what Marx *should have meant*. I would add that the same argument also applies as well to constant capital, the other component of the initial money capital advanced at the beginning of the circuit of money capital: if the actual money capital advanced to purchase means of production is not what Marx meant by constant capital, then this is what Marx *should have meant*. With this one revision, which is entirely reasonable and for which there is substantial textual evidence, Marx's theory would be transformed from a logically contradictory mess to a logically coherent whole. I would hope that there would be no objections to such a reconstruction, which would

make Marx's theory logically consistent and would make possible its further development.

Another important conclusion of this book is that Marx's logical method is very different from the logical method of Sraffian theory. Instead of the circuit of money capital:

$$M – C \ldots P \ldots C' – (M + \Delta M)$$

the Sraffian logical method is in terms of physical inputs and outputs, relative unit prices, and the rate of profit, which I have symbolised as:

$$Q \ldots P \ldots C'$$

According to the Sraffian method, money is either missing altogether or plays no essential role. It is as if *no money capital is advanced* in capitalist economies to purchase means of production and labour power, and as if ΔM were not the main goal of capitalist economies. Instead of taking the initial money capital as given in order to determine M' and ΔM, the Sraffian method takes the physical quantities of inputs and outputs as given in order to determine simultaneously input and output prices and the rate of profit that will reproduce the given physical quantities.

As discussed in Chapter 6, because of the Sraffian logical method of physical quantities and simultaneous determination, it is very difficult to incorporate into Sraffian theory two important characteristics of modern capitalist economies – fixed capital and unequal turnover periods across industries. In order to incorporate fixed capital into Sraffian theory, fixed capital is essentially treated as circulating capital by assuming that all machines only last one period and the 'products' of each period include not only regular products, but also 'partially used machines' as 'joint products', whose prices are determined simultaneously with regular inputs and outputs. Similarly, in order to incorporate unequal turnover periods, it is assumed that the turnover period for all industries are converted into multiples of a hypothetical 'unit time period' (e.g., Steedman's week), and that the products of each period include not only regular products and 'partially used machines', but also 'partially completed products', whose prices are determined simultaneously with all the above. Thus, the rate of profit that is determined by Sraffian theory is not the actual annual rate of profit (as it is in Marx's theory), but is instead a hypothetical rate of profit for this hypothetical 'unit time period' and assumes that profit is paid on 'partially used machines' and 'partially completed products' even though these hypothetical 'joint products' are not actually sold.

Marx's theory, on the other hand, because it is not based on given physical quantities and simultaneous determination, has no problem incorporating these important characteristics of capitalist economies. Since the initial givens in Marx's theory are quantities of money capital, fixed constant capital is also taken as given, as the actual quantities of money capital advanced to purchase long-lasting means of production, and this given quantity of fixed constant capital is used to determine the annual depreciation costs by dividing this given quantity by the expected lifetimes of the means of production. There is no necessity to treat 'partially used machines' as 'joint products', and determine their prices simultaneously with the prices of regular products. Similarly, since the initial money costs are taken as given and not determined simultaneously with output prices, there is no need to assume that all industries have the same turnover period or that unequal turnover periods can be converted into multiples of a hypothetical 'unit time period'; and there is no necessity to treat 'partially completed products' as 'joint products', and determine their prices simultaneously along with the prices regular products (and 'partially used machines'). Instead, the actual money costs are taken as given in Marx's theory, and these given money costs are used to sequentially determine the prices of the outputs produced with these inputs. For all these reasons, I think the 'money capital' logical method of Marx's theory is more realistic and more appropriate than the 'physical quantities' method of Sraffian theory for analysing modern capitalist economies, whose overriding aim is to convert a given pre-existing M into M+ΔM.

In conclusion, I would also like to emphasise the impressive explanatory power of Marx's labour theory of surplus-value, especially compared to other economic theories, including Sraffian theory. Marx's theory of surplus-value is able to explain the following important and wide-ranging phenomena that are characteristic of capitalist economies: the necessity of *money* as the general equivalent of commodities, *conflicts* between capitalists and workers over wages, over the length of the working day, and over the intensity of the workers' labour, endogenous *technological change*, increasing *concentration of capital*, increasing *income inequality*, trends and fluctuations in the *rate of profit* over time, endogenous causes of *economic crises*, etc. (For an extensive discussion of the explanatory power of Marx's theory of surplus-value, see Moseley 1995b, which is a response to an empirical appraisal of Marx's theory by the late Mark Blaug, a prominent mainstream historian of economic thought and economic methodologist; Blaug 1980). This explanatory power of Marx's theory of surplus-value is especially impressive when compared to the marginal productivity theory of interest (or the 'rental rate of capital'), which is the primary mainstream alternative to Marx's theory of surplus-value, and which cannot explain

any of the important phenomena of capitalist economies listed above which are explained by Marx's theory (to say nothing about the insoluble logical problems of marginal productivity theory).[1]

I would also argue that the empirical explanatory power of Marx's theory is also greater than that of Sraffian theory. I have already mentioned the absence of a theory of money in Sraffian theory and the difficulties of incorporating fixed capital and unequal turnover times. In addition, Sraffian theory is also not able to satisfactorily explain the important conflicts between capitalists and workers over the length of the working day and the intensity of labour. Steedman has argued that Sraffian theory can explain these conflicts, but he does so in a way that assumes that *the labour input remains the same* and that the quantity of output increases for a *given quantity of labour input*.[2] The unit of labour is assumed to be a *year*, and thus an increase in the working day or in the intensity of labour during a year is still one year of labour and thus there is *no increase in the labour input*. But surely, if the working day or the intensity of labour is increased, then the quantity of labour input has *in fact* increased and that is the reason for the increase of output. The reason Sraffian theory cannot reasonably explain these conflicts is that labour in Sraffian theory is *not a producer of value*, but is instead considered *only as a cost*, like all other costs (as discussed in Chapter 6). In such a theory, an increase of labour only increases cost; it does not produce additional value and thus does not provide an incentive for capitalists to try to increase the working day or the intensity of labour. In Steedman's analysis, *paid labour* does not increase and thus the labour input does not increase (since labour is only paid labour in Sraffian theory). But in reality, an increase in the working day or in the intensity of labour does result in an increase of labour input, but this increase of labour input is *unpaid labour*, which Marx's theory reveals as the source of surplus-value and Sraffian theory misses altogether. Finally, Sraffian theory is primarily a static theory of relative prices in a given period, and thus has little to say about the long-run dynamics of capitalist economies. Therefore, again, Marx's theory would seem to be a more appropriate theory for analysing modern capitalist economies than Sraffian theory.

This impressive explanatory power of Marx's theory has been largely ignored by economists for over a century, self-proclaimed as 'justified' because of the alleged 'logical contradiction' of the 'transformation problem'. Based on the

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1   For a discussion of the logical problems in marginal productivity theory, see Moseley 2012a and 2012b.

2   Steedman 1977, Chapter 6.

arguments of this book, I think it can be reasonably concluded that Marx's theory, correctly interpreted, does not have this logical contradiction, and thus economists (and others) should consider more seriously the impressive explanatory power of Marx's theory, especially in comparison to other economic theories.

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