palgrave
macmillan

An Outline of the Dialectic of Capital

Volume 1

Thomas T. Sekine

An Outline of the Dialectic of Capital

Volume 1

Thomas T. Sekine
Professor of Economics
School of Commerce
Aichi Gakuin University
Aichiken, Japan

Contents

Contents of Volume 2

Preface

This is a condensed version of *The Dialectic of Capital*, which I published privately in Japan in 1984 and 1986 in two volumes. That book was written for a very restricted audience, and so has remained virtually unknown beyond my circle of personal acquaintances. The present version, *An Outline of the Dialectic of Capital*, is intended for a much broader reading public. I have changed the length and the style of presentation accordingly. I have also taken this opportunity to correct errors and tighten the argument in various places. In both books, however, I have strictly abided by Kozo Uno's approach to Marxian economics. For I believe that that approach places Marxian economics on a firm methodological foundation. I will expand on this point in the Introduction.

In the preparation of this book I have incurred a huge debt to many persons. I am particularly indebted to my former colleague at York University in Canada, Professor Robert Albritton, who has always provided me with the strongest help and support at both intellectual and personal levels. Practically all of my writings in this field undergo his scrutiny, and benefit from his insight and wisdom, before appearing in print. The present book is no exception. Professor John R. Bell of Seneca College, Toronto, applied his expert editorial skills to make my inadequate English readable, sacrificing many of his valuable hours which he could otherwise have spent more fruitfully. Generations of York University students, including him, have contributed significantly towards improved expositions of the contents of this book. For it was used as a text in many classes over the years. Some of them have later joined the Canadian Uno Group of which Albritton and Bell are the leaders. Among the familiar members of the group are Marc Weinstein (York University), Brian Maclean (Laurentian University), Colin Duncan (Queen's University), Stephen Strople (University of New Brunswick), Ricardo Duchesne (University of New Brunswick), Rafael Indart (Government of Ontario), Makoto Maruyama (University of Tokyo), Randall Terada (York University), Stephanos Kourkoulakos (York University), Eric Wright (Ryerson Polytechnic University) and Richard Westra (Queen's University). I have been privileged to maintain a close and enduring association with these talented young persons. To all of those named above I wish to express my heart-felt appreciation for their

long-standing loyalty and support. I would also like to take this opportunity to thank Professor Makoto Itoh, of the University of Tokyo, who was instrumental in bringing the manuscript of this book to the attention of the publisher. On the practical side, I would like to thank my son, Kevin, who competently assisted me in word-processing the original manuscript. Needless to say, none of the persons named above bears may responsibility for whatever error might remain in this book, given its extensive coverage.

At this point I would like to call the attention of the reader to the following three items. First, my copy-editor has kindly worked with me trying to render the text of this book more gender-neutral. We have found, however, that any such effort would make my already strained English even harder to read. Besides, as I have emphasised in the Introduction, the dialectic of capital copies the narrative of capital itself, which is notoriously patriarchal. I feel, therefore, that I ought not to represent capital as being more gender-neutral and innocuous than it actually is by the use of "politically correct" language. That, in part, explains the reason why the conceivably offensive he/his/him is retained in this book. But the reader is, of course, free to read it as she/her/her, if at any point that turns out to be more palatable to him or her. Secondly, the reader will find that some paragraphs of the text appear in smaller print. These "supplement" the more essential paragraphs in larger print, and can be skipped, particularly in the first reading, without breaking the train of thought. This style of presentation I have adopted from some of Knut Wicksell's books, as I have myself found it quite effective in a theory book of this kind. Thirdly, the text of the dialectic is presented in a triadic form, such that the whole is divided into three parts, each part into three chapters, each chapter into three sections, and each section into three subsections. Each subsection is numbered and titled as, for example, "4.2.1 The Labour Theory of Value". Such a subsection itself contains three distinct paragraph-groups which are neither numbered nor titled. When reference is made in the text to such a paragraph-group, it will be indicated by "a, b, c" in the order of appearance. Thus, for example, "Subsection 4.2.1,b" indicates the second paragraph-group of subsection 4.2.1.

Finally, I wish to humbly dedicate this book to the memory of my great teacher, Kozo Uno, whose decisive influence has been my lifelong inspiration.

Tokyo, February 1997 THOMAS T. SEKINE

Introduction

The dialectic of capital is a systematic reformulation of Marxian[1] economic theory. But it does not intend to be either a faithful or an authoritative account of Marx's economic thought. Though greatly inspired by his seminal contributions, I am not blind to certain imperfections in Marx's own writings, and do not see it as my task in this book to defend them all. I rather believe that Marxian economic theory needs considerable refinement in terms of logical precision and technical sophistication, before it can be fully defended. That being said, I should also make clear that Marxian economics is the only one which is completely free from bourgeois-liberal biases.

I wish to suggest that the "dialectic of capital" brings Marxian economic theory to completion, in just the same way as Hegel's "logic" brought the philosophy of his time to completion.[2] A statement of this kind is, of course, likely to raise hackles and cause serious misunderstandings, unless it is accompanied by a detailed commentary on its meaning. For not only do people understand different things by "economic theory", but they also diverge widely in their evaluation of what constitutes the enduring value of Marx's works. Thus, the sole purpose of the present introduction is to bring to light the intended meaning of the statement in question.

1 TWO TYPES OF MARXISM

Marx is generally regarded as a revolutionary socialist who was also versed in economics and philosophy. Indeed, he was a person of extraordinary calibre who could successfully combine scholarly accomplishment with political activism. In his person the two elements, often distinguished as "theory" and "practice", were inextricably linked and nourished each other. Thus, many of those who admire the greatness of Marx wish to imitate him by reproducing his life-style on a smaller scale. In other words, they each try to become a reduced version of Marx, by combining "theory and practice" in the same way as he did, if not in exactly the same proportion.

This, however, has turned out to be a futile attempt. For among the very large population of Marxists, it is difficult to find a well-balanced,

small Marx, i.e. an individual who can be described as "70 per cent Marx", "half-Marx" or "30 per cent Marx". Moreover, such an individual, if he existed, would be of little use. For the person would be too mediocre to be a genius of Marx's calibre, nor would he be likely to distinguish himself in any particular field of endeavour. Experience shows that a successful Marxist is most likely to be one who has learned from Marx a few things well, and has tried to excel in them by going beyond him, rather than by trying to reproduce all of his qualities only to become a mediocre mini-Marx.[3]

Indeed, the vain attempt by many to be small Marxes has not only resulted in a sad impoverishment of Marxism, but has also led, in the worst cases, to the notorious cult of personality which contributed to the downfall of Marxism in the East. Uno was aware of this danger, and was determined not to fall into that trap. He asserted that only geniuses could transcend the division of labour and be good in all areas, a feat which ordinary mortals could not hope to imitate. In his case, he decided to immerse himself in the economics of Marx, having recognised more than anyone else the greatness of Marx as an economist. Needless to say, his approach was not kindly received by the conventional Marxism of his day, which duly denounced him as a heretic.

Yet, in retrospect, he was right. For now that Marxism is in crisis, who is adequately equipped to rescue it from decay and oblivion? Certainly not the leader of a remaining communist state or movement, nor an academic dilettante masquerading as a professional revolutionary. Only those who can demonstrate the truth and excellence of Marx's "theory" can hope to reaffirm its enduring worth. Uno is clearly one of them. For, unlike the majority of contemporary Marxists, who all too soon dismiss Marx's economics as antiquarian, if not obsolete, he has consistently upheld its worth as the only version of economics free of bourgeois biases. In other words, Uno has traced the greatness of Marx as an economist to the latter's critique of bourgeois-liberal social science, including economics. This is the topic which I wish to elaborate on in what follows.

2. ECONOMICS IS NOT A NATURAL SCIENCE

It is widely believed that, since economics is a "science", it cannot be radically different from physics or other forms of natural science, and that the knowledge of economics can be technically utilised to formulate economic policies, in much the same way as natural scientific

knowledge can be applied, by way of medicine, engineering, etc., towards the improvement of our lives. Not only do lay persons subscribe to this popular conception, but so also do many economists. Proudly and with confidence, they abide by this erroneous view, which amounts to the most pronounced form of "reductionism". By the latter I mean, in this context, the conception that there is only one scientific method, the one which is practised in physics. All other sciences must, according to this view, endeavour to follow the same method as far as possible.[4] I wish to argue, on the contrary, that nature and society are two altogether different things, and hence that we need different methods to study them.[5]

Let us first consider what the study of nature involves. Since we are ourselves not the creator of nature, we cannot hope to know it totally. That is to say, we can never really lay bare the inner logic, or programme, that ultimately governs the motion of nature. Although we are part of nature, we are so only as natural objects; we are not, for that reason, any more privy to the working of natural laws. All we can do, then, is to observe nature from the outside in various specific contexts, and find there some of the regularities of its motion. In that way, we will never gain more than a partial knowledge of nature. Sometimes our knowledge is good enough to enable us to make a reasonably accurate "prediction" of what nature might do next, in the same or a similar context. It is this kind of "predictive" knowledge that natural science provides. I am, however, certain that the accumulation of this type of knowledge will not enable us to alter fundamentally the laws of nature, i.e. to repudiate nature as it is and create, by a "revolution" or some such thing, one that is more congenial to our needs and purposes.

For instance, we may be able to predict, with a fair degree of accuracy, that an earthquake of a certain magnitude is about to occur in a given region. In the light of that knowledge, we may prepare evacuation plans or take other appropriate steps with a view to minimising the harm to ourselves. We cannot, however, stop the earthquake itself from occurring, control its intensity, or let it happen at another time or place. We must accept what nature has decided to do without consulting us, and do our best, on our part, to circumvent the harm that will befall us as a consequence. In other words, it is a matter of practical wisdom to "conform" to the order of nature, and to "piggyback" on its blind forces, if we can. Sometimes we talk of "taming", "controlling" or even "conquering" nature. But that is only a matter of rhetoric. If we are so deluded as to believe that we can force nature to adapt to

us, rather than accepting that we must adapt to it, we shall be punished in the end by ecological disasters and other serious calamities, as we have of late been learning so painfully. Thus, we must approach nature, in which we are all "embedded", with circumspection, respect and humility.

In summary, we can never know nature from the inside out and thus control it fully. We can only observe it from the outside and learn the regularity of its motion in various specific contexts, so as to be able to conjecture what it might do next. Since we cannot penetrate to the thing-in-itself (the inner "programme") of nature, we would be wise to conform to its motion carefully, and avoid the temptation to become arrogant. "Conformism" is definitely the wisest course in this context.

The wisdom of conformism which thus prevails in our relationship to nature must, however, be rejected as soon as we shift our attention from nature to society. Society is that which we ourselves make up. We are its creator, and we are ultimately responsible for it. In other words, we are (and ought to be) fully privy to its inner logic, i.e. its structural programme. No society is irrevocably given to us as a "natural order" such that we may only conform to it. It would, therefore, be hypocritical for us to claim that it is something which is beyond our grasp and control, or that its regularities must be detected only from the outside by repeated observation and experiment. Why do we need to "hypothesise" its laws and pretend to test them empirically, when we can, through disciplined thought, comprehend them perfectly well? That would amount to an unsound invitation to conformism, i.e. the abdication of responsibility for the improvement of our society. Instead of conjuring up such a fantasy, we should ask ourselves a much more candid and straightforward question: "What are we doing here? Should we continue to do what we do?" The method of inquiry into society is thus altogether different from that into nature.

Yet, our attention is often deliberately diverted from this obvious fact. Why? The reason is that it suits the ruling classes of any society to make believe that the existing social order is an extension of the natural order or is ordained by divine wisdom. The doctrine of the divine right of kings is perhaps the best known example of such a ruling class ideology. If the existing social order is either nature-imposed or God-given, who may challenge it or criticise it? Similar tricks have been employed in all class societies. Bourgeois society, too, is a class society, and it is in the interest of its ruling class to pretend that its market-based economic order is natural, objective and inviolable. To say that economics is scientific in the same sense as physics is is to

make believe that capitalism, or bourgeois society, is as immutable as nature, and hence that we can never know or suspend its inner programme.

If we ever allow ourselves to be tricked into adopting such a belief, all criticisms of bourgeois society will effectively be foreclosed. Yet, many economists have inadvertently fallen into that trap, unaware of the fact that, by the time they embrace the natural-scientific outlook of physics-like economics, they are already irrevocably enthralled and enslaved by capitalism. That is to say, they have become willing spokespersons of bourgeois-liberal ideology. What they do in that capacity is no longer to lay bare how capitalist society is programmed to operate, but to counsel how we can most effectively conform to it and make the best use of it, i.e. be happy and complacent in it. That is the reason why *the more they learn economics, the more capitalist-minded they inevitably become.* Only Marx knew this danger from the beginning, and thus undertook to criticise the opium-like science of bourgeois political economy.

3. SIGNIFICANCE OF ECONOMIC THEORY

Classical political economy believes that all societies evolve to capitalist society, or that they are all, at least implicitly, capitalist societies. A society, according to this bourgeois-liberal dogma, consists of individuals whose behaviour is overwhelmingly governed by their "economic motives",[6] i.e. tendencies to maximise gains and minimise losses to the extent that these are quantifiable. If, in pre-capitalist societies, people did not quite behave as their economic motives dictated, then there can be only one explanation. According to the liberal view, they were just too primitive or underdeveloped to take the question of gains and losses seriously. Over many years, however, even the most obtuse will awake to the calculus of gains and losses, so that the evolution of all societies to capitalist society is inevitable. A capitalist society, the story continues to assert, is governed by the objective laws of the market which harmonise diverse interests, and achieve the most rational form of economic organisation possible.

This kind of outlook, the bourgeois-liberal conception of history, is radically contradicted by empirical history, as Karl Polanyi and others have shown. Human history did not so peacefully evolve into capitalism. The process of primitive accumulation which ushered in the era of capitalism was, in fact, replete with violence, swindles and political

repression. But the reminder of such empirical facts does not shake the liberal dogma at all, since it is by nature ahistorical.

Capital is not historical, though we, human beings, are. To explain why this is the case, however, we must understand exactly where capital comes from. Since Marx, we have become used to talking about "capital", but it has not always been abundantly clear what this capital really is, for hardly anyone has bothered to explain its conceptual origin. This major omission has been a stumbling block to the sound development of Marxian economics. It is my view that we obtain the concept of capital in exactly the same way as Feuerbach says we obtain the concept of God.[7] According to Feuerbach, God did not create us in his image, but rather it is we who created him in our own image. Since we human beings are finite, we are good, wise and powerful to some extent, but never infinitely so. If, however, these wonderful qualities of ours are made infinite and absolute, and are extrapolated as attributes of an entity beyond us, we have created God. This, of course, is Feuerbach's celebrated thesis of anthropomorphism.

Similarly, as finite human beings, we are also, to some extent, greedy and acquisitive. We avoid waste and pursue efficiency, and we wish to accumulate material wealth, etc. In short, we all have the tendency to maximise gains and minimise losses. Yet we never do so infinitely. If these "economic motives", as Polanyi calls them, are made infinite and absolute by extrapolating them to an entity beyond ourselves, then, we have created "capital". That is to say, capital is the god of our own "economic motives".

Old Marxists may be suspicious of this derivation of capital; for they have always believed capital to be something "material". If capital is the product of our mind, they would reason, it cannot be material. Thus, they worry about the question of materialism versus idealism. It is true that the human mind tends to seek "idealisation", so that, for instance, as soon as we see many physical triangles, we are bound to conceptualise a pure triangle in the mathematical sense. "Idealisation", however, always occurs in a specific material context, so that Euclidean geometry was just as much the product of ancient land-surveying practice as the product of mathematical intellection. We can say the same things with regard to capital. Indeed, previous to the age of capitalist commodity production, our mind could not fully grasp the concept of capital. Even the word "capital" in the present sense seems to date only from the mid-sixteenth century.

What is more important is that capital, like God, is an "idealisation" *of ourselves* rather than of an object outside us. It is a product of

human being's *self*-idealisation. Not only is capital the product of our mental, "idealising" process, it is also an "infinitisation" of our own attributes. *That is why we can achieve a complete knowledge of capital by introspection, i.e. capital has no "thing-in-itself" that exceeds our grasp.* In order to understand the logic of capital we need only ask ourselves what we, as a capitalist, would do in this or that situation. Indeed, this is how we have actually developed economic theory. Historians of economic thought know perfectly well that we would never have acquired classical economic theory by repeated testing of empirical hypotheses. General equilibrium theory was discovered by introspection; it was not inferred by the experimental, trial-and-error method of the physicists. And that is as it should be, since the fundamental core of economic theory is, in effect, *the definition of capitalism by capital itself*, or the dialectic of capital.

This crucially important point has never been properly understood by bourgeois economics due to its self-complacent ideology. For example, it fails to understand why its "micro" price theory remains deductive and *a priori*, while its "macro" business cycle theory appears to depend on an inductive/empirical method. Only when we see the whole body of economic theory as the definition (specification) of capitalism by capital itself, i.e. as the logic of capital, the unfolding of which constitutes capitalism, do we understand how its structural (or equilibrium) aspect and its dynamic (or cyclical) aspect are brought together into a unified system. This is done, as the present book demonstrates, in the *dialectic of capital.*[8] It is a signal achievement of Kozo Uno (1897–1977) to have understood Marx's *Capital* as essentially a book of the dialectic of capital.

Thus, to recapitulate the argument so far, in the formulation of economic theory, we do not observe the so-called "real world" out there, and construct in our minds an arbitrary set of hypotheses (i.e. a model or an ideal type), which we subjectively believe parallels reality, and the validity of which we check by empirical testing. True economic theory is a definition, or specification, of capitalism by capital itself. This definition is "objective" because capital, being our finite economic motives made infinite, transcends us, i.e. because it is in the nature of capital's solipsism. Yet, we are privy at all to the operation of its logic because economic motives themselves are originally amongst our own human attributes.

4. THEORY AND REALITY

If the nature of economic theory is as I have explained it above, then the next question which faces us is how such a theory can be related to the concrete-empirical facts of our economic life in history. To answer this question, I wish to begin with the claim that the *logic of capital never operates in a vacuum but always in a "use-value space"*, i.e. in the concrete-historical living condition of a human society involving a specific set of use-values. Only when the "infinite" logic of capital can successfully operate a "finite" use-value space, does capitalism come into being. Millions of use-values play their parts in our daily economic life, and the techniques of producing them are also extremely diverse. The use-values that were important in the economic life of eighteenth-century England are vastly different from those which are crucial to us today. That is to say, the use-values which play dominant rôles vary from one society to another. The fact that different productive technologies evolve in different societies is a reflection of this fundamental fact. Thus, the extent to which the logic of capital subsumes and sways the real economic life of society crucially depends on the nature of its use-value space.

The Uno school, therefore, advances a levels-of-analysis approach, which consists of distinguishing three stages of capitalist development: mercantilism, liberalism and imperialism. Each of these stages is characterised by a typical use-value space. During the mercantilist stage, capitalism crucially depended on use-values derived from wool; during the liberal stage, it produced light use-values such as cotton; and during the imperialist stage, the system relied heavily on use-values made of steel. The mode of accumulation of capital varied greatly from stage to stage, since different types of use-values dominated economic life in each. It was for this reason that the economic policies of the bourgeois state also differed from one stage to another. Thus, in studying the capitalist economy, the Uno school distinguishes three "typical" use-value spaces each of which corresponds to a particular developmental stage.

In pure economic theory, which describes the operation of a purely capitalist society, we need further control over use-values than capitalism was able to achieve in history. In this context, use-values must be reduced to merely "different" objects for use or consumption: x_1, x_2, ..., x_n. Use-values must be made more amenable to capital's logic than they actually are in reality because only a complete subsumption of economic life under that logic allows us to observe its operation

undisturbed by use-value, or human, resistance. Pure theory, in other words, presupposes a use-value space which is made deliberately abstract and therefore unreal.

Even though economic theory has always done this, the bourgeois-empiricist approach does not see the significance of it. Therefore, when it says "let x_1 be coal", we are never quite sure whether it is referring to purely theoretical "coal" which is merely an object different from, say, corn, or stage-theoretic coal which was a key input of the turn-of-the-century steelworks, or real-historical coal which I pick up on a cold day and throw into the stove. In other words, we are never sure how concrete that "coal" is. The relation between economic theory and reality is thus left uncertain. And that is to be expected of the natural-scientific approach of physics-like economics. For in natural science, in which we are interested only in the purity of things as "matter", there is no sophisticated problem of abstraction. Pure water is H_2O, but water in our living space is more or less contaminated with impure substances. These impurities are physically removed in laboratories to the extent that it is necessary or desired for the purpose of controlled experiments.

This ambivalence in the treatment of use-values comes from the fact that bourgeois-liberal economics does not recognise any gap, tension or incongruity between the logic of capital and the use-value space of a given society. It believes that the market which capital operates and the real-economic life in which human society engages itself are always perfectly confluent and symbiotic with each other. Because it assumes that the two sides blend so easily and are integrated so perfectly, it leaves no space for human society to occupy outside the capitalist market. That is why bourgeois economics has always ignored what Polanyi calls the "reality of society".

In contrast, the anti-liberal tradition of Marx has always stressed the so-called "contradiction between value and use-values", which means that the abstract-general (infinite) principle of capital represented by "value" and the concrete-specific (finite) reality of human economic life represented by "use-values" do not mix naturally. Only by chance, i.e. only when material conditions happen to be right, do they accommodate each other and bring capitalism into existence.

Once we recognise this point, it should be obvious that the subsumption of a use-value space under the logic of capital can never be perfect. In other words, there always remains some portion of the use-value space which exceeds the scope of the logic of capital. We refer to these use-value activities which fail to be integrated into the logic

of capital as "externalities", a term borrowed from neoclassical economics. The economic policies of the bourgeois state are meant to control these externalities, and only when this is done successfully can we conclude that capitalism remains viable. Indeed, the economic policies of the bourgeois state are nothing other than measures intended to assimilate and integrate externalities into the working of the capitalist market. Here, the state is fully subservient to the requirements of the capitalist market in that it only attempts, by a variety of strategies, to complement and support its operating principles. In different developmental stages of capitalism, different types of economic policies prevailed, since the externalities which the state confronted were different. But so long as these are effectively "internalisable", the real-economic life of society can be said to be governed ultimately by the logic of capital, and, hence, we may conclude that capitalism remains safe and sound.[9]

The above also means that, within capitalist society, we cannot really make "technical" use of our knowledge of economics, and prescribe economic policies with a view to achieving an arbitrary goal that society sets. For unless that goal is compatible with the teleology of capital, it will never be achieved. The so-called "policy prescriptions" which "scientific" economists allegedly offer are, in reality, nothing but prescriptions to reinforce the working of the capitalist market. Since, as I have stated above, the sole aim of bourgeois economics lies in teaching how we can most effectively conform to bourgeois society, that is only to be expected of policy recommendations based on it. Only when capitalist society begins to disintegrate, i.e. in the historical phase of what I call "ex-capitalist transition", do economic policies acquire a more positive significance. I will come back to this point later.

5. KNOWLEDGE OF OURSELVES IS RETROSPECTIVE

The inevitable conclusion again is that economic theory is quite unlike a natural-scientific theory. It is neither predictive nor prescriptive, but rather "post-dictive" (if one can invent such a word) and "grey" in Hegel's sense. That is to say, it merely enables us to grasp the concept of capitalism as what it "was" when dusk has fallen upon it, i.e. when "actuality is already there, cut and dried, after its process of formation has been completed."[10] Such a theory is not there to be made technical use of. It does not help us to devise policies designed to achieve any and all goals which we arbitrarily set. An immediate reac-

tion to such a statement is usually the charge that economics would then be quite "useless". Before jumping to a vulgar conclusion concerning the "utility" of our knowledge, however, we should reflect first on what knowledge means to us.

By far the most important knowledge which we can possess is undoubtedly the knowledge of ourselves. For, in the most fundamental sense, we can fully comprehend only what we are and do. Of course, we also learn about things that lie outside us, as we do in the natural sciences. But the knowledge which we acquire of such things will be "useful" to us only when we know exactly what to do with it. For example, by studying earthquakes and learning about their regularities, we may be able to predict when and where they are likely to strike next. In that event, we can take precautionary measures so as to minimise the harm which would otherwise befall us. Everyone can agree that such knowledge is useful. The same clarity, however, is absent with regard to the knowledge which has enabled us to invent a genocidal weapon. Although such a weapon is extremely harmful to humanity as a whole, it may be useful to a depraved section of it. Although we all deplore the hole in the ozone layer, what is the use of that knowledge if we cannot control further emissions of chlorofluorocarbons into the atmosphere? The knowledge of things outside us can be "useful" only when we can make proper use of it. Otherwise, the same can easily turn into a tragic instrument of self-destruction.

At this point, I cannot help recalling the old Socratic instruction: "Know Thyself." This well-known first lesson in philosophy has, in most cases, been interpreted to be an admonition for us, as individuals, to be humble with regard to our limited knowledge. Thus, Montaigne rephrased it into the question: "*Que sais-je*?", the expected answer to which being: "*Je ne sais rien.*" But it seems to me that the precept admits broader interpretation. For we should "know ourselves" not only in terms of individual or collective ignorance, but also in terms of what matters to us and what we are attempting to achieve by our individual and collective efforts. In other words, the maxim could be a more general call for the self-awareness of human beings. The distinctive characteristic of human beings is that they are guided by reason, and do not act by instinct alone. This means that we should be conscious of what we are and what we do.

What we seek in social science, including economics, is nothing other than knowledge of ourselves, if not as individuals, then as a group forming a society. *This kind of knowledge, however, can be gained only retrospectively by looking back on our past history*, not prospectively

by looking into an unknown future. Needless to say, futurology does not belong to social science, though it may constitute a pastime for dilettantes. The more fundamental question to ask is why we study the history of our past which we can no longer retrieve. The purpose of studying history is surely not to make technical use of it, but solely to know ourselves. Thus, Paul Valéry has stated, with the characteristic pithiness of the poet, that we move into the future by stepping backward (*"Nous entrons dans l'avenir à reculons"*).[11]

Imagine that we look out through the rear window of a moving vehicle. Our perspective will then change, as the vehicle moves on, in such a way that what is new always enters our field of vision from the edges. This is precisely how we look back on the history of our past. Our past and familiar experience diminishes in size as it becomes more distant, and new information is constantly added on the periphery of our vision. This is certainly better than being totally blindfolded; but it is not quite as foresightful as looking through the front window of the moving vehicle. We must surmise what the future has in store for us only from our changing vision as we look backward. Are we climbing up a mountain, or coming down to beaches? Are we moving into town or departing from it? Valéry expresses with remarkable poignancy and grace the fact that the human intellect is destined to retrospection.

It would be futile to deny this unavoidable limitation of our minds and pretend that we are capable of prospection when we are, in fact, not. However, in order to make the best use of our retrospective knowledge, we need proper methods of structuring the available information. Economics and other social sciences, which have developed in modern times, give us frameworks in which to place ourselves in society. Pre-modern historians do not even encounter the concepts of "society" and the "economy" which we now take for granted. Only in modern times were such things as society and the economy discovered for the first time. This fact has important implications. For *we learn what society is in general only through our experience of living in modern society which has its own distinctive character.* By no means are all societies modern. Nevertheless, we are destined to learn what is generally true of societies only through the study of this particular form, modern society.

The latter is under the sway of the logic of capital. That is why the economy tends to "disembed" itself from society, as Polanyi would say, allowing us to perceive that, at the root of any society, there lies its economic life. Once again, however, economic life in general can-

not be learned directly. We must first learn economic life in capitalist society, and then surmise in its light what economic life in other societies might be like. Therefore, the dialectic of capital which exposes the fundamental structure of capitalist economic life constitutes the "zero" of social science. In other words, only by examining what we are and what we do in capitalist society do we begin to "know ourselves" as social beings. With this knowledge in our possession, we will be better able to transcend the confines of modern society. However, since the dialectic of capital is a "grey", "post-dictive" theory, it cannot be fully grasped until capitalism itself reaches its twilight.

It is a testimony to the true genius of Karl Marx that he could see the main outlines of the dialectic of capital when the heyday of capitalism was scarcely past. Yet, even with the genius of Marx, it would be too much to expect a completion of the dialectic in his hands. It makes sense that the Owl of Minerva should spread its wings only much later, during Uno's lifetime. Indeed, by that time, the capitalist mode of production had entered its phase of disintegration.

6. THE PROCESS OF EX-CAPITALIST TRANSITION

The process of disintegration of capitalism, or what I call the phase of ex-capitalist transition, began with the First World War. During the 1920s, however, the prevailing opinion of the day was to favour a speedy return to normalcy, i.e. to the prewar economic order. Thus, by the middle of the decade, most industrial powers returned to the gold standard, and managed to restore the climate of so-called relative stability in their economies. The stability, however, was literally "relative", in that it entirely depended on the flow of American money, which first poured into Germany and then circulated through the rest of Europe, before returning to the United States. Anything that disrupted that flow would also upset the economic stability of postwar Europe, such that the whole world subordinate to it would also crumble. This fate was rudely demonstrated by the US crisis of 1929, which ushered in the subsequent decade of depression.

One would normally expect that in a capitalist economy the depression which follows a crisis would last only for a few years, and then a phase of recovery would set in automatically. Since capitalist accumulation proceeds cyclically, prosperity and depression alternate in successive business cycles. What characterised the depression of the early 1930s, however, was that its deflationary effects were so severe that

no capitalist nation could afford the time for such a process of "automatic recovery" to take its course. If, in that condition, the bourgeois state had waited for a recovery, by continuing merely to "internalise externalities", while avoiding direct involvement in the rescue of the populace which were in dire straits, it would have failed in the "protection of society" and would have invited anti-capitalist revolutions. Indeed, throughout the decade of the 1930s, the bourgeois state was on the defensive, besieged by the collectivisms of the right and the left.

It was in that hour of crisis that Franklin D. Roosevelt, President of the United States, demonstrated an uncommon leadership in adopting a series of policies known as the New Deal. These policies implied a transformation of the bourgeois state into a social-democratic or welfare state. The latter refused to entrust the management of the national economy exclusively to the capitalist principle of the market, but offered to complement it with the planning principle of the state. For it came to be accepted by Roosevelt and others that society could not otherwise be protected. This position was, of course, not accepted without demur by the bourgeois state. That was obvious since both the National Industrial Recovery Act (NIRA) and the Agricultural Adjustment Act (AAA), the key legislations of the New Deal, were at first ruled unconstitutional by the courts. In that instance, the law sided with the bourgeois state, while politics supported the welfare state. Ultimately the Western democracies could preserve themselves only by letting politics prevail over the law, i.e. by letting the social-democratic state replace the bourgeois state. The former state implies a truce between the two enemy classes of workers and capitalists. The Western democracies needed at least a temporary reconciliation of these two classes; for, soon, they were to ally themselves with the communists in order to wage a life-and-death war with the fascist states.

The economic regime established under American hegemony after the Second World War is more social-democratic than capitalist. Under the Cold War, it is true, anti-communism became the prevailing ideology, and it asserted that the West abided by capitalism, while the East had fallen for socialism. But the very need to campaign for such an ideology is itself an indication of the underlying realities: that the West could not afford to alienate the working classes, and that social democracy was its best defence. Indeed, the working classes had to be pacified by economic prosperity, and the social-democratic state spared no effort for its achievement. In other words, it vigorously pursued "Keynesian" policies for full employment, price stability and economic growth, while coordinating the priorities of the "mixed economy". In

any event, an unprecedented economic prosperity did materialise in the West during the 1950s and 1960s. It would, however, be too naïve to attribute its cause to the macro-economic policies contrived by Keynes.

The so-called "mixed economy" combines the planning principle of the state and the market principle of capital. These two methods of economic organisation are mutually alien and are not always compatible. They can accommodate each other only when the economy is productive enough to yield ample value-added on a small investment of capital, for a large pie can be amicably shared between labour and capital. It was the advent of oil that ensured such productivity. This point is of such vital importance for the assessment of the "present as history" that I wish to expand on it at some length below.

7. THE AGE OF PETROLEUM

What characterises economic life in today's industrially developed nations is a dramatic fall in the number of those who are engaged in productive labour, i.e. labour which transforms part of nature into use-values, which are material objects. This trend was initiated by the advent of oil, which replaced coal as the primary source of energy. The same trend has been significantly accelerated by the more recent ME (microelectronics) revolution and discovery of new (carbon-based) materials. Sometimes the first phase is described as "fordist", and the second "post-fordist". But they both belong to the same oil-based civilisation which has the distinctive characteristics of saving productive labour on the one hand, and damaging the natural environment on the other.

For a very long time, human society had to devote most of its time to the production of material things, as the majority of its members worked many hard hours "by the sweat of their brows". First, agriculture was central. But when its productivity rose in early-modern times, manufacturing "disembedded" itself from agriculture, and soon the age of capitalism dawned. It turns out that capitalism was the last phase of human history in which the structure of a society had to be predicated on the production of material things, i.e. on the mobilisation of productive labour.

Capitalism materialised the age of industrialisation. It was a time when manufacturing productivity rose spectacularly, as the source of power shifted increasingly from wood to coal. However, this new energy source had its own technical limitations. First, it had to be dug out of the ground in solid form, which required extremely hard human

labour. Secondly, it could be used only as fuel and not as an industrial material apart from minor exceptions. Thirdly, it could power only external combustion engines. It was because of these limitations that coal-based technology did not liberate capitalism from the heavy burden of productive labour. All this changed, however, with the advent of oil. For, once a well is drilled, oil can be pumped up to the ground surface automatically without involving much human labour. In its liquid form it can be used directly to fuel internal combustion engines. Moreover, it can also be used extensively as a major input in the manufacture of "synthetic" products in the petro-chemical industry, thus dispensing with many "natural" industrial materials.

It was in the United States, which was traditionally a labour-scarce and nature-abundant economy, that oil-based industrial technologies developed most intensively. These technologies were, as one might expect, radically labour-saving and environmentally unfriendly. But in the first phase of their extensive adoption in the 1950s and 1960s, the immediate effect was a widespread destruction of the environment rather than a job crisis. The reason was that the demand for material goods was still so vigorous that the absolute scale of production could be expanded much more rapidly than the labour–output ratio fell. This remained the pattern until the oil and environmental crises of the 1970s blocked further development of this type and forced industry to shift to a new phase, which entailed the ME revolution and the discovery of new materials. By this time, however, the "affluent society" was almost satiated with goods, and so the scale of production could no longer be expanded as quickly as before despite the introduction of new technologies. Under the circumstances, it was inevitable that the latent redundancy of productive labour should break out into the open.

If we combine the institutional and technological surveys of our recent past which I have alluded to above, the following picture emerges. The economic prosperity and the success of the social-democratic states in the West during the 1950s and 1960s depended strictly on the productivity of oil-based technologies, which, in the first phase of their adoption, squandered resources and devastated the environment. When this trend was curbed by the oil and environmental crises of the 1970s, stagflation ensued. The latter was overcome only when the oil-dependent civilisation entered its second phase. In that phase, however, the redundancy of productive labour became apparent, and the operation of the social-democratic state was eroded because the industrial peace which underlay it could no longer be secured. The authority of Keynes waned, as neo-conservatism which repudiated the social-democratic state

became prevalent, and called for "liberalisation", "marketisation" and "globalisation".

One of the most serious deficiencies of neo-conservatism is that it has no theory of the state. Because it is clearly impossible to restore the bourgeois state on a foundation provided by the remains of the now expired social-democratic state, this ideology preaches economic "borderlessness", and urges capital to invest outside welfare states in the so-called "emerging nations", where labour and the environment remain unprotected. This, however, is a makeshift solution which will not permanently overcome the crisis. Thus, the fate of capitalism has been irrevocably sealed, and the process of ex-capitalist transition must continue to deepen.

8. TWO SENSES OF THE WORD "CAPITALISM"

The thesis of ex-capitalist transition which I have explained above is frequently misunderstood because of the fact that the word "capitalism" has two related but distinct meanings. In general terms, capitalism simply means "being a capitalist", that is to say, "the act of engaging in capitalist activities", or "the act of advancing capital in order to earn returns on it". Let us refer to this as capitalism-I. On the other hand, the same word also means "capitalist society". In this case, I will refer to it as capitalism-II.[12] Normally, it is believed that, if capitalism-I is practised sufficiently extensively, it will necessarily yield capitalism-II. In other words, the popular conception of capitalism-II is that of "a society in which capitalism-I occurs sufficiently extensively". In this case, we only need to agree on what constitutes "sufficiently extensively" before we can use the term without ambiguity. Since such an agreement is not difficult to achieve, a common usage of the term is established following this principle, and no doubt this is quite adequate for daily conversations and the mass media. Social science, however, cannot simply appropriate the popular usage of the term.

The sole purpose of social science, as previously stated, is to give us frameworks with which to interpret the history of our own social life. Since capitalist society constitutes the referent to all other societies, its definition has to be precise, objective and dependable. A mere model, or ideal type, of capitalist society which we arbitrarily construct does not serve this purpose, still less does the popular conception of it that we spoke of above. What we need is a specification of capitalism-II in the light of the logic of capital, i.e. by capital itself.

That is precisely the kind of definition that this book intends to offer. In other words, whether our present society is "capitalist" or not should be evaluated in the light of our knowledge of the dialectic of capital.

The problem here is that real capitalism in history differs from pure capitalism in theory in that the former involves a concrete use-value space, which is deliberately held abstract and unreal in the latter. Capitalism in history always contains "impurities" which the theory of capitalism does not, so that there is always a gap between the real and the ideal. How large should that gap be before we may legitimately conclude that reality no longer embodies the ideal definition of capitalism-II? Such a question can be settled only subjectively. For there is no *a priori* way of determining whether one judgement is superior to another. Notice, however, that, in this case, what is subjective is not the definition of capitalism-II as such, but only the judgement over its applicability to reality.

The reader will find in this book the precise definition of capitalism-II by the dialectic of capital. To put it in the simplest possible terms, capitalist society is a society bound by the law of value and the law of relative surplus population. The law of value is valid when the economic life entrusted to the market principle of capital tends towards a state of general equilibrium, which entails an optimal allocation of resources. The law of relative surplus population, on the other hand, reveals the fact that capitalist accumulation is cyclical, so that economic activities under capitalism must undergo business cycles. The prosperity phase of a business cycle is divided into the sub-phases of recovery, average activity and precipitancy. It is in the sub-phase of average activity that the capitalist economy comes closest to achieving an optimal allocation of resources. In this book, assuming an ideal use-value space, I demonstrate the logical underpinnings of these observations.

In a historical capitalism, however, because the use-value space is less than ideal, these results will appear more or less imperfectly. For example, the use-value space may be such as to generate strong monopoly elements, which not only distort the shape of business cycles but also obstruct the working of the law of value. But as long as the capitalist market retains the tendency towards achieving an optimal allocation of resources in the sub-phase of average activity, without depending on the planning principle of the state, we may conclude that reality embodies the definition of capitalism-II. The question here is whether or not that indeed is the case with regard to the present society in which we live. My belief is in the negative. It is, of course, possible

to disagree with me at this point, but most of those who disagree with me do so at quite different levels.

Many reject my conclusion for either of two rather unworthy reasons: first, because they insist on retaining the popular but inadequate conception of capitalism; or, secondly, because they remain loyal to bourgeois-liberal dogma. I have already explained that if capitalism-II simply means "a society in which capitalism-I occurs sufficiently extensively", the present society is bound to be capitalist. I have also explained that the bourgeois-liberal dogma recognises no society other than the capitalist one, in which case the present, no less than any other historical society, is by definition a capitalist one. It would be futile to take issue with those who adopt these naïve positions. I only wish to point out the fact that most bourgeois economists today do tacitly admit to the demise of capitalism-II. For they now regard the Walrasian equilibrium to be only a special case of the Nash equilibrium. The frequently cited example of the latter, the "prisoners' dilemma" case, shows that an imperfectly competitive economy can settle to the least, not the most, desirable equilibrium. In other words, bourgeois economists themselves admit that capitalism-I, practised sufficiently extensively, can easily lead to the worst misallocation of resources. Is this not the exact opposite of what bourgeois-liberal ideology has always preached with regard to capitalism-II?

9. CLOSING REMARKS

If our present society is no longer capitalism-II, or at least is departing from it quickly, what is the point of recommending a study of the dialectic of capital, the sole purpose of which is to give us a systematic definition of what is already dead or is about to die? Such a question is bound to be asked. But my answer to it is simple. We cannot move decisively beyond capitalism-II, unless we really know what it was. Even though capitalism in reality is dying, its ideology can continue to live on as a ghost in our minds for a long time still, spellbinding, disorienting, and even incapacitating us. Because of that ghost we may fail, or refuse, to recognise the disappearance of the material conditions which made our reliance on the market once so effective. It is this danger that we must guard against.

The sudden upsurge of post-modernism in recent years is understandable, given that capitalist society has been approaching its end. For modern society is just another name for capitalist society. However, is

post-modernism really free from capitalist ideology? It is impossible to truly criticise and overcome modern or capitalist society, together with all its cultural and literary manifestations, unless we first come to grips with its internal logic. The only way to fully comprehend that logic is by a careful study of the dialectic of capital. Only the dialectic of capital can expose the "thing-in-itself" of modern society, and thus enable us to overcome the ghost of capitalism which continues to divert our attention from reality. By informing us of what we have been doing within the confines of modern society, the knowledge of the dialectic enables us to find ways to transcend these confines.

The time is now ripe for us to move decisively beyond capitalist society instead of continuing to dwell amongst its ruins. Though it is about to end its life, we are still very much in the dark as to which direction human civilisation should go, and that, to a great extent, is due to our own single-minded idolatry of "modern" values and presuppositions, even as the post-capitalist era is quickly approaching. It is urgent that we should liberate ourselves once and for all from the spell of modernism. For no new society can begin, unless we first free our minds from the narrow vision of the old.

Notes

1. I use the term "Marxian" to mean "being in the intellectual tradition of Marx", and the term "Marxist" to mean "being in the political and ideological tradition of Marx." The Uno school claims that one need not be a "Marxist" in order to be a "Marxian".
2. George Lichtheim in his "Introduction to the Torchbook Edition" of G.W.F. Hegel, *The Phenomenology of Mind* (translated with an Introduction and Notes by J.B. Baillie, Harper & Row, New York and Evanston, 1967, pp. xv–xvi), writes as follows: "In Germany at any rate, educated opinion explicitly or tacitly sanctioned the claim inherent in Hegel's procedure, whereby the history of philosophy terminated with his own system. This attitude was not confined to the authorized interpreters of his legacy. In substance it was shared by most of his critics, whether theologians and political conservatives like Kierkegaard, or materialists and democrats like Feuerbach. Both parties concurred in regarding him as the last great representative of the Western metaphysical tradition: a tradition which on different grounds they repudiated. . . . What united Hegel's critics was the conviction that his system represented the terminus of the entire undertaking of ontological speculation since Plato and Aristotle."
3. Lenin, for example, was an accomplished revolutionary, and as such, he may even have bested Marx. On the other hand, though he was also a brilliant intellectual, his scholarly achievement does not have the depth

and quality of Marx's. Lenin may thus be characterised as a full-time revolutionary and part-time scholar, if Marx was the reverse. This kind of statement may be viewed as a sacrilege by Marxists-Leninists. But that is precisely what distinguishes Unoism from Marxism-Leninism. To gloss over the difference between these two great men and rank them equally on both counts would amount to their apotheosis, after which we cannot learn from their errors. Both Marx and Lenin must be respected as human beings; they should not be worshipped as gods.

4. I have used the term "reductionism" in the sense of a metaphysical doctrine which requires all sciences, regardless of their purpose, to model themselves after physics and chemistry. See Thomas T. Sekine, "An Essay on Uno's Dialectic of Capital", in Kozo Uno, *Principles of Political Economy, Theory of a Purely Capitalist Society* (Harvester, Sussex, 1980), pp. 134–6.
5. Much has been written on this theme from various angles since Heinrich Rickert and Max Weber. My purpose here, however, is simply to interpret some salient features of Uno's position on the subject, without intending to contrast them with the thoughts and writings of other authors.
6. Karl Polanyi, *The Great Transformation* (Beacon, Boston, 1944).
7. Ludwig Feuerbach, *Lectures on the Essence of Religion* (Harper & Row, New York, 1967).
8. The dialectic defines "capital" as the form which pursues abstract-general wealth. Therefore, it operates both in its totality as the aggregate-social capital *and* in its individual units, into which it splits itself so as to take charge of specific aspects of real-economic life. Capital, therefore, must appear both in its macro and micro activity.
9. Of course, the policies of the state are always adopted from a national point of view. That is to say, various interest-groups within society vie among themselves, trying to achieve the betterment of their own positions. Their competing claims are coordinated by the state through political processes. Therefore, the bourgeoisie cannot always prevail over other groups in society in enforcing its priorities. Yet, in the end, policies which support the mechanism of the capitalist market turn out to be effective, and the ones which counter it never achieve their aims. That indeed is what makes a capitalist society.
10. T.M. Knox, *Hegel's Philosophy of Right* (Oxford University Press, 1967), pp. 12–13.
11. *Oeuvres de Paul Valéry*, I, Pléiade, Gallimard, 1957: *Variété*, pp. 1040, 1135.
12. Peter F. Drucker, in his recent book, *Post-Capitalist Society* (HarperCollins, New York, 1993), writes as follows. "Capitalism, in one form or another, has occurred and reoccurred many times throughout the ages, in the East as well as in the West. And there have been numerous earlier periods of rapid technical invention and innovation – again in the East as well as the West – many of them producing technical changes fully as radical as any in the late eighteenth or early nineteenth centuries. What is unprecedented and unique about the developments of the last two hundred fifty years is their speed and scope. Instead of being one element in society, as all earlier capitalism had been, Capitalism – with a capital C – became

society. Instead of being confined, as always before, to a narrow locality, Capitalism – again with a capital C – took over all of Western and Northern Europe in a mere one hundred years from 1750 to 1850. Then, within another fifty years, it took over the entire inhabited world" (pp. 20–1). Roughly speaking, my capitalism-I and capitalism-II correspond to Drucker's "capitalism with lowercase c" and "Capitalism with capital C".

1 The Pricing of Commodities

1.1 VALUE, USE-VALUE AND EXCHANGE-VALUE

1.1.1 The Value of a Commodity

An outstanding feature of capitalist society consists of the transformation of social relations between human beings into "social" relations between things. This tendency towards the reification, or impersonalisation, of human relations follows from the fact that, in capitalist society, all goods (or use-values) tend to be produced as commodities. I say "all goods" but not "all goods and services". For services are not use-values and cannot be capitalistically produced as commodities. Nor can they be reified or made wholly impersonal.

It is, therefore, necessary to suppose that, in a purely capitalist society, personal services are not directly rendered by one individual for another, but only via the consumption of commodities sold by one to another. For instance, it will have to be supposed that no barber exists in a purely capitalist society, but rather that various tools, instruments, and cosmetic materials are produced as commodities, the consumption of which (assumed costless) yields the hair-cutting service. Restrictive as it seems, this simplification must be expressly adopted, if the essential properties of capitalism are to be prominently exhibited, apart from contingent and irrelevant details. At least that much is implied by the celebrated passage with which Marx opens his *Capital*:

> The wealth of those societies in which the capitalist mode of production prevails, presents itself as an immense accumulation of commodities, its unit being a single commodity. Our investigation must therefore begin with the analysis of a commodity (Karl Marx, *Capital: A Critique of Political Economy* (2 vols, International, New York, 1984/1987), I, p. 43).

In the dialectic of capital, "commodities" refer to nothing but goods (or use-values) produced in capitalist societies. A "capitalistically produced" good (or use-value) assumes the form of a commodity, since it must be sold before it can be used or consumed.

A single commodity that constitutes "a unit of the wealth of a capitalist society [is], in the first place, an object outside us, a thing that by its properties satisfies human wants of some sort or another" (*Capital*, I, p. 43). In other words, it is a good or use-value. The word "use-value",

strictly speaking, refers to the physical properties of wealth, goods or products which are in some sense useful to the consumer. All goods, whether they are commodities or not, possess a use-value or "are" use-values in this broad sense. Yet, goods do not, because they each have a use-value, automatically develop into commodities. They become commodities only under a definite set of social relations. Thus, commodities are the social and historic "form" that goods adopt, when their owners are so related as to exchange them mutually. It is for this reason that economic theory must begin with a study of the commodity-form instead of mere goods or wealth in general.

The statement quoted in the preceding paragraph may give the false impression that a commodity is first of all a use-value, before it is a value. But, almost immediately afterwards, Marx makes the following qualification: "The use-values of commodities furnish the material for a special study, that of the commercial knowledge of commodities. Use-values become a reality only by use or consumption: they also constitute the substance of all wealth, whatever may be the social form of that wealth" (p. 44). In other words, even though all wealth, capitalistic or otherwise, possesses a use-value, the study of use-values as such falls outside the scope of economic theory.

The dialectic of capital, which aims to arrive at a full comprehension of capitalism in its abstract functioning, must begin with the simplest form (or contextual specification) that reflects the presence of capitalism as a historical society. That form is the "commodity", which cannot exist without a social relation between its seller and its purchaser. No social (or inter-human) relation need inhere in "goods", for the latter need only imply the privacy of their consumers. A commodity differs from a good or use-value in that it has value. Although a commodity is, by itself, a "thing outside us", i.e. a material object, the commodity-*form* has a social dimension which provides the dialectic of capital with its point of departure.

* * *

A commodity contains the most abstract and the least specified element of capitalism in that it is *value*. The fact that all commodities possess value, and that, as value, they are of some homogeneous social quality, can hardly be doubted; for otherwise why should they all be uniformly priced and made comparable only in quantitative terms with one another? Value, in the first instance, is that which makes the reduction of all commodities to some socially homogeneous quality possible. By possessing value, a commodity represents a definite fraction of the totality of all commodities existing in society.

Value in this sense is that which concerns the seller, not the purchaser, of the commodity. Since the seller is not the user (or consumer) of the commodity, he cannot actively take an interest in its use-value. The seller offers to trade away his commodity, hoping that it will prove to be "a use-value for others", since it has already been judged as useless to himself. His sole concern is the extent to which it turns out to be useful to others, i.e. to be socially valuable or significant. For only to that extent does his commodity prove its "moneyness" (convertibility into money) or value. It is imperative here to consider a commodity from the point of view of its owner because he is in fact the capitalist, appearing, at the present level of abstraction, merely as a seller of the commodity. Being implicitly a capitalist, he is already well specialised in the selling of a single kind of commodity, rather than a collection of various different commodities.

A commodity always comes into the picture in the hands of a seller who is yet to find its purchaser. It, therefore, makes sense to examine the commodity first of all from the point of view of its seller, i.e. as value. It is in this procedure that the dialectic parts company with bourgeois economics. For the latter considers the commodity exclusively from the point of view of the purchaser who has already taken possession of it, i.e. only from the point of view of its consumer. Once in the latter's hands, however, the commodity immediately loses its form and becomes a mere good, i.e. an object of use or consumption. By thus reducing the commodity to a mere good (a simple use-value) or an immediate source of individual satisfaction, neoclassical economics has entirely obliterated its social and historic form. The consumer of a commodity can never develop into a capitalist, nor can the study of goods and their consumption reveal any significant aspect of capitalist society.

The reason why all commodities must be priced (in a positive number) is that they are value-objects, i.e. they are goods embodying value. (This proposition, of course, does not imply its converse: that whatever is positively priced must necessarily possess value; of this more later). Value stems from the seller's indifference to the use-value of his commodity. He is not interested in his commodity as a use-value; he is indifferent to it. Yet he does not discard his commodity, knowing that it is a "use-value for others", the extent of which constitutes his claim on the mercantile wealth of society measured in terms of that abstract homogeneous quality called "value".

In the dialectic of capital, we let capital itself define capitalism by the unfolding of its own logic. Therefore, we ask capital what it is like in its most abstract, i.e. least specified, form. The answer will be that it is mercantile, or abstract-general, wealth which can be pursued endlessly, not material, or concrete-specific,

wealth whose consumption eventually leads us to satiation. The value of a commodity reflects this abstract-general character of capital, whereas its use-value is a reminder that it is also part of "our" material wealth. If, instead of letting capital explain what capitalism is, "we" tried to theorise it by observing it arbitrarily from the outside, capital would not fully reveal itself. Furthermore, "we" would be adopting the practice of bourgeois economics which erroneously begins its exposition with the use-value, rather than the value, of a commodity. Indeed, bourgeois economics always insists that commodities are, first and foremost, use-values, and that they obtain prices when they are, by chance, exchanged one for another. The dialectic insists on the opposite. Commodities are destined to be exchanged one for another because they are offered for exchange as value, indifferently to use-values, by capital.

* * *

In the present context "value" cannot be further specified. That is to say, the substance of that abstract-social quality must remain unspecified. Marx's well-known procedure abruptly to posit an equation of exchange such as:

$$\text{"1 quarter corn} = \text{x cwt. iron"}, \qquad (1)$$

and then to infer that "the common factor" in those two entirely heterogeneous use-values must be the same quantity of labour socially required for their production cannot be defended. All that the equation says is that the two use-values are sold for the same price. What must be explained here is how every commodity acquires a price as expression of its value, and not how the substance of value may be formed in the process of production of the commodity. Only in Chapter 4 of this book, when all the necessary preparations have been made, will it finally be legitimate to establish that socially necessary labour constitutes the substance of value.

This is perhaps also an appropriate place to dispose of the neoclassical fallacy to ascribe the cause of prices to the "scarcity" of the commodities. "All exchangeable goods have the common property of being scarce in proportion to demand", says Böhm-Bawerk (*Karl Marx and the Close of His System*, Clifton, 1975, p. 75). Suppose then that there are 100 million tonnes of coal in society. In what sense is this amount of coal "scarce" relative to demand, other than merely that it is not freely available to all, and hence has a (positive) price? Unless the concept of scarcity is established prior to and independently of that of price, one finds here only the empty tautology that: that amount of coal is scarce ≡ it is not free ≡ it has a positive price. Clearly, such a tautology explains nothing.

Neoclassical economics originally meant by scarcity (or Walras' *rareté*) marginal social utility (*Elements of Pure Economics*, Clifton, 1960, p. 65). That indeed was the substance of subjective value which could be derived independently of prices, and which Wicksell defended against Cassel's "refutation of the theory of value" (*Lectures on Political Economy*, London, 1961, vol. I, pp. 219ff). For reasons that are only too well known, however, neoclassical economics has long ago renounced the concept of social utility, in effect admitting the impossibility of a subjective theory of value. Thereafter, the declaration by L. Robbins that "scarcity involves the necessity of making a choice" (*An Essay on the Nature and Significance of Economic Science*, London, 1952, pp. 14ff) should sound quite hollow, since individual choices can never be directly aggregated into a social choice. Society makes a choice only after individuals have made their respective choices *in the light of prices*. If a social choice already presupposes prices, so does "scarcity" – the original concept that was supposed to explain prices.

To avoid the fallacy of explaining prices by prices the dialectic must unambiguously introduce the concept of value here as the most fundamental property of the commodity-form, even though its real and objective substance (socially necessary labour) cannot, at this stage, be specified. Value is a quality of the commodity quite separate from its use-value. It is the social, and not material, dimension of the commodity that makes its value, in terms of which it does not qualitatively differ from any other commodity. All commodities relate themselves with one another only quantitatively in prices because they share the same property of being socially significant. The substantive content of this social significance (or social substance, as Marx calls it) cannot as yet be revealed. All that can be anticipated here is that it must be something objective, instead of a merely imaginary, or metaphysical, substance such as social utility.

1.1.2 The Use-Value of a Commodity

If value is the positive side of the commodity, use-value is its negative side. Although the commodity is a value from the point of view of its seller, and this must be emphasised above all, it is at the same time a potential use-value for its purchaser. The use-value property of a commodity reaffirms the fact that it is a material object "outside us" and a "thing", so that a service which is only rendered "between us", and which is not a "thing", cannot be a commodity. Only a material and alienable object, or "thing", which yields a useful service in its consumption-process assumes the form of a commodity.

One should carefully distinguish between the "use-value" and the

"utility" of an object of consumption. The former term refers to its material characteristics, and the latter (at least in the economist's usage) to a measure of the subjective appreciation of such characteristics. The dialectic of capital is not concerned with the latter, i.e. with the degree to which an individual consumer is satisfied, when he consumes a use-value. It is concerned only with the material nature of the commodity, the consumption of which, since it yields one useful service or another, will be sought by someone.

Thus a commodity is said to possess two mutually exclusive elements or factors: value and use-value. As value the commodity is social, and as a use-value it is material. If viewed as value, a commodity differs only quantitatively from others, being a small part of the homogeneous mass of all commodities. If viewed as a use-value, it is qualitatively distinct from every other commodity, being a sample of the heterogeneous collection of many commodities.

* * *

The use-value *of a commodity* is not simply the use-value of an object of consumption. These two must be distinguished. All commodities are objects of use or consumption, i.e. they are "goods". To say that goods have use-values is, strictly speaking, tautological and explains nothing. Goods *are* use-values. One may, however, talk of the use-value of a good, meaning that the good is ready for use or consumption. The use-value *of a commodity*, however, means something quite different. It refers to a use-value, from the point of view of the purchaser, of the commodity which still belongs to the seller. That use-value is not yet in the hands of the purchaser ready to be consumed.

In order to consume that use-value the purchaser must acquire the commodity, by paying a price for it. Only when the commodity is purchased, does its use-value become realisable (consumable). When the commodity is purchased, however, it is also sold. Therefore, by the time its use-value becomes realisable, its value too has already been realised. Neither the value nor the use-value of the commodity can be realised unless it changes hands, i.e. unless it is circulated.

Once a commodity is circulated and falls into the hands of the purchaser, it at once becomes a non-commodity, which is ready to be consumed as a simple use-value. The use-value of a commodity is not of this kind, but a use-value which must co-exist with value. The use-value of a commodity cannot exist independently of its value. In that sense, it is the negative correlative of the value of the commodity.

* * *

Since the use-value of a commodity, viewed by its purchaser, is not yet immediately consumable, he must first take possession of it from its seller in the process of circulation, or of exchange, in order to actually consume its use-value. The purchaser can take possession of someone else's commodity by paying its price, i.e. by counter-offering his own commodity in an appropriate quantity. In other words, the purchaser of a commodity must also be the seller of another commodity.

The purchaser and the seller are, therefore, the two sides of the commodity-owner, just as use-value and value are the two factors of a commodity. As the seller, the commodity-owner is concerned with the value of his own commodity; as the purchaser, he is interested in the use-value of a commodity which he has not as yet acquired.

If two commodities **A** and **B** are exchanged, the seller of **A** is simultaneously the purchaser of **B**, and the seller of **B** is at the same time the purchaser of **A**. This means that the realisation of the value of **A** requires the realisation of the use-value of **B**, and vice versa. Here, the use-value of **B** insofar as, and to the extent that, it expresses the value of **A** is called the exchange-value, or value in exchange, of **A**. The use-value of **A** insofar as, and to the extent that, it expresses the value of **B** is said to be the exchange-value, or value in exchange, of **B**.

1.1.3 Exchange-Value or Price

Suppose that the quantity a of commodity **A** is exchanged for the quantity b of commodity **B**. Then we observe the trade:

$$(a \text{ of } \mathbf{A}) \text{ for } (b \text{ of } \mathbf{B}), \tag{2}$$

and may say that the exchange-value, or price, of **A** per unit is b/a of **B**, and the exchange-value, or price, of **B** per unit is a/b of **A**. We must, however, be careful to distinguish whether this relation is viewed *ex post* or *ex ante*. If viewed *ex post*, neither **A** nor **B** are commodities in possession of value; they are simple use-values ready to be consumed. Thus, in that case, the "exchange-values" merely record the terms of the past transaction, as reflected in the quantitative ratios between the two use-values. In such a case, I prefer to call them "exchange ratios" rather than "exchange-values".

The correct approach to the problem of exchange-value is not merely to calculate the quantitative ratio of use-values already traded, but to

"show that exchange value is the only form in which the value of commodities can manifest itself or be expressed" (*Capital*, I, p. 46). In other words, we must look at the above relation *ex ante* as the seller's proposed trade. Let us then consider the case in which the seller of **A** is making a trade proposal: "(*a* of **A**) is yours for (*b* of **B**)." In that case it is clear that the value of **A** is expressed by the *b/a* quantity of the use-value of **B**. The value of **A** can only be expressed by a definite quantity of the use-value of another commodity, in this case **B**.

A commodity must be exchanged, or sold, for another commodity in order to assert its social being, i.e. in order to prove itself a value-object. This makes the expression of the value of the commodity by its price, or exchange-value, a necessity. Since no commodity can express its value with its own use-value, it must seek another commodity the use-value of which is of interest to the owner of the original commodity. It is in the quantity of the use-value of the other commodity that the value of the original commodity can be expressed as its exchange-value.

* * *

Can the above relation of exchange be viewed simultaneously as trade proposals by both the seller of **A** and the seller of **B**? Can it mean both "(*a* of **A**) is yours for (*b* of **B**)" and "(*b* of **B**) is yours for (*a* of **A**)?" That would mean that a face-to-face barter agreement has already been reached, thanks to the so-called "double coincidence of wants", a rare occurrence. Such a happy coincidence does not, in principle, occur in capitalist society. Or rather it occurs, if it ever does, only by "happenstance" and not as a necessary consequence of the commodity-form. Thus, the dialectic is not only entitled but also obliged to ignore it. That is in sharp contrast to the practice of vulgar economics, which uncritically accepts the fallacy that commodity exchanges, even under capitalism, are essentially a generalised barter.

By "barter" I here mean the exchange of simple use-values between persons who come face to face with each other, and who are capable of directly negotiating the terms of trade. This is in contrast to the impersonal exchange of commodities in the market. These two types of exchanges are different not only conceptually but also in their historical origins. Ethnological and anthropological studies categorically deny that instances of simple barter "develop" into full-fledged commodity exchanges over time. Yet economists alone have clung to that false belief, with the litany of man's alleged "propensity to barter, truck and ex-

change one thing for another" (Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Oxford, 1976, vol. I, p. 25).

In fact, barter or exchange of use-values is, by its nature, limited in scope; it can never be "impersonal", which the market for commodity exchanges must be. It is precisely for this reason that a theory of exchanges based on barter (such as the neoclassical theory of "offer curves") can never explain where money comes from.

* * *

The reality of commodity exchanges must be explained by a principle that issues from the nature of commodities themselves. A commodity is offered for sale by its owner, who faces an impersonal market or society at large, not a person or persons who may be directly cajoled or browbeaten into buying it. The commodity seller has not as yet found the person to whom his commodity is a use-value. That is why he has to express the value of his commodity by pricing it first, and by thus "testing or probing" the market. There would be no such need, if he were already in direct contact with his customer. In capitalist society all commodities are traded as value precisely because, in principle, no commodity seller knows where his potential customers are.

This is another way of saying that the social significance (or convertibility into money) of any one commodity cannot be evaluated independently of the social significance of all other commodities. The interdependence of all commodities as value signifies the exchange of all commodities for all commodities, so that, e.g. "(*a* of **A**) for (*b* of **B**)" is not independent of "(*x* of **X**) for (*y* of **Y**)" in the same market. In fact any one of such exchange relations is no more than a thread, taken at random out of the whole fabric of commodity exchanges.

Such general commodity exchanges are always mediated by money, and are never a summation of moneyless barter exchanges. Thus if (*a* of **A**) was exchanged for (*b* of **B**), this in effect means that (*a* of **A**) was first sold for a sum of money, say $5, which was then used to buy (*b* of **B**). It is, therefore, necessary to show how money arises with commodity exchanges, or, more precisely, how the concept of money, already inherent in the commodity as its value or "moneyness", may now be brought out into the open.

1.2 EXPRESSIONS OF VALUE OR VALUE-FORMS

1.2.1 The Simple Form of Value

If I have a commodity, I attach to it a price tag and put it in the showcase for public inspection; then I wait for a response. Or else I advertise it in a newspaper, on a bulletin board, etc., furnishing a sufficiently detailed description of the commodity and quoting a price. I shall then wait for telephone calls. As the seller of the commodity I face an impersonal, open market. I am in no position to enforce my trade proposal since my customer, in all probability a total stranger, has not even made his appearance. The only thing I can do is to "price" the commodity, and thereby test or probe the market. This familiar experience encapsulates the essence of a commodity's expression of value. The theory of value-forms shows the need to "price" the commodity as a logical consequence of owning it.

Indeed all commodities in supermarkets, department stores, or anywhere else are bound to have a price tag asking to be purchased by someone for a definite amount of money. The money price, however, is only a developed form of the expression of the value of a commodity in the use-value of another commodity. If the purchasing-power of money becomes doubtful, for example in a state of hyper-inflation, a more primitive expression of value such as "this bottle of wine is yours for three pounds of butter" returns to the clearing-house of commodities. Such an expression belongs to the *simple form of value* which Marx illustrated with:

"20 yards of linen [=] one coat." (3)

The equality sign here has no mathematical meaning, however. It is, therefore, placed in brackets. It must be read "are yours for". This is an expression of the value of linen by its owner (seller) in the use-value of the coat.

In order to express its value, a commodity must free itself from its own use-value, as it were. Yet, given a commodity, its value and the correlative use-value cannot be separated. The owner of a commodity is, therefore, obliged to introduce, for its value expression, another commodity the use-value of which is of interest to him. In Marx's illustration above, the owner of linen suppresses its use-value by introducing, in its place, the alien use-value of the coat. He expresses the value of linen in its coat price. In so doing, the seller of linen

publicly announces that he is willing to part with 20 yards of it, if someone comes along with one coat of his liking.

* * *

In absolutely no circumstances should the expression of value such as (3) above be interpreted as direct barter of linen for a coat. The equality sign [=] does not imply that an actual trade is taking place. The expression of value is only a trade *proposal*, and not an actual trade. Thus the expression (3) by the linen-owner does not, in general, imply a reverse expression:

"One coat [=] 20 yards of linen." (4)

The presence of a coat-owner and his value expression are totally irrelevant at this point. Only the unilateral expression of the value of linen by its owner is in question now.

To emphasise the "one-way" relation, we may follow Marx in specifying that the commodity on the left-hand side of [=] occupies the "relative form of value", whereas the commodity on the right-hand side of [=] is in the "equivalent form of value". The value of the commodity (such as linen) which takes the relative value-form is projected onto the use-value of the commodity (such as the coat) which is in the equivalent value-form. The equivalent commodity serves as a use-value, the quantity of which in physical units reflects the value of the commodity for sale (the one which takes the relative value-form).

In stating the value expression (3), the linen-owner desires a very specific quantity of coat. In this case, he wants one coat of his liking, and not two or three, and most certainly and obviously not half or one-third of the coat. A use-value is desired only in a definite quantity. On the other hand, since he is interested only in the value, and not in the use-value, of his own commodity, he cannot be as definite about the appropriate quantity of linen to offer. He only hopes that someone will accept his proposed trade. If he waits too long before realising the original proposal, he may revise it to offer "25 yards of linen" for "one coat". If he finds that his original proposal is accepted too readily, he may offer "15 yards of linen" next time he wants to acquire "one coat". Thus, the quantity of the commodity for sale is tentative, and is subject to revisions, depending on society's response to the exchange proposal.

* * *

Thus, it is quite clear that in (3) the linen-owner is expressing the value of linen, not the value of 20 yards of it. The value of a commodity can be expressed because its quantity, offered in exchange for the definite quantity of an equivalent commodity, is tentative and subject to revision. The asymmetry between the commodity for sale and the equivalent commodity, i.e. the asymmetry between the seller and the purchaser, becomes even more striking if we consider the following fact: that the owner of the coat which the linen-seller desires can consummate, at a moment's notice, the trade proposal (3) already made, if he so decides. In other words, the owner of the coat possesses the immediate purchasing-power of the 20 yards of linen, by virtue of the already outstanding proposal (3). He is as good as having the money to buy the 20 yards of linen offered for sale, whether he wants to exercise that power at present for that purpose or not.

As the money-owner he has the choice of either jumping to accept the proposal, or waiting for a while to see what happens. His response will depend on the urgency of his individual need or want; he may either buy too quickly and miss the chance of letting the linen-owner offer more than 20 yards in return for his coat; or, by temporising for too long, he may lose the opportunity of buying linen altogether. The present theory, however, is not concerned with the private luck or misfortune of the individual coat-owner. It only concerns itself with how eagerly the impersonal, open market reacts to the linen-owner's proposed trade (3). After a number of experiments, the linen-owner will learn what the right number of yards of linen will be that he has to offer in order to induce one of the money-owners "out there" to come forward to accept his proposal.

Although the coat here plays the role of money, it is by no means a general purchasing-power as yet. Its ability to function as money is severely limited by the terms of the linen-owner's trade proposal (3). Only a particular kind of coat has the power to buy just 20 yards of linen. That coat has accidentally become the money to purchase the 20 yards of linen, by virtue of the standing proposal; and the proposal is there because the linen-owner just happens to desire one coat of particular description.

1.2.2 The Expanded Form of Value

The pricing of linen by the simple value-form introduces a particular equivalent commodity, such as coats, in a definite quantity of which

the linen-owner, as a consumer, happens to be interested. His want or desire, however, need not be limited to just one commodity. He may also want to consume sugar, wine, honey, etc. In that case, he expresses the value of linen in terms of all such commodities:

"20 yards of linen [=] one coat,
5 yards of linen [=] 3 pounds of sugar,
30 yards of linen [=] a gallon of wine, (5)
10 yards of linen [=] 20 oz. of honey,
etc."

This tabulation is an example of the *expanded form of value.*

As before, the quantities of the equivalent commodities on the right-hand side of [=], such as coats, sugar, etc., are definite. The quantities of linen the value of which is expressed are in each case tentative, and subject to revision in view of the market response. Actually, there are probably many linen-owners, all of whom want one gallon of wine. If some offer 35 yards and others only 25 yards of linen for it, the predictable result is that those who offer the most linen tend to realise their proposed trade first. Therefore, the linen-owners wanting to acquire a gallon of wine will be forced to make a realistic offer, and the wine price of linen tends to settle towards a certain uniform level, such as 30 yards of linen for one gallon.

The same adjustment must be presupposed in the simple value-form as well. The convergence to a realistic price is implicit in the fact that the quantity of the commodity in the relative value-form is tentative. However, the mechanism of the market that forces this convergence is not explicit even in the expanded value-form. It is merely taken for granted without adequate explanation, until physical money is introduced in the next chapter as the measure of value.

If, for all equivalent commodities that are demanded in specific quantities, the linen-owner offers a socially appropriate quantity of his linen in each case, then the entire trade proposal constitutes his and other sellers' expanded expression of the value of linen.

* * *

If there are only a few linen-owners, the list of equivalent commodities may be limited. With an increasing number of them, however, a large variety of equivalent commodities will be demanded in many different quantities. The expression of linen-value is, therefore, greatly enriched. It is no longer tied to the coat that a particular linen-owner

"accidentally" desires to consume, but a whole array of existing commodities can, in one way or another, serve as value-reflectors of linen. If there are many ways of expressing one and the same thing, its identity is more readily distinguishable from its accidental forms of expression. For example, from the fact that the falling of an apple is not the only way in which the force of gravitation manifests itself, it can easily be inferred that the gravitational force exists, prior to the falling of an apple. Similarly, if the value of linen is recognised as a quality that exists by itself, though only observed in terms of the use-value of this, that and the other commodity, it becomes clear that value is not a concept derivative of any particular form of pricing. In other words, a commodity has value (needs to be priced at all) prior to its having one particular price or another.

Of course, a thing without value (in the economic sense) can acquire a price for contingent reasons. For example, a painting by Picasso can be sold for a very high price, even though it has not been capitalistically produced as value, i.e. indifferently to its use-value. Such a special commodity (or commodity by chance), however, is not relevant in the present context. What is at issue here is that all capitalistically produced commodities are value-objects, and consequently must express their value by pricing themselves.

Only because linen has value and is a value-object can 30 yards of it be offered for a gallon of wine, 15 yards of it for three pounds of sugar, etc., regardless of whether these proposed exchanges are in fact realisable or not. Needless to say, value is always positive (> 0); otherwise it cannot be expressed. The price that expresses value is also always positive because a value expression requires a positive quantity of both the commodity for sale and the equivalent commodity.

* * *

If the owners of linen can express its value in this fashion, however, the owners of any other commodity can do the same. Hence, there will be an expanded value-form, or value expression, with regard to every commodity. There will be as many tabulations, like (5) above, as there are different commodities.

When all commodities express their value in the use-value of many others, little "monies" of all sorts proliferate in the system, each "money" possessing immediate power to purchase some other commodities under very complex qualitative and quantitative restrictions. For example, 3 pounds of sugar can immediately buy 15 yards of linen, and 4 pounds of sugar 19 yards of linen, but 2 pounds of sugar may be unable to

buy a single yard of linen. Although 20 ounces of honey can buy 10 yards of linen because of the linen-owners' value expression, 10 yards of linen may never be able to buy an ounce of honey because no honey-owner actually wants linen. The quantitative and qualitative restrictions imposed on these varied purchasing-powers are too numerous and extensive to allow the exchange of all commodities for one another in any desired proportions. It is only by the miraculous "double coincidences of wants" that some commodities may be exchanged for one another and withdrawn from the sphere of circulation.

This makes the present form of value expression grossly inadequate. For it does not bring out the real value of any commodity as yet. There remain too many contingent and arbitrary factors that obstruct the formation of a universal and integrated commodity exchange system. Only when such a system emerges, do value expressions occurring in it bring out the full import of the pricing of capitalistically produced commodities.

1.2.3 The General Form of Value

If all sellers express the value of their commodity in the expanded form, however, there is bound to be an equivalent commodity that is most commonly demanded by the trading world. Suppose that sugar is such an equivalent. Then from the expanded value expressions of the owners of linen, coats, honey, and many others, it is possible to collect the trade proposals in which sugar is the equivalent commodity, and display them in one table as follows:

"5 yards of linen [=] 3 pounds of sugar
One coat [=] 12 pounds of sugar
3 gallons of wine [=] 54 pounds of sugar (6)
11 ounces of honey [=] 23 pounds of sugar
etc."

Such a tabulation of value expressions leads us to a *general form of value*, in which sugar is the general equivalent.

Here, sugar emerges, by chance, as an immediate purchasing-power of many, if not all, commodities with a variety of quantitative and qualitative restrictions. These restrictions are to be expected, since (6) is not as yet fundamentally different from the two earlier value expressions. The owners of linen, coats, wine, honey, etc., are interested in the sweetness of sugar, and each wants to consume a definite amount

of it. That is why sugar becomes a common equivalent to all. Even then, the possibility of a triangular trade is not excluded. It may, for example, so happen that an owner of linen wants one coat and yet no coat-owner is interested in linen. In that case, however, it is now possible for the linen-owner to sell his 5 yards of linen four times for 12 pounds of sugar, and then use the latter to buy one coat.

No one needs to advise the linen-owner of the wisdom of the triangular trade. He, who has made the expanded trade proposals (5), may wait in vain to have his first offer (in the tabulation) accepted, while being successful a number of times in his second offer. Thus, he will soon find himself in possession of sufficient sugar, and this will eventually enable him to buy the coat. The experience is bound to teach him how to achieve his aim indirectly. However, if the linen-owner wants to get one gallon of wine indirectly through sugar, he will not be quite as successful. In that sense, (6) above has not as yet made a qualitative advance beyond the two earlier value expressions.

* * *

The possibility of an indirect trade, however, has a revolutionary meaning. If sugar is no longer wanted for the sake of its sweetness but for its purchasing-power of the coat or of wine, then it need not be demanded in any definite quantity. The linen-owner is no longer interested in the material use-value of sugar as a consumer. He is interested in sugar as mercantile wealth, which enables him to obtain other commodities, if enough of its quantity is possessed. The recognition of sugar as a general means of purchase implies that it has acquired the second use-value, which is abstract-social, in addition to its original use-value, the sweetness, which is concrete-material.

To the extent that this doubling of use-value is achieved, even those who were originally uninterested in the sweetness of sugar will now endeavour to acquire it as a general means of purchase. Very soon the expression of value of every commodity will take the form:

"All the available stock of my commodity	[=]	Whatever it is worth in sugar."	(7)

In this way sugar almost becomes the general equivalent of the trading system, in the sense that it is wanted by all commodity sellers, without quantitative and qualitative restrictions. I say "almost" because the uniqueness of the general equivalent is not yet established.

Even so, the vital step forward being taken here in the value expression of commodities must be appreciated. The commodity sellers are no longer mere consumers. They are merchants in pursuit of abstract mercantile wealth, more of which, to them, is better than less.

* * *

The only shortcoming of the value expression (7) lies in the fact that there may be more than one general equivalent. Suppose both sugar and honey are both general equivalents. In that case some commodities express their value in sugar and others in honey. The same commodity may even express its value in the two different forms simultaneously. How the commodity-owner chooses between sugar-pricing and honey-pricing is quite arbitrary, since it depends on various contingent factors.

This means that the owners of sugar may have to sell sugar for honey first in order to acquire with it some other commodities that they want, while the owners of honey too may in similar fashion be forced to sell their honey for sugar, in the first instance, so as to purchase some other commodities of their choice. Therefore, both sugar and honey are still "commodities for sale", which must express their value by occupying the posítion of the relative value-form.

The general equivalent of the trading system is a commodity which is *not* for sale, and hence does not have to express its value in the use-value of another commodity. In other words, it must be a commodity which occupies exclusively the position of the equivalent value-form. Only when such a commodity is found is the general form of value complete. A single monetary commodity, *the* general equivalent, is now irrevocably excluded from the family of ordinary commodities. At this point, all non-monetary commodities can be uniformly priced in terms of the general equivalent, and this uniform pricing ensures the establishment of one market, in which all commodities are exchanged for all commodities.

1.3 THE MONEY-FORM OF VALUE (MONEY PRICES)

1.3.1 The Choice of the General Equivalent

A trading system always singles out one monetary commodity as the general equivalent because no two use-values are exactly alike. One use-value is bound to be better qualified than another as the immediate

purchasing-power of all commodities. However, whether honey is superior to sugar or the other way around cannot be logically determined. The choice of a particular use-value for the general equivalent depends on the nature of the real economic life that underlies the trading system. History shows that a wide variety of commodities were used as the standard of pricing and means of exchange before the evolution of gold money.

The material property of primitive monies depended on the life-style of the traders. Hunting tribes, fishing communities, nomadic races, etc., engaged themselves in the exchange of different types of commodities from which emerged different materials for money. However, as trade among peoples developed, joining hitherto separate spheres of commodity exchanges, one general equivalent superseded another, until eventually metallic coins were introduced because they suited commercial activity which, by this time, extended over a wide range of cultures and civilisations. (This description here is in the nature of a parable, and is not intended to serve as a short empirical history of money).

Of all the precious metals gold is particularly suited to serve as the universal reflector of values. There are several reasons for this. Gold can be divided into parts or fused together into a whole, without altering its quality. It has a high degree of social significance even in its smallest portion, so that it is relatively easy to carry and store. Its material property can be preserved almost indefinitely, so that value can be retained in it more safely than in other metals. Furthermore, and this is important, gold is not absolutely necessary for any society's survival. It is this last property that makes gold a particularly dependable commodity in which to reflect values.

* * *

The general equivalent, by its very nature, must *not* be a commodity which has use-value properties that make it indispensable to the daily life of the community, or, at any rate, a commodity which is to be immediately consumed. Often, it is a foreign commodity or one readily transferable to alien merchants. If the general equivalent comes from outside the community, it tends to be an object which was acquired for symbolic and ornamental purposes. If it arises inside the community, it is likely to be a surplus commodity which is habitually stored and set aside from immediate consumption.

Marx writes: "The particular kind of commodity to which [the character of a general equivalent] sticks is at first a matter of accident. Nevertheless, there

are two circumstances whose influence is decisive. The money-form attaches itself either to the most important articles of exchange from outside, and these in fact are primitive and natural forms in which the exchange value of home products finds expression; or else it attaches itself to the object of utility that forms, like cattle, the chief portion of indigenous alienable wealth" (*Capital*, I, p. 92).

Since the general equivalent is not demanded primarily for direct consumption, but rather for its abstract social virtue of being immediately exchangeable for other commodities, a monetary commodity must perforce be one which has a use-value that is the remotest from day-to-day consumption. An object of immediate consumption is the least likely to become the general equivalent because, for one thing, the appreciation of its use-value tends to differ from one person to another, and also from time to time. A commodity which has a use-value that is remote from the urgency of day-to-day consumption is more suitable for the purpose, since it is dispensable, i.e. since its possession is more a matter of prestige and ostentation than a matter of life and death.

Although gold satisfies non-monetary needs as well, the shortage of gold does not cripple the real economic life of any community, nor is its surplus particularly onerous. It is for this reason that the monetary and non-monetary demand for gold do not compete with each other, and this has the effect of stabilising gold prices. If bricks were used as money, the situation would be very different. Since the monetary and the non-monetary demand for them would compete with each other, the price of bricks would be highly volatile upward and downward, whenever they are either underproduced or overproduced by chance. A use-value too close to day-to-day consumption is, therefore, an unlikely candidate for the general equivalent. A monetary commodity is bound to be the one whose non-monetary use-value is of little material consequence.

* * *

The selection of gold as *the* general equivalent, or money, completes the value expression of all commodities in the form of prices. The values of all commodities can now be expressed exclusively in the use-value of gold, which is the single value-reflecting object or the general equivalent. When gold is confirmed in this position, other commodities cease to act as an equivalent in the value expression of their owners. By jointly renouncing value expressions in the use-value of anything but gold, the owners of ordinary commodities definitely isolate gold as the general equivalent. Gold is, in consequence, elevated

one step above the ranks of ordinary commodities and can permanently occupy the privileged position of the value-reflector.

Having thus become the general purchasing-power, gold can no longer stand in the position of the relative-value form. It is no longer a commodity for sale; it is instead the general means of purchase. As Marx writes, "if the linen or any other commodity, serving as universal equivalent were to share in the relative form of value, it would have to serve as its own equivalent. We would then have 20 yards of linen = 20 yards of linen; this tautology expresses neither value nor magnitude of value" (*Capital*, I, p. 74). Indeed, the value of gold cannot be expressed in the use-value of gold itself. Neither is it necessary for gold, which has already been chosen as the general equivalent, to express its value in the use-value of any other commodity. For the use-value of monetary gold has already become abstract-social.

The upshot of the above explanation is that monetary gold no longer possesses a concrete-material use-value, i.e. a use-value proper. Therefore, the physical body of gold, as the monetary metal, can express its value directly instead of indirectly by reflecting the latter in the use-value of another commodity. By this time, the values of all commodities have become gold in the minds of their owners, all values now being expressible uniformly in quantities of gold. The social uniformity of value has its material representation in the homogeneousness of the metal. Value is gold-like in being perfectly homogeneous, divisible and additive. In gold, value has found its own mirror-image, its *alter ego*.

1.3.2 The Price-Form of Value

Once a particular commodity is chosen as the general equivalent, on account of its use-value, the general form of value (7) can be renamed as the *money-form of value*. The difference between the two forms, in other words, lies only in whether the general equivalent remains arbitrary and hypothetical or has been identified in real terms. Thus the money-form of value is like earlier value-forms in that the value of the commodity for sale is still expressed in the use-value of another (i.e. an equivalent) commodity, except that the latter has been socially singled out to be the monetary commodity.

If gold is selected to be that commodity, then the values of all other commodities are uniformly expressed in the use-value of gold. However, since gold as the object of direct consumption is relatively inconsequential, its abstract-social use-value of being a general purchasing-power prevails. That is the reason why it is selected to serve as the

general reflector of value. Precisely for that reason, moreover, commodity sellers no longer demand gold in definite quantities in order to satisfy their immediate need. They each seek to sell all the available stock of their commodity for whatever it is worth in gold. The selling of a commodity becomes the quest for a maximum amount of gold.

At this point, the *price-form of value* emerges as an alternative formulation of the money-form:

$$\begin{aligned} &\text{"One unit of commodity } \mathbf{A} \text{ [=] } p_a \text{ units of gold,} \\ &\text{One unit of commodity } \mathbf{B} \text{ [=] } p_b \text{ units of gold,} \\ &\text{etc."} \end{aligned} \tag{8}$$

Here, p_a, p_b, ... are the supply prices of commodities **A**, **B**, ... Since all commodity sellers demand gold as the general equivalent without a definite limit, the commodities can now express their values in gold on a "per unit" basis.

* * *

Thus, if I have a commodity called **J** for sale, I merely put a sample of it in the showcase with the price tag of p_j, and wait for customers to arrive for its purchase. Each will buy some of it until my stock of **J** is exhausted. At this point the value of my commodity-**J** has already become the p_j-quantity of gold per unit "in my head", this quantity of gold being the *alter ego* of the value of commodity-**J**. Thus, if someone asks me what the value of my commodity-**J** is like, I shall answer that each unit of it is like the p_j-quantity of gold. Sometimes money is described as the *Fürsichsein* (being-for-self) of value. It means that money (gold) physically brings out the image of value. One is, therefore, justified in thinking of value as the "moneyness" of the commodity.

With the money- or price-form the value expression of commodities is completed. The expression of value is now a matter of pricing all commodities in terms of gold, the use-value of which is demanded not for the direct satisfaction of personal needs, but for its ability to purchase all other commodities. When gold is used as the instrument (standard) of pricing, it is given special names such as pounds, dollars, francs, yen, etc., and the purity of the metal is assured.

The pricing, however, remains the responsibility of the sellers who want to realise the value of their commodity. If they overprice it, they may fail to sell; if they underprice it, they realise less value than they would otherwise have been able to. Hence, they must constantly observe

the reaction of the market, in the light of which they must revise their supply prices. By pricing commodities, the sellers only propose a trade without any ability to consummate it. Purchasers alone, as money-owners, have the initiative in actualising the trade which has been proposed. For only money has direct purchasing-power over all commodities.

* * *

The value of a commodity is at first recognised as a non-use-value by its owner, i.e. a negation of its use-value. This negation, however, is a private business. The owner of the commodity negates its use-value by offering it in exchange for another use-value which he himself wishes to consume, instead of the use-value of his own commodity. This is a negation, or dismissal, of one use-value but not of the other, so that the commodity is not yet free from all use-value constraints. It is dependent on the use-values that its owner wants as a consumer. Thus, the expression of value is still constrained by the fact that commodities matter as use-values to some individual consumers.

This constraint is removed in the money-form of value. Here, commodities are no longer viewed as heterogeneous use-values which are of interest to some individual consumers, but as qualitatively homogeneous units of gold which possess the abstract-social use-value of constituting part of society's mercantile wealth. The fact that commodities are socially uniform as value, notwithstanding the heterogeneity of their respective use-values, is now concretely established, that is to say, not only in our minds but also in reality. All commodities are priced because their values become gold in the minds of their sellers.

If each commodity is priced, it at once becomes possible to aggregate all commodities offered for sale during any time period, and talk of their aggregate money value, of which each commodity constitutes a fraction. The relation of the whole and the parts also becomes a reality when the system of commodity exchanges is truly integrated by money, since money possesses immediate purchasing-power over all commodities. The perfect divisibility and additivity of value as the social quality of commodities are now concretely achieved.

1.3.3 The System of Commodity Exchanges

What money prices express is not a physical relation between gold and all other use-values. It is a "social" relation of commodities among themselves as values. Money which commodities themselves generate, by excluding one of their own as the general value-reflector, need not

as yet exist physically (though it must exist in the minds of the commodity-owners). In order to establish the social interaction of all commodities, it is quite sufficient that commodities are merely priced in terms of gold money. The actual purchase of commodities is not yet in question.

The presence of money prices for which commodities are offered in exchange shows that their values cannot be adequately expressed by the exchange-ratio of one commodity for another, but only by the relation of universal exchangeability of all commodities among themselves. Money in the minds of the commodity-owners establishes this relation.

If commodities are thus inter-related by means of money, however, the relation of demand and supply, which was already implicit in the simplest form of value, is brought out more clearly. Ordinary commodities, which can no longer stand in the position of the equivalent value-form, but which must always stand in that of the relative value-form, are "supplied" for money. Money, which never takes the position of the relative value-form, "demands" commodities. That is why money buys commodities, though commodities do not buy money. The potential sellers and the potential buyers of commodities come together to form a market, in which the sellers (commodity-owners) represent the forces of supply and the buyers (money-owners) represent the forces of demand.

* * *

When all commodity-owners face the open market with their supply prices, the existence of demand for all commodities at varying (positive) prices is taken for granted. If there is no social demand for wine at any price, wine must long ago have ceased to be a commodity and its owner would not be proposing to trade it off for anything. Over and against all the commodity suppliers are the money-owners with their purchase plans. The commodity sellers and the money-owners are, however, the same persons belonging to the same market. For apart from the special case of gold-producers, who may at this point be ignored, all money-owners have obtained money by previously selling commodities.

This fact, however, in no way overrules the fundamental asymmetry between the selling and the purchasing of commodities. If I sell the quantity *a* of commodity **A** for $5, which I then use to buy the quantity *b* of commodity **B**, that should not be interpreted as a direct, face-to-face barter of:

(*a* of **A**) for (*b* of **B**).

First, as the seller I face the open market with the value expression: "(*a* of **A**) is yours for $5." If this trade proposal is accepted by someone and I in fact obtain $5, then I go back to the market with the purchase plan: "I pay $5 for (*b* of **B**)." *This purchase-plan is not a value expression.* It is rather a search in the market for someone's value expression which says "(*b* of **B**) is yours for $5." Thus when I go through the exchange-process (*a* of **A**) for $5 for (*b* of **B**), or C – M – C′, the act of sale C – M and the act of purchase M – C′ are two qualitatively different steps and cannot be simply collapsed into one act of exchange C – C′. (Here C and C′ represent Commodities, and M money.)

In other words, commodities are never directly exchanged or bartered one for another. They can be exchanged only with the mediation of money. The generation of money from the value expression of commodities is, therefore, a prerequisite for a truly universal exchange of commodities. It is this fact that clearly distinguishes commodities from mere goods. The neoclassical theory of exchange overlooks this fundamental point, and reduces commodity exchanges to a generalised exchange of use-values. The latter, of course, is a pure figment of the imagination.

* * *

The theory of commodities, however, does not explicitly treat the actual process of exchange, but rather the forms of value expression adopted by commodities. Money with which commodities must be purchased is generated from the value expression of commodities themselves. It is indeed common sense to think of money at the first mention of commodities, but it is more than common sense to theoretically identify money as an element lying hidden in the very concept of the commodity, an object possessed by an individual willing to dispose of it socially.

The value of a commodity must be asserted by its owner in anticipation of society's acknowledgement. It is from this fact that the need for the expression of value follows. In expressing the value of a commodity, I, the owner, in effect say that it must be useful to someone. This "someone" becomes increasingly abstract and impersonal as my expression of value perfects itself. First, this "someone" is "whoever is willing to take my commodity in exchange for a particular use-value that I am personally interested in". Later he becomes more general in that he need not possess a use-value that directly interests me.

He must only come forward with money, for everyone is interested in it.

The expression of value remains imperfect so long as the commodity-owner views the use-value of the equivalent commodity as substantive and material, i.e. so long as he is a consumer. The nature of the commodity requires that he should transcend his private interest in consumption, and grow into a genuine merchant. Only then will he become a full member of capitalist society. The commodity seller whose value expression has been studied in this chapter is, in fact, the full-blown capitalist, appearing, at this level of abstraction, only in his most rudimentary activity.

2 The Functions of Money

2.1 MONEY AS THE MEASURE OF VALUE

2.1.1 The Means of Purchase

If a commodity is merely priced, its value is "expressed" but not "measured". To price a commodity is simply to imagine that it can be sold for a certain amount of gold. That is a private, rather than a social act, even though the supply price is stated in terms of the socially chosen, instead of a privately needed, equivalent. Only when the supply price is equated to the demand price, can we say that the value of a commodity is "measured".

A commodity has to express its "immanent" value, which cannot be directly seen. The value of a commodity is, as it were, "wrapped" in a use-value. In money, however, the wrapper becomes transparent, since the material use-value of gold is remote from day-to-day consumption, and is overshadowed by its social and neutral use-value of providing its possessor with a power of immediate purchase. Monetary gold is, in other words, a special commodity which overcomes its use-value restrictions as completely as any commodity can. In the monetary commodity, value is made apparent or "externalised", rather than held immanent and implicit in a use-value.

It is precisely for this reason that money need not express its value, and be sold for any other commodity. It is by itself the immediate *means of purchase*. When this point was established by the money-form of value, however, money, as the means of purchase, existed only in the minds of commodity sellers. In order for money to actually function as the means of purchase, its physical presence is required. The money-owner, or the purchaser, must now enter the stage with physical money to pay for commodities. Every time these are purchased in exchange for gold, their supply prices and demand prices are brought closer together. This is the process of the measurement of commodity value.

* * *

Nothing short of a commodity possessed of its own value can act as money, i.e. as the means of purchase. For otherwise it would not

have been demanded as an equivalent, or a value-reflecting object, nor would it ever have acquired the immediate purchasing-power of any commodity. A commodity money must, of course, be a use-value with its quantity countable in some physical or natural units. Gold, for instance, is a metal the quantity of which is usually reckoned in units of weight, once its purity is ascertained.

If the weight-unit for ordinary gold and that for monetary gold are different, the ratio is called the *mint-price*. For example, gold money of sterling purity is counted in pounds sterling, but gold of the same purity may be counted in pounds troy, if it is not used as money. The mint price, however, does not fix an invariable measure of value. Suppose, for instance, that linen were the monetary commodity, and that the mint-price were defined as "three ordinary yards of linen ≡ one monetary yard of linen". It is obvious that this definition does not fix the value of linen. What remains unchanged is the mint-price of 3:1, even if the linen value today were ten times more than that of yesterday's. The mint-price only stipulates an administrative agreement that all commodity prices shall be stated in monetary yards (rather than ordinary yards) of linen, and that a fixed ratio shall apply in converting monetary into ordinary yards of linen. The adoption of a mint-price provides us with a "standard of price" but does not give us a fixed or invariable "measure of value", in the well known terminology of Marx (*Capital*, I, p. 100).

* * *

How then is it possible for a monetary commodity such as gold, with its own value never fixed, to measure the value of other commodities? The operation of measuring the value of a commodity cannot be understood in the same way as applying a ruler externally to a physical object in order to find its length. As the standard of length, the ruler must be made of a material that would vary least under the effects of temperature, humidity and other surrounding conditions. The absolute invariability in the length of the ruler itself may, however, be difficult to obtain. Often we wish to measure the lengths of things made of materials which are less resistant to the variability of such surrounding conditions. Even then, a close enough approximation to the length of a physical object can be determined.

Suppose that we want to measure the length of a steel bar with a ruler made of platinum. Both steel and platinum change their lengths under the influence of surrounding conditions. After a number of experiments, however, the statistics of measurement may be recorded as

between, say, 3cm and 5cm. If the statistics do not converge to some measure such as 4.2cm as the frequency of experiments increases, it can be concluded that the object has no definite length. If they converge to a definite measure, say, 4.2cm, then that can be taken to be an adequate measure of the length of the steel bar as revealed by the platinum ruler. In other words, the length of the object can be determined, subject to the statistical law of large number, by the conventionally agreed procedure. Here, the frequency distribution of the statistics of measurement is assumed as given and invariant to the act of measurement itself.

In the measurement of commodity value such an assumption is unwarranted. Suppose that two persons are wanting to sell similar apples in the open market, one offering 100 of them for 30¢ apiece, and the other also 100 of them for 50¢ apiece. Suppose that, in the next hour, twelve apples are sold for 30¢ apiece and five for 50¢ apiece. Then in light of that market response, the first seller may revise his price to 38¢, and the second to 44¢. Let us then suppose that, in the next hour, eight apples are sold for 38¢ and six for 44¢ apiece. Again a further revision of supply prices will occur. Let us suppose that eventually both sellers charge 41¢ apiece, selling seven apples per hour each; and this situation is maintained until all the remaining apples are sold. Then we see that the apple price has tended towards 41¢ apiece. This tendency, however, has not been generated by the law of large number, but by the principle of demand and supply. Let us examine that principle further.

2.1.2 The Formation of Normal Prices

The measurement of the value of a commodity implies an effort, on the part of its sellers, to make it as dear as possible and a counter-effort, on the part of its purchasers, to make it as cheap as possible. Buying cheap and selling dear is the principle of demand and supply. This principle does not, however, reveal the value of any commodity in a once-for-all, isolated trade. It must be applied repetitively to the trade of the same commodity a great number of times, before its price settles to a normal level. It is this *normal price* which equates the supply price and the demand price and thus measures the value of the commodity. A normal price of the commodity emerges as the principle of demand and supply works its way through the economy by means of a repetitive purchase of the commodity.

If, for example, a small painting by Picasso is sold by auction for a

few million dollars, this price is not "normal". Nor does it reflect any value. Since the painting cannot be capitalistically reproduced, only one unique sample of it can be sold. It is not a genuine commodity which is what concerns us here; nor does it have value (in the economic sense). It is only a good which has accidentally assumed the form of a commodity in this auction. The same considerations apply to such things as antiques, collectors' items, used books, rare quality wines, and artistic objects of all kinds. They cannot be reproduced in any desired amount, and certainly not in a capitalist factory, unless they are fake. Since their supplies are absolutely limited, their prices tend to be quite arbitrary and depend on many contingent factors.

A capitalistically produced commodity, by contrast, is reproducible, and hence can, in principle, be supplied in any quantity (in any number of interchangeable samples). It is widely and frequently traded in an impersonal market, in which a large number of unidentified sellers face a large number of unidentified buyers. Since they cannot come into direct contact with one another and agree on the price by negotiation, they can only respond to the market price, already made observable by previous trade. If the price is too high, the purchasers take only a small quantity from the market, forcing the sellers who want to sell more to reduce their prices. If the price is too low, the purchasers begin to form a queue outside the store, enabling the sellers who wish to "slow down" to raise the price. Thus the sellers constantly revise their supply prices, as they "grope for" the normal price.

* * *

The seller perceives the intensity of demand for his commodity by the speed with which he sells it, i.e. by the speed with which the inventory of his stock depletes. The merchant seller of a commodity cannot wait indefinitely because time can spoil its use-value, or otherwise cause him expenses. Nor can he expect to sell as soon as he obtains a commodity, for selling is typically a time-consuming business. Each seller, therefore, allows for a given length of time, T^0, to be a normal period, within which he strives to dispose of his commodity. But the actual length of the selling time, $T(p)$, depends on the price that he charges. It may be assumed that $T(p)$ is a continuous curve with a positive slope. If the price p is set too high, the market responds slowly, so that $T(p) > T^0$; if the price is set too low, the reverse is the case, so that $T(p) < T^0$.

It is entirely reasonable to suppose that the function $T(p)$, defined for all positive prices, is continuous and has an upward slope. It is also

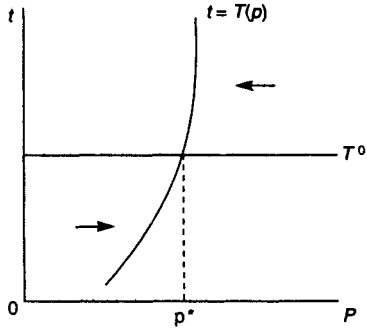


Figure 2.1

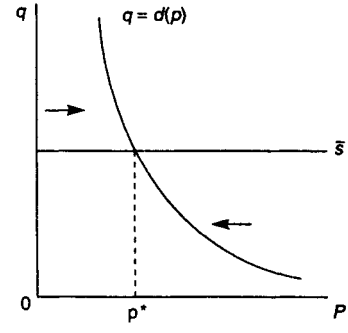


Figure 2.2

reasonable to suppose that the seller reduces the price if the commodity is slow to sell, and raises the price if it sells promptly. Thus, the revision of the price by the seller can be formally expressed by the relation

$$\frac{dp}{dt} = f[T^0 - T(p)]$$

with a continuous positive transformation f, indicating the speed of adjustment. By the nature of these relations, it is safe to assume that there exists a p^* at which $T(p^*) = T^0$, and that the price adjustment ceases there, i.e. $dp/dt = 0$ when $p = p^*$.

Taking a longer time to sell a given quantity is equivalent to selling less during a given time period, and vice versa. Therefore, the above theory can be rephrased in a "per unit of time" dimension as follows. Let $\bar{s}$ be the desired volume of sale for the unit of time. If $p < p^*$, more than $\bar{s}$ must be sold, so that $q > \bar{s}$; if $p > p^*$, less than $\bar{s}$ must be sold, so that $q < \bar{s}$. Thus by relating the volumes sold, q for all prices, p, one gets the familiar demand curve, $q = d(p)$, which continuously slopes downward.

It may be thought that the allowance for a reasonable length T^0 of the selling time can differ from one seller to another, even when the same commodity is involved. Of course, some dispersion of T^0 around a mean may not be avoided, so that, if the sellers operate in a market in which the same $T(p)$ prevails, those with a relatively longer T^0 tend to sell at a p^* higher than those with a relatively shorter T^0. The difference, however cannot be too great; for those with the shortest T^0 will be the first ones to sell, and those with the longest T^0 the last.

Experience soon teaches the seller to be neither too dilatory nor too impatient. In other words, competition imposes a T^0 which corresponds to the social norm. Thus, even though a small dispersion around the norm may persist, the market tends to determine a unique normal price p^* for each and every commodity.

* * *

What is called the normal price of a commodity here is, in fact, its equilibrium price. The formation of equilibrium prices, however, cannot be adequately discussed until the technology of commodity production and the structure of social demand are made explicit. For example, one can talk of an equilibrium price of sugar, only when it is known how much sugar is wanted in society, under what technical conditions it is produced, and what level of the general rate of profit prevails in the market. Such details are deliberately left implicit in this early stage of the dialectic. Here, capitalist society is examined from the outside in its most abstract context of simple circulation. It is yet to be grounded in real economic life. Correspondingly, an equilibrium price appears here in the more abstract, i.e. less specified and emptier, form of a "normal" price.

For the same reason a normal price "measures" the value of a commodity rather than "determines" it. In order to determine the value of a commodity substantively, one must know the conditions under which a socially necessary (equilibrium) quantity of the commodity may be produced, information which is not available at present. At this point, value is known only as the "moneyness" of the commodity without its substantive specification as socially necessary labour. Yet, these considerations do not invalidate the fact that, behind the measurement of value, does lie its determination. The normal price of a capitalistically reproducible commodity is attained by the equalisation of the demand for it and the supply of it, which further implies that it is neither overproduced nor underproduced.

What all this amounts to is that the production of this particular commodity takes an appropriate allocation of society's resources, relative to the gold-producing sector. A general equilibrium, of course, implies that society's productive resources are optimally allocated to all spheres of production. This result, however, is never directly obtained. It is obtained when each sphere of commodity production regulates itself in relation to the gold-producing sector, assuming that all the other spheres of commodity production are already brought into line with gold production. If a particular commodity is overproduced, so

that its price is below normal, this indicates the fact that its production at the margin has unwarrantably taken away too many units of resources from the gold-producing sector. If it is underproduced, so that its price is above normal, its production at the margin has not drawn enough resources away from the gold-producing sector. In both cases, however, the principle of demand and supply works in such a way as to reallocate resources, and to adjust the price such that a normal price emerges. It is this familiar process that is observed here, albeit from the outside and in a very abstract fashion, as money functions to measure the value of a commodity, and in so doing, to establish its normal price.

2.1.3 The Sphere of Commodity Circulation

If the normal prices of all commodities ($p_1^*, p_2^*, \ldots, p_n^*$), are established in a given market, the aggregate money value ($p_1^*x_1 + p_2^*x_2 + \ldots p_n^*x_n$) of all commodities that are traded during a specified period of time ($x_1, x_2, \ldots x_n$) will be known. This aggregate is the monetary expression of the total value of traded commodities. For example, if 1,000 apples and 500 pears are traded at the normal prices of 41¢ and 50¢ each respectively, then the aggregate money value is $660. The fact of the matter is, however, that many of the 1,000 apples are not sold for 41¢ apiece, nor are many of the 500 pears sold for 50¢ apiece. It is, therefore, not correct to conclude that all commodities are traded literally at their normal prices. The normal price of a commodity is the limit towards which its market prices gravitate, but which they may not actually reach. Nevertheless, it is warranted to conceive of notional trade at a normal price because that is an abstraction inherent in the nature of things, rather than a convention arbitrarily adopted by the observer and imposed on reality (such as, for example, conceiving of trade at an average of empirically observed market prices).

One cannot know how much money had to be spent before the normal price of a commodity is established or even approximated. Money that measures the value of a commodity, by purchasing it repetitively a great number of times, must, therefore, be said to be an indefinite quantity. Yet each time money is used in an individual act of purchase, it must always be a specific quantity. For example, to buy 500 pears for 45¢ apiece, one has to spend $225. In other words, each individual act of purchase, the repetition of which measures the value of the commodity, involves a definite quantity or sum of money.

This comes from the fact that the purchase act of an individual money-

owner is specific in each case, depending on his private needs at a given moment in time. The same fact also means that the purchaser of a commodity must be in possession of an adequate supply of money as the occasion demands. Money, as the means of purchase, can indeed buy any commodity without restriction because it is society's general equivalent. Yet each time $100 are spent, they can buy no more than a 100 dollars' worth of commodities. Therefore, the purchasing-power of money is always quantitatively limited in each and every instance of trade.

* * *

The above conclusion then raises the question as to where the trader obtains the money that he uses, on this or that occasion, to purchase commodities. First, it is clear that gold-producers can become money-owners immediately. It is true that gold too is a capitalistically produced commodity. Its production uses up society's resources which could, under different circumstances, have been used for the production of other commodities. That is why it has a value of its own like any other capitalistically produced commodity. Yet gold, as the general equivalent, has no value-*form* or price, since it is a means of purchase and not a commodity for sale. Therefore, anyone who produces gold is automatically in possession of the purchasing-power of any commodity.

It is, however, not true that all of the currently produced gold is used as money. Only part of it will be. Moreover, the part that is currently added to the existing stock of money is usually a very small proportion of the latter. Thus, even though gold-producers are immediately money-owners, the majority of money-owners cannot be gold-producers. They must have obtained their money by previously selling their own commodities. It follows then that, with the exception of the current gold-producers, who must be in the minority, the money-owners, who alone can freely purchase commodities, are (or have been) themselves commodity-sellers.

There are indeed no pure consumers in the market, or sphere of commodity circulation, who acquire the means of purchase for some obscure reasons. Both the sellers and the purchasers of commodities are merchant-traders, who constantly change positions, now standing on the supply side and then on the demand side. The commodity-economy is fundamentally a mercantile system, and not a generalised barter system in which consumers and producers directly confront each other, and agree on some negotiated terms of trade.

* * *

If most money-owners are former commodity-sellers, then their act of purchase, M – C′, must be preceded by their act of sale, C – M; and the sequence of sale and purchase, C – M – C′, amounts to the exchange of one commodity, C, for another, C′, mediated by money, M. In the act of sale, C – M, money is not acquired as an article of consumption, and hence can be used as the means of purchase of other commodities.

Having been acquired by the sale of a commodity, the means of purchase is qualitatively free, in the sense that it possesses the immediate purchasing-power of any other commodity. Its use-value has abandoned a concrete-specific, material character, and has assumed instead an abstract-general, social character. Yet it is not quantitatively free because its quantity is restricted by the value of the commodity previously sold. For example, if someone has sold ten apples for 41¢ apiece and now possesses $4.10, then he can purchase only up to 8.2 pears for 50¢ apiece. As regards his ability to buy some pears, no restriction applies, since $4.10 possess the power to purchase *any* commodity, whether a pear or any other. The quantitative restriction, however, remains binding in that he cannot buy more than 8.2 units, if he chooses to buy pears.

If in this way the means of purchase is qualitatively free but quantitatively restricted, it follows that the function of money as the measure of value is also subject to this restriction. Money measures the value of a commodity by purchasing it repetitively. In each case, however, the money used as the means of purchase (apart from the exceptional case of gold production) has been acquired by the prior sales of other commodities, and is limited in quantity. The totality of the means of purchase functioning as the measure of value is, therefore, also a limited quantity, though it is impossible to say how often (repetitively) that limited quantity needs to be used in order to establish normal prices. It is money in C – M – C′ that, in fact, measures the values of all commodities, while acting also as the means of circulation.

2.2 MONEY AS THE MEDIUM OF CIRCULATION

2.2.1 The Network of Commodity Exchanges

Except for the direct producers of gold, every trader acquires money, needed for the purchase (M – C′) of commodities belonging to others, by the sale (C – M) of his own commodity. If purchase follows sale

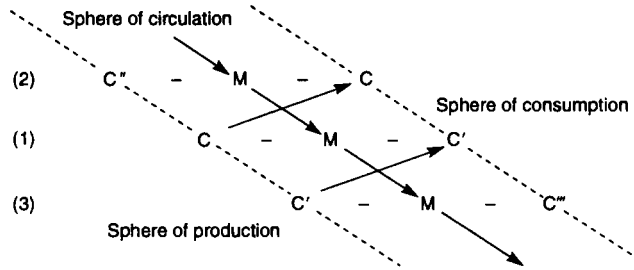


Figure 2.3

almost immediately, that is, within the same conventionally agreed "market-period", he keeps money in his pocket only for a short while, and never carries it over to the following market-period or to a more distant one in the future. Money which does not stay long in the pocket of the seller in this sense mediates the exchange of a commodity (C) for another commodity (C′). In this way, money serves as the *medium (means) of circulation*, also known as active money or transactions money, as it mediates commodity exchanges.

In the sale of a commodity, however, its owner has no initiative and cannot, for his part, enforce the trade. For someone to be able to sell (C – M), someone else must purchase (M – C). Thus, if an individual trader has accomplished the exchange of a commodity, C, for another, C′, in the process described by C – M – C′, that already implies the presence of a buyer of C and the seller of C′. If the first of these persons has sold C″, and the second purchases C‴, the complete exchange of C for C′ "implies four extremes and three dramatis personae" (*Capital*, I, p. 113), i.e. C, C′, C″, C‴ and (1), (2), (3) at the least, as illustrated in Figure 2.3 above. However, for the second person (2) to be able to sell: C″ – M, there must be yet another person behind this chain who buys: M – C″; and if the third person (3) has purchased: M – C‴, someone behind the scene must have sold: C‴ – M, etc. Therefore, the network of commodity transactions, as illustrated in Figure 2.3 is self-extensive both upwards and downwards.

It is supposed here that all commodities are traded at normal prices, and, also for the sake of simplicity, that each person buys and sells commodities of the same money value. In reality, however, prices diverge from the normal and a person may not spend all the money that he earns, or he may spend more than he currently earns. Therefore, the network of commodity transactions is by no means as simple as is

schematically represented here. Yet, even apart from these complexities, the following two facts are obvious: (i) The exchange of commodities cannot be accomplished simply by an individual person; it can be accomplished only as a joint action of all individuals who participate in the sphere of commodity circulation. (ii) The network of commodity exchanges is self-extensive, tending to involve more and more traders and an increasing variety of commodities.

* * *

It is by means of this system of commodity exchanges that real economic life can be integrated more extensively than otherwise. Since commodities are products, their exchanges imply an interpersonal transfer of products, and hence also the social interaction of producers and consumers. A communal economy, in which products are transferred directly from one person to another, rather than through commodity exchanges, retains its natural size and will not develop as generally and extensively. A commodity-economy which is based on the market, or sphere of commodity circulation, however, is not constrained by any natural size because commodities can be traded quite impersonally. The market does not ask who produced the commodities, nor does it care who will consume them. It ignores the past (origin) and the future (end) of the commodities.

It is for this reason that the social interaction of producers and consumers, which characterises the real economic life of society, is no longer directly visible. In the sphere of circulation human relations in society appear as physical relations among commodities. The sphere of production and the sphere of consumption are separated by the sphere of circulation, through which products silently migrate as commodities. In a system of universal commodity exchanges, which camouflage the economic relations among persons, all traditional, cultural and geographical barriers tend to be eroded, thus permitting the formation of a truly extensive and integrated whole.

Although the network of exchanges is inherently self-extensive, its scope cannot be unlimited at any given time and place. For only a finite number of traders and commodities, however many, can participate in a given market. During any specified market-period only a finite number of commodities can be exchanged in definite quantities.

* * *

A chain of commodity transactions can always be closed by equating the first commodity to enter the market with the last commodity to

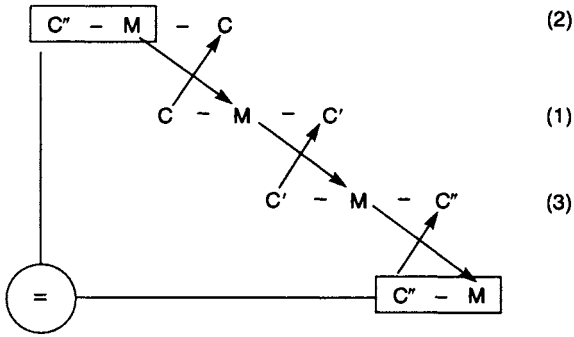


Figure 2.4

exit from it, i.e. by letting C″ = C‴ in the case of the simplest (smallest) chain involving three persons. This is shown in Figure 2.4. In this case, there are only three traders (1), (2), (3) and three commodities C, C′, C″. All traders sell and buy, and all commodities are sold and bought. Thus, society's exchange system may be represented by

$$(C + C' + C'') - M - (C + C' + C'')$$

or more generally

$$\Sigma p_i^* x_i - M - \Sigma p_i^* x_i \qquad (i = 1, \ldots, n).$$

This representation has the advantage of showing that society exchanges all commodities for all commodities, with the mediation of money, although individual traders always exchange one commodity, or one set of commodities, for another.

It is important to recognise that the money that mediates an individual exchange of commodities, C – M – C′, and the money that accomplishes the social exchange of all commodities for all commodities, $\Sigma p_i^* x_i - M - \Sigma p_i^* x_i$, are the same. The chain of commodity transactions consists of individual links, but these links are brought together into a whole chain by money which functions as the means of circulation. Since money in this capacity is never held for long in the pockets of traders, it may be viewed as staying permanently in the sphere of circulation, as a definite quantity M_c. This quantity of money divides itself into units of various magnitudes, assisting the circulation, or

temporary migration through the market, of commodities which originate in the sphere of production and retire into the sphere of consumption.

By far the most important message delivered so far is that, without money's mediation, there are no commodity exchanges, and that, since money is not a mere veil covering real transactions, a monetary exchange (C – M – C′) cannot be simplified to a direct exchange (C – C′). A commodity must be sold in the open market. An individual act of sale (C – M) is a "deadly leap", as Marx describes it, in the sense that the seller is wholly dependent on someone else's purchase (M – C). The sale and the purchase do not simultaneously occur because of the happy "double coincidence of wants", but because money measures the value of commodities by repetitively purchasing them. This function brings the commodity's supply-price into line with its demand-price, and establishes its normal price. The establishment of one normal price is dependent on the establishment of all other normal prices. In this sense money as the medium of circulation, which also simultaneously functions as the measure of commodity values, socially unites all commodities as they pass through the market.

2.2.2 The Quantity of Transactions Money

As the market stabilises, and all commodities which pass through it tend to be traded at their normal prices, the quantity of money (i.e. transactions money or active money) needed to circulate them, M_c, during any specified market-period approaches a definite sum. If the normal prices are $p_1^*, p_2^*, \ldots, p_n^*$ and the quantities of the commodity bought and sold during the period are $x_1, x_2, \ldots, x_n$, then the required quantity of active money should approach

$$M_c = \frac{1}{V} \sum_{1}^{n} p_i^* x_i \qquad (1)$$

where V is the average velocity of circulation of money, and $\Sigma p_i^* x_i$ is the money value of commodity transactions.

The velocity of monetary circulation with regard to each unit of the circulating medium (such as a gold coin) is the number of times it is spent for the purchase of commodities, during a given market-period, on an average. Of course, some gold coins are used more frequently than others. Usually coins of smaller denominations tend to be spent more often. But an average of the velocities of all coins can be estimated to define the average velocity of monetary circulation. If the

stock of active money presently in the market is \$100 million, and if its average velocity is five ($V = 5$), then the money value of the commodities that are circulated during the market-period is \$500 million.

The velocity of circulation of money reflects the rapidity with which commodities are exchanged in the market. For example, the merchant who sold his linen for \$200 today may either immediately spend them to buy whisky or wait to do so until tomorrow. His choice depends on the urgency of his need for whisky, whether this urgency which he experiences may be that of the consumer or of the trader. Generally speaking, if business conditions are favourable, traders (and consumers albeit less predictably) spend their money more quickly, and vice versa. In a period of average business conditions, however, the rapidity with which they part with the circulating medium in their hands will be more or less given.

The money value of commodity transactions can be written, in an alternative form, as follows.

$$\sum_1^n p_i^* x_i \equiv p_1^* \sum_1^n q_i^* x_i$$

$$q_i \equiv \frac{p_i^*}{p_1^*} \qquad (i = 1,2,\ldots, n)$$

Here, q_i are the relative prices of the traded commodities in terms of the first, and p_1^* is viewed as the index of the absolute level of commodity prices. Thus if we write

$$p_1^* \equiv P, \sum_1^n q_i^* x_i \equiv T$$

and call the former the price level and the latter the volume of transactions, the alternative formulation of (1) as,

$$M_c = \frac{PT}{V} \tag{2}$$

looks very similar to the so-called equation of exchange,

$$MV \equiv PT, \tag{3}$$

of the quantity theory of money.

The appearance, however, is deceptive. The present theory represented

by (1) or (2) is not, like (3), an identity. It does not imply that the price level might depend on the supply of money (M). Not at all. On the contrary, it says that the quantity of "active" money (M_c) depends on the price level (P) when the volume of transactions (T) and the velocity of monetary circulation (V) are given. The causality relation is the exact opposite. This point then needs further elaboration.

* * *

At the time when classical political economy adopted the quantity theory of money, as an integral part of its doctrinal system, the memory of the so-called price revolution in Europe was still vivid. For a century and a half after the discovery of America, Europe experienced a steady inflation as shiploads of gold poured into Spain. Roughly speaking, it is said that prices, on average, trebled between 1500 and 1650. In particular, in 1650 wheat and hay sold for 15 times the price of 1500 in the Paris market (R.R. Palmer and J. Colton, *A History of the Modern World*, 3rd edn (Alfred Knopf, New York, 1965) pp. 98–9), and "between 1500 and 1640, the price of agricultural produce rose anywhere from 400 to 650 percent" in England (Alan K. Smith, *Creating a World Economy: Merchant Capital, Colonialism and World Trade, 1400–1825* (Westview, Boulder, CO, 1991), p. 109). Hume's classical statement of the quantity theory in *The Political Discourses* appeared in 1742, though previously many other authors produced less perfect formulations. Marx writes as follows.

> A one-sided observation of the results that followed upon the discovery of fresh supplies of gold and silver, led economists in the 17th, and particularly in the 18th century, to the false conclusion, that the prices of commodities had gone up in consequence of the increased quantity of gold and silver serving as means of circulation (*Capital*, I, p. 119).

One must, however, approach this problem with circumspection. Marx was right in claiming that the quantity theory has no place in the dialectic of capital; but he was not right in denying that an excess supply of gold raised commodity prices.

The sudden inflow of gold into Europe from the New World did raise prices, as the quantity theory predicts and as history corroborates. In a purely capitalist society, however, such a thing cannot happen. Society does not get a fresh supply of gold "like manna from heaven" but only by producing it, i.e. by using up resources which could have

been applied to produce some other use-values. An excess supply of gold can, therefore, occur only by an unwarranted expansion of the gold-producing sector at the expense of other sectors, or in short, only by a misallocation of resources which cannot persist for ever.

If gold is overproduced, and hence other commodities underproduced relative to social demand, commodity prices will be raised above "normal". This tends to make gold production unprofitable, since, to produce the same amount of gold, capitalists must buy the elements of production above their normal prices. On the other hand, the production of other commodities becomes more profitable and begins to expand. This corrective mechanism works automatically. Even before this adjustment makes itself felt, excess gold tends to be withdrawn from the sphere of circulation, and stored outside it as inactive or idle money (M_s). When such money is plentiful, commodity production is bound to be stimulated. If that does not bring down the prices sufficiently, then more of the existing gold which remains persistently cheap will be devoted to nonmonetary purposes.

Thus, when there arises an excess supply of the monetary metal in a purely capitalist society, inflation occurs temporarily. However, this disequilibrium phenomenon will be controlled by several steps. First, the excess of active money (M_c) will turn into idle money (M_s). Then, if there still remains a surfeit of money as a whole ($M_c + M_s = M$), monetary gold will turn into non-monetary gold. In the meantime the abundance of idle money, together with inflation, is bound to stimulate real investments, while the new production of gold will fall drastically. These adjustments, of course, take time to work. But they should eventually be able to absorb any autonomous addition to the stock of gold. Inflation becomes a serious problem only when the reallocation of resources from the gold-producing sector to the rest of the economy is obstructed for one reason or another, so that the latter cannot expand sufficiently.

The defects of the quantity theory of money are (1) that it fails to explain how the original overproduction of gold occurred, (2) that it takes all gold to be money and all money to be active, (3) that it confuses commodity money with fiat money (of this more later), and consequently (4) that it fails to establish the non-permanence of inflation in a purely capitalist society.

The quantity theory, however, is only an empirical hypothesis, and does not intend to be a constituent element of the dialectic of capital. In other words, it only prides itself in having pseudo-predictive power at the level of empirical observations, and does not contribute towards the definition of

capitalism. Its application should, therefore, remain in the historical context in which, indeed, every discovery of new gold mines almost invariably led to both inflation and a business boom. The adoption of this theory by the classical school, however, resulted in its false claim of money's "neutrality", and its failure to distinguish between the capitalist economy and the economy in general. It is this fallacy that the dialectic of capital should guard against.

* * *

So far no substitute for gold money has been introduced, so that the entire stock of money, whether active or idle, is assumed to be made up of gold. If, however, gold money actually circulates, mediating the transaction of commodities, part of it is bound to be lost, stolen or abraded. Suppose that the money value of transactions is \$500 million, and the average velocity of monetary circulation is 5. Then the required quantity of active money or means of circulation must be M_c = \$100 million. Suppose, however, that one-tenth of this gold serving as the circulating medium is abraded or depleted, and must be replenished in each market-period. Then this society must produce g = \$10 million in each period in addition to other commodities.

Thus, even in the absence of any expansion in the scale of its economic life, society must produce this amount of monetary gold, which it cannot "consume" in the same way as other commodities, by using up some of its productive resources. If society grows, it must devote more resources for the production of monetary gold. The cost of producing monetary gold is sometimes said to be "unproductive" because it is a cost that only the commodity-economy incurs. (Labour that produces the monetary metal is, however, not "unproductive", as I shall explain later.) It is justified only if the benefits of the commodity-economy are greater than the cost of producing "inconsumable" money. Therefore, the rationality of the commodity-economy compels the saving of such a (an unproductive) circulation-cost as far as possible, so that the latter does not outweigh and cancel the advantages of the expansive network of commodity exchanges.

The solution to this problem lies, however, in the nature of the circulating medium itself. Experience shows that gold coins already somewhat abraded can circulate at their face value, provided that they can be converted into the stated quantity of gold when they are withdrawn from circulation. This implies that a dependable representation of gold (or a gold symbol) can function as the medium of circulation just as well as genuine gold. In other words, full-bodied gold can often circulate commodities "by proxy". This property of the circulating medium stems

from the fact that it is always returned to circulation, never staying long enough in the trader's hands. Since his purchase immediately follows his sale, the receipt and payment of money by him are mere formalities, or commodity-economic rituals. All he cares about or wishes to do is to ascertain that the money value of the commodities he has sold is equal to the money value of the commodities he purchases. It is to meet this need that society "institutionalises" the circulating medium, or transactions money, as "currency".

2.2.3 Currency or the Institutional Medium of Circulation

We shall use the word "currencies" to represent all kinds of institutionalised means of circulation. (I do not mean by this word "the circulation of money" as in *Capital*.) The currency of capitalist society generally consists of full-bodied gold coins and tokens (or gold symbols) made of silver, copper, nickel, paper, etc. Marx writes as follows:

> The practical difficulties in the way of coining extremely minute quantities of gold or silver, and the circumstance that at first the less precious metal is used as a measure of value [he means a counter of money value] – instead of the more precious . . . and that the less precious circulates as money until dethroned by the more precious – all these facts explain the parts historically played by silver and copper tokens as substitute for gold coins (*Capital*, I, p. 126).

Thus, even when gold has established itself as the standard money, copper, silver and so on may continue to circulate as subsidiary currencies in small or localised transactions. They are used because gold coins of very small denominations are impractical, and because they were themselves the general equivalent in the past.

Once the circulation of different metals becomes customary, there arises the need for minting coins. Coining and the establishment of the standard money (the general equivalent) are "the business of the State" (*Capital*, I, p. 125). The state, in the present context, means no more than an institutionalised agreement of traders. Since the development of commodity exchanges requires law and order, the presence of institutions that maintain them must be implicitly assumed. The state is, therefore, understood here as a typical institution which oversees the working of the commodity-economy from without. The functions of the state include the minting of coins, ensuring the minimum metal content in them, and also the issuing of inconvertible paper money.

The state exists in all societies as the institution of power. It certainly existed before the evolution of capitalism (though not in the form of the bourgeois state). Capital makes use of it, reshaping it to fit its needs, but capital does not create the state. The same is true of landed property. It is incorrect to believe that capital has the power to generate everything from out of itself. Since capital comes from outside society, it frequently makes use of what is already available there, adapting the latter within limits to its own needs.

Fiat paper money, issued by the state and invested with the power of compulsory circulation, is the most extreme form of token money. Unlike subsidiary coins, which have an inherently limited scope of circulation, paper money can be issued by the state in any amount as fiscal need arises. In other words, it can be issued in much greater quantity than is warranted by the saving of society's cost of monetary circulation. The issue of fiat money possesses no commodity-economic rationality precisely because the state is an institution pre-existing the commodity-economy itself. The production of monetary gold incurs an "unproductive" circulation-cost to society as a whole, but not directly to individual traders. The commodity-economy, therefore, cannot by itself develop a mechanism to save such a cost. It must instead depend on the state, an institution outside it, to accomplish the purpose. The state responds to the call, but does not always apply restraint when its own need overrules commodity-economic considerations.

Parks and other public facilities are similarly managed by the state, sometimes efficiently sometimes inefficiently. But capital cannot directly determine how they ought to be managed. Circulation-costs are said to be "unproductive", since, unlike the costs of use-value production, they do not directly give rise to surplus value. In this sense, society's cost of monetary circulation is "unproductive", even though the labour that produces the monetary metal is productive.

* * *

The contrast between fiat money and credit money explains the same point further, although a fuller explanation of credit money must wait until later in this chapter (Subsection 2.3.2). As will be seen, credit is an instrument by which traders minimise their individual circulation-costs. When they have enough cash, they can extend credits to each other, and that is advantageous to them all. Thus, the commodity-economy develops a complex system of credits *by itself*, and the system perceptibly reduces the individual burden of circulation-costs to traders who participate in them. There is no need, in other words, to depend on

any institution external to the commodity-economy to make use of credit money. Therefore, if credit is over-extended, a commodity-economic mechanism comes into play to correct the situation. Fiat money saves circulation-costs to society, such that the benefit of the saving is shared by all traders alike rather than by specific individuals. The commodity-economy does not spontaneously supply such a "public good". Fiat money must, therefore, be issued and administered by public authorities, alien to the commodity-economy, in order to attain general circulation. Thus, lacking in commodity-economic rationality, fiat money can be issued with no inherent quantitative limit.

If the state issues fiat money, the latter remains gold equivalent only insofar as its total issue does not exceed the quantity of gold that would otherwise be required as the medium of circulation, that is to say, so long as the nominal sum of fiat money in circulation is equal to, or less than, M_c, as defined by formula (1) above. If the issue of fiat money falls short of this limit, then some gold coins must still circulate in order to take up the slack, so that the production of gold, strictly as the medium of circulation, cannot be completely eliminated. It is, however, a practical impossibility to issue fiat money always in the correct maximum amount, given that the money value of transactions changes all the time. Therefore, the issue of fiat money, which costs nothing to the issuer, but which enables him to purchase commodities in the same way as gold producers, easily tends to exceed the proper limit. In that case the nominal value of fiat money, say, one pound, no longer represents one pound of gold money, since fiat money once issued cannot be automatically withdrawn from circulation.

Unlike gold coins, which can be readily melted into bullion, and thereby preserve their gold value outside the sphere of circulation, fiat money consists of worthless pieces of paper (once it loses the status of the legal tender). No trader can, therefore, retire fiat money from circulation and hold it in its "non-monetary" form. Only the issuer could take fiat money out of circulation, if he had commodities to sell. The issuer, however, is not a commodity seller; he only purchases commodities. Thus if, for example, 250 million pounds are issued where the money value of transactions and the average velocity of monetary circulation warrant only 200 million gold pounds, the purchasing-power of one fiat pound will equal that of only 0.8 gold pound. A commodity which had a gold price of 2 pounds now costs 2.5 pounds in the depreciated fiat money. Since the issuer of fiat money is a pure purchaser if anything, the declining purchasing-power of fiat money only tempts that agency to issue more. If the velocity of circulation of fiat

money may be supposed unchanged, an unrestrained issue of fiat money leads to the proportional depreciation of its purchasing-power, and the proportional rise of commodity prices in terms of it.

* * *

It can now be shown how the quantity theory of money would explain this phenomenon of fiscal inflation at a superficial level. First, assume that the normal prices, $(p_1^*, p_2^*, \ldots, p_n^*)$, the quantities of commodities traded per unit of time, $(x_1, x_2, \ldots, x_n)$, and the average velocity of monetary circulation, (V), are given. Then a correct number is found for the required quantity of transactions money, M_c, in (1). This means that the equation is solved and has now become an identity,

$$\bar{M}_c \equiv \frac{1}{\bar{V}} \sum_1^n \bar{p}_i^* \bar{x}_i \tag{4}$$

where no variable remains unknown.

At this point, let fiat money, F, be issued $\alpha > 1$ times the known quantity of transactions money in gold, $\bar{M}_c$, as found by solving (1), i.e.

$$F \equiv \alpha \bar{M}_c. \tag{5}$$

When this amount of fiat paper money is present in the sphere of circulation, the above theory requires that commodity prices in terms of depreciated paper money are also $\alpha > 1$ times the normal prices in terms of gold, so that,

$$p_i' = \alpha \bar{p}_i^* \quad (i = 1, 2, \ldots, n). \tag{6}$$

Therefore, (4) can be re-written as

$$F \equiv \frac{1}{\bar{V}} \sum_1^n p_i' \bar{x}_i \tag{7}$$

which, in effect, is equivalent to the equation of exchange (3) of the quantity theory of money.

The above shows one aspect of the quantity theory as a theory of fiat money, based on the solution of the more profound theory of active money in gold. Originally, the quantity theory arose from the reflection on the price revolu-

tion in Europe, which occurred before the birth of capitalism, and which may in part have expedited it. Since the process of adjustment was extraordinarily long, the seventeenth and eighteenth century economists that Marx referred to failed to see that inflation was a disequilibrium phenomenon under capitalism and espoused the quantity theory of money. In this case, money meant commodity-money like gold, and not fiat money. This theory, moreover, was enthusiastically adopted by classical political economy to justify its false claim of money's neutrality. This dogma which contributed towards the confusion between the exchange of commodities and the exchange of use-values then ruled economics for a very long time to come, while commodity money was increasingly replaced by fiat money. Thus, by the time the untenability of the quantity theory under the system of commodity-money became obvious, it shifted its ground to the economy characterised by fiat money. This explains the extraordinary staying-power of the quantity theory of money, despite its shaky foundation.

The existing stock of money (M) in capitalist society is divided into active money (M_c) and idle money (M_s). In Figure 2.5 the sphere of circulation is represented by the inner square. The money that mediates transactions in it is all active money, or means of circulation, part of which can be replaced by fiat money. The inside of the inner circle is the sphere in which fiat money can replace gold coins without exceeding its limit. Immediately outside the sphere of circulation but inside the outer circle is the area in which money remains idle, or is at rest. Money is there as the store of value. The doughnut-shaped area between the two circles is the sphere in which gold money comes into play. The gold standard system is protected further by the easy transformation of monetary into non-monetary gold and vice versa. Immediately outside the larger circle, but inside the outer square, is the area in which non-monetary gold appears. This area is directly connected with gold production. Now that this section has completed the study of money inside the circulation-sphere, the next will be devoted to the study of money at rest outside of it.

2.3 MONEY AS THE STORE OF VALUE

2.3.1 The Formation of Idle Money

Idle (or inactive) money arises most simply as *reserve money*, which is accumulated with the expectation of a future purchase of commodities. Since the exchange of commodities, C – M – C′, is mediated by money, the sale, C – M, and the purchase, M – C′, can always be

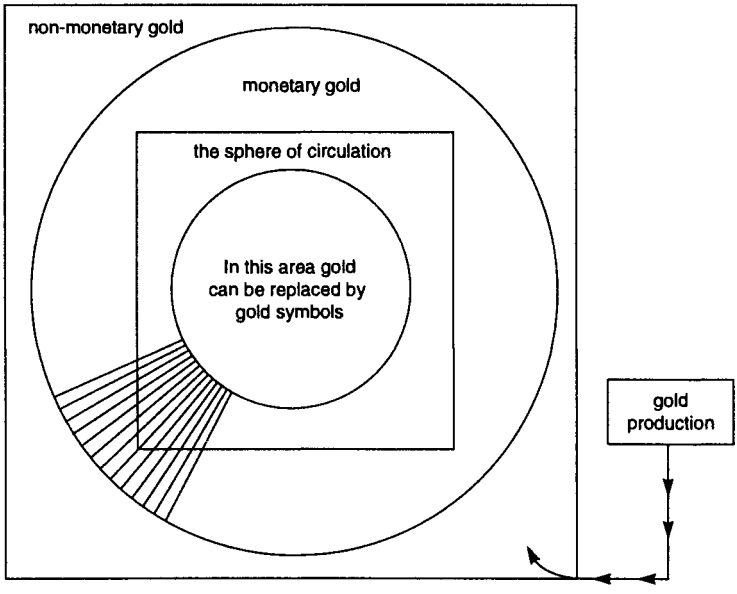


Figure 2.5

separated. For example, the merchant who sells 20 yards of his linen for $200 today need not immediately spend them on, say, 4 gallons of brandy. He may hold the money for a day, two days, three days, etc., separating the sale of linen and the purchase of brandy for the same amount of money, for a longer or shorter interval of time. If the market-period is the whole week, and if the merchant returns the $200 he earns today back to circulation, before the end of the week, the longer or shorter lapse of time during which he holds the money within the same week affects only the velocity of circulation of active (transactions) money for that period. When he holds the money that he receives today beyond the current week to a future market-period, reserve money arises; and that is the first form of idle money.

There is no necessity for the trader to spend all the money that he earns in one market-period before the end of the same period. On the contrary, such a practice may not even be possible because of the nature of the use-values involved in his transactions. A trader may have to sell a commodity of small value for several weeks before he obtains sufficient money to buy a more valuable commodity. Conversely, he may have sold an expensive commodity, and may therefore spend the proceeds over several weeks on less expensive commodities. Or perhaps

a farmer who sells his crops in autumn may not find in the market agricultural implements that he wants to buy until the following spring. The possibility of separating the sale and the purchase suits traders who want to free themselves as much as possible from the use-value restrictions of their transactions. In their effort to sell dear and to buy cheap in the best of all possible markets, traders automatically build reserve money, while waiting for the best time to engage in trade.

However, if money is withheld for only a few market-periods, as the "temporary abode of purchasing-power", that money, temporarily kept idle, is not very different qualitatively from active transactions money. (Money kept in the pocket from Monday to Thursday is active, but money held from Friday to Monday is idle, if the market-period is a working week.) It is held in reserve, with a fairly clear prospect of being spent on the purchase of commodities in any case. For this type of idle money to be formed, only a natural separation of sale (C – M) and purchase (M – C′), which permits traders to overcome the use-value restrictions of their transactions, is sufficient. The building of reserve money, however, increases the bargaining-power of traders, and enables them to operate in the market more effectively.

* * *

A trader can accumulate reserve money over time, by selling more and buying less. Since he is not a consumer, he does not sell a large volume of his commodity merely to buy articles for his own consumption. Only an insignificant part of his sales proceeds will be spent to satisfy his personal needs. A merchant displays his skills when he buys shrewdly in a favourable market, without wasting valuable money on unnecessary or unsuitable commodities. The trader is a discriminating buyer, to the extent that he prefers to hold on to gold, rather than to spend it inadvisedly on bad commodities. This kind of preference can no longer be explained by the convenience of trade in ordinary use-values, but rather by the fact that gold preserves value more effectively than other use-values.

Gold stores value better than other commodities for two reasons: first, it need not be consumed; second, it serves as the direct purchasing-power. An ordinary commodity, once purchased, must be used or consumed, often immediately, before its use-value is spoiled. Even a durable commodity, unless it is irreproducible (in which case, it will not be considered here), loses its use-value by simply becoming old or obsolete.

Moreover, even if it preserves its use-value almost intact, it must first be resold for money (which constitutes a "deadly leap") in order to be exchanged for other commodities; and the resale price of an old commodity is usually less than the price of a comparable new commodity. Gold, on the other hand, preserves its use-value almost perfectly and permanently, even if it is, in the meantime, used as a luxury article, for example, as a candlestick, a ring or a medal. Nor is it necessary to sell gold for money in order to purchase commodities at any time, since gold is by itself money. (The small seigniorage fee that may be charged to convert gold bullion into coins can be neglected in the present context.)

All this does not mean that the value of gold is invariable over time, although, for reasons explained already, the fluctuation of gold value is expected to be less pronounced than the fluctuation of the value of other commodities. If gold loses its value, however, it is certainly not because the use-value of gold deteriorates over time. Technical progress or the discovery of richer gold mines can reduce the value of gold; but such contingencies can happen to all commodities. Gold is the best store of value because it almost perfectly preserves its use-value over time, and because its use-value is abstract-general rather than concrete-specific. Gold, therefore, constitutes mercantile, abstract-general or commodity-economic wealth, i.e. wealth *par excellence*, its use-value being both self-preserving and universal.

* * *

Since the use-value of gold is general, the marginal utility of money cannot decline. The trader's appetite for gold money is consequently unbounded. Money is no longer held simply as a reserve with a view to eventually purchasing certain commodities in the foreseeable future. Money is "saved" or accumulated as mercantile wealth, which must be spent wisely and sparingly. The trader accumulates money, intent on keeping it away from circulation as much and as long as possible. This propensity of the trader may perhaps be represented more adequately by the concept of "monetary saving" than by Marx's concept of "hoarding". The obsessive *auri sacra fames* which sometimes manifests itself in an exaggerated form is a useful reminder of non-diminishing marginal utility of gold. It must, however, not overshadow the commodity-economic rationality which underlies monetary saving. The trader does not blindly worship money which, to him, is an instrument of his mercantile operation rather than the ultimate goal itself.

Money is either spent or saved: $\Delta M_c + \Delta M_s = 0$. In other words,

money withdrawn from the market, and not spent in it, is saved. Thus, even though individual traders want to accumulate money indefinitely, the quantity of money that society may withhold from circulation cannot exceed that part of the circulating medium which has become redundant. Commodity exchanges require a definite quantity of money, M_c, as the circulating medium, as previously established. There would be no reason for traders to save money at the expense of commodity exchanges, which mediate the "metabolic process" of society's economic life. Those who unilaterally hoard money, never to spend it again, cannot be viewed as traders who mediate the social exchange of commodities. Thus, if some traders withdraw money in any period from the market, others disgorge money into it from their past saving, so that the existence of the necessary means of circulation, M_c, in the sphere of commodity exchanges is always ensured.

This conclusion is inevitable, especially if we set aside for the present the production of all new gold, other than that which replaces the abrasion of circulating gold coins. A trader can save only from the money that he obtains by the sale of his commodity (C – M). Therefore, if the stock of gold existing in society, $\bar{M}$, is fixed, and if the quantity of gold required as the circulating medium (i.e. active money not replaced by fiat money), M_c, is also given in advance in light of commodity transactions, then idle money that can be saved in society, M_s, must be determined as a residual. That is to say,

$$M_s \equiv \bar{M} - M_c.$$

Part of society's stock of gold is active as the medium of circulation, while the other part remains idle as accumulated monetary savings. The two parts bear to each other a relation such that the quantity M_c directly determines the quantity M_s as the residual, as shown by the above formula.

2.3.2 The Means of Payment

A market in which certain commodities are regularly traded suggests that a social system of reproduction underlies it. The production of use-values is, as will be seen later, conditioned in many ways by technical, geographical, seasonal and other factors, so that, for example, when farmers market their crop (C), they do not necessarily find the fertiliser (C′) ready to be purchased in the market. The separability of their sale (C – M) and their purchase (M – C′) is, therefore, convenient

for their desired exchange of commodities. The opposite situation can, however, also arise. For example, farmers may need fertiliser which is already marketed, but are unable to buy it, since their own crop will not become saleable until later. It would be convenient for the farmers if they could buy the fertiliser without money (N – C′, where N stands for a non-cash means of purchase) now, and pay off the debt later when they have sold their crop for money (C – M).

This procedure is made possible by the fact that the manufacturers of fertiliser have already saved up enough money from past transactions. They can use this money for their present purchases, and wait for payment until the farmers have sold their crop. In the meantime, the manufacturers are spared the worry and trouble of storing the fertiliser and ensuring that its use-value be preserved. It is to their advantage to sell the fertiliser on credit, letting the farmers use it immediately. The farmers who purchase the fertiliser today will, however, be obliged to pay for it when the credit period expires, whether they have actually sold their crop or not. The money that the indebted farmers pay back on the day of settlement can no longer be viewed as the medium of circulation. It has become the *means of payment.*

The non-cash trade instrument, N, which the farmers use in the purchase of the fertiliser represents their IOU, or promissory note, to pay the price at the end of a specified period. This is another case in which gold money purchases a commodity by proxy. It has already been explained that gold symbols (or fiat money) can, within a certain limit, circulate as the means of purchase, without detracting from the integrity of the gold standard system. If gold symbols are exchanged for a commodity, gold existing behind them purchases it and measures its value, provided that these symbols are re-convertible into gold, whenever the money value that they represent must be withdrawn from the sphere of circulation. The same applies to the promissory notes, the only difference being that their day of conversion into gold is predetermined. As long as physical gold is present when the credit period expires, the promissory note is a genuine representation of gold, and can, in the name of gold, purchase a commodity and measure its value.

It is, therefore, quite wrong to claim that the value of a commodity purchased with a promissory note can be measured only when the note is cashed. Value is measured by the act of purchase, not by the subsequent cancellation of the debt. The act of purchase takes place when the purchaser acquires the right to consume the commodity in return for the promissory note, not when

he honours it. This explanation does not contradict the earlier proposition that the value of a commodity is measured only when it becomes physical gold payable to the seller, rather than remaining imaginary gold in his unilateral value expression. Thus, if a seller of the fertiliser merely puts it on the shelf, with the price tag of \$50 per kg, the value of the fertiliser is not measured. But if a farmer purchases 10kg, of it for \$500, either with cash or with a promise to pay \$500 (*plus* some interest) later, this constitutes an act of purchase, the repetition of which measures the value of the fertiliser.

Even if the farmer defaults later, and the seller of the fertiliser fails to receive the promised money, that does not change the fact that the 10kg of the fertiliser has been socially acknowledged as worth \$500 on this occasion, and this fact has a bearing on the measurement of the fertiliser's value. The farmer does not make his purchase with imaginary money, but with physical money payable later. As a matter of fact, it may be supposed that, when he purchases the fertiliser on credit, he also purchases \$500 worth of agricultural implements from the same supplier in cash. The farmer can, in the first instance, pay \$500 cash to the supplier and immediately receive from him the loan of \$500 with which to buy the fertiliser. In this case, all commodities are paid for in cash, and only a debtor–creditor relation remains between the two traders after the acts of purchase have been concluded. This example shows that a promise to pay money later is not as unreal as "imagined" money in the mind of the seller. A promissory note, when issued, represents a social recognition in principle of the money value of the commodity involved.

* * *

If a trader purchases a commodity on credit, i.e. with a promissory note, he places himself under the absolute obligation to have the means of payment ready by the date previously agreed upon. If he fails to liquidate his debt by that time, he will be declared insolvent. Consequently, the saving of money as the means of payment becomes a categorical imperative to the indebted trader; his is then a forced, rather than a voluntary, saving. However, the amount of money that society withdraws from circulation as the means of payment is far less than the money value of the commodities which the use of promissory notes has circulated. This is for the following reason.

If N_{ab} is the promise by trader-**A** to pay a sum of money with a given delay to trader-**B**, then, for all N of the same money sum and the same credit period, the following relations hold:

$$N_{ab}\,[+]\,N_{bc} = N_{ac},$$

$$N_{ii} = 0 \quad (i = a,\ b,\ \ldots).$$

For example, if **A** promises **B** to pay \$100 in 3 months and **B** also promises **C** to pay \$100 in 3 months, then this can be consolidated to

A paying **C** \$100 in 3 months. The operator [+] stands for consolidation. Therefore, a closed chain of debts and credits such as

$$N_{ab}\,[+]\,N_{bc}\,[+]\,N_{ca} = N_{aa} = 0$$

would leave no balance to be settled in cash. In such a case, money would function purely as abstract money of account among the three traders, and the exchange of commodities would need no more than a joint bookkeeping, in which receipts and payments mutually cancel. A system of trade credits, however, can never be organised so perfectly as to leave no balance to be settled in hard cash. (For a detailed account of this matter, see Volume 2, Chapter 9.) It is in the nature of the commodity-economy always to require some means of payment (in cash) for settlement.

If the issuer-**A** of the promissory note N_{ab} has a good credit standing, N_{ab} becomes *credit money* called a bill of exchange, and can circulate by endorsement among many traders prior to the date of its expiry. Wholesale trade and other inter-business transactions make an extensive use of commercial bills. They are, however, hardly used in the retail trade where the purchasers are final consumers. Since a trade bill implies a credit given by the seller of the specific commodity to its purchaser, it is, in general, impossible for the bill to eventually return to the issuer and to liquidate itself without involving cash as the means of payment.

If banks discount a trade bill, however, they may issue banknotes instead of paying in gold. Banknotes, or equivalently bank deposits subject to chequing, are a more developed form of credit money than trade bills and are convertible into gold on sight or on demand. In an advanced capitalist economy, an overwhelming proportion of the medium of circulation can take the form of central banknotes, drastically economising the circulation of gold. The central bank must, however, always stand ready to maintain the convertibility of the notes into gold. In this case, the gold reserve in the vault of the central bank circulates commodities, measures their values and acts as the means of payment, all by proxy. All functions of money, in other words, presuppose the existence of the physical gold reserve in the vault of the central bank.

Although within a country the means of payment may take the form of central banknotes, the transfer of these notes from the debtor to the creditor as means of payment implies the transfer of claims to gold. If the debtor and the creditor are from different countries, the settlement can be accomplished

only by an actual shipment of gold. However, since the partition of a purely capitalist society into different central banking jurisdictions is purely arbitrary, the settlement of debts in gold must be considered to be the general rule, which, in some exceptional cases, may be accomplished without physically moving gold from one place to another.

* * *

It has so far been supposed that the need for the means of payment arises only from commercial debts incurred by past purchases of commodities. However, any other contractual obligation to pay money, be it wages, rents or taxes, also gives rise to the demand for the means of payment. The quantity of money needed to make payments of all sorts during any market-period may, therefore, be quite independent of the quantity of the circulating medium required to carry out commodity exchanges during that period. Even if we restrict the source of demand for the means of payment to commercial debts contracted in the past, the necessary quantity of inactive money, M_s, which must be ready today as the means of payment, has little to do with the necessary quantity of M_c which mediates today's commodity transactions. We must then conclude that, if M_s is viewed as the means of payment rather than reserve money, its magnitude can no longer be determined residually by $\bar{M} - M_c$, assuming that M_c is previously given.

If the total stock of money, $\bar{M}$, is fixed (and if the production of new monetary gold, or the conversion of non-monetary into monetary gold, is for the present left out of consideration), the relation between M_s and M_c must be inverted. That is to say, one must now conceive of M_c being dependent on a previously given M_s.

It is well known that the banking system can safely issue notes and create demand deposits, only up to a certain multiple of its cash reserve in gold. It cannot create these immediately convertible liabilities without limit, merely because there is a demand for the circulating medium (M_c), of which these liabilities constitute a major component. If the banking system has plentiful cash reserves, it will provide more means of circulation; but if its reserve is low, it will not. The system accomplishes this adjustment by easing and tightening bank credit which, in the present abstract context, may be taken to mean the lengthening and shortening of the periods of deferred payment. Similarly, if traders possess plentiful funds (reserve money), they give liberal credits to each other and stimulate active commodity exchanges; if they are short of funds, they can afford to extend only limited credit to each other, restricting the scope of commodity exchanges correspondingly. It is,

therefore, not the money value of commodity transactions that determines society's stock of gold reserves as the means of payment. It is the other way around.

The stock of gold reserves, viewed in this active rôle, will be called *funds* or *universal money*. By this time the concept of idle money, or money as the store of value, has progressed to an advanced stage. Here, M_s does not arise merely because of the non-purchase of commodities, nor is it there merely to provide for the settlement of debts as they fall due. Thus, money as funds regulates, or sets the pace of, commodity exchanges.

2.3.3 Funds or Universal Money

The concept of *funds* can be interpreted broadly to include all forms of idle money, when its concrete function is specified. In that way, reserve money and the means of payment, which have already been treated, may be viewed as special forms of funds. Such common expressions as consumption-funds, loanable funds, depreciation-funds, wage-funds, etc., suggest that the word "funds" in the sense of "money in hand, or pecuniary resources", can be used to describe various applications of reserve money and the means of payment. These two special forms, which have been characterised in one way or another as money at rest (M_s) in contrast to active money (M_c) do not, however, unveil the full import of money as funds. Funds must now be studied in their own right, as idle money properly speaking, rather than active money which has ceased to be active, by dropping out of the sphere of commodity exchanges. In other words, funds in this narrower sense refer to gold money ready to flow into the sphere of circulation, rather than that withdrawn and retired from it. Funds in this sense have the latent power to activate commodity exchanges.

No trader can expand his business (or begin a new business), without first accumulating enough money for the purpose. If, however, the accumulation of his money for expansion is at the expense of other traders, the scale of society's commodity exchanges will remain unchanged. For the commodity-economy as a whole to grow and expand, accumulation-funds must be formed. This entails the reinstatement of gold-producers, who have been relegated to the background. Newly produced gold enters the sphere of circulation by the "purchase without sale" of the gold-producers, and accrues to those who sold commodities to them, directly and indirectly. Those who are now in possession of this newly supplied gold money will spend it, when they are ready

to expand the scale of their business operations. In consequence, the commodity-economy as a whole will grow. This newly supplied gold money constitutes funds in the strict sense. In other words, these are funds for accumulation or new investment. This kind of idle money actively waits for a chance to pour into the sphere of circulation, with a view to expanding the existing scale of commodity exchanges.

In a particular capitalist country, funds may be accumulated in the form of central banknotes. But when the whole country envisions an expanded scale of commodity exchanges, additional banknotes and demand deposits must be created in advance. This, of course, cannot be done unless the gold reserve of the central bank is correspondingly increased. The country's economic expansion, in this case, requires a prior accumulation of gold in the vault of the central bank. The gold reserve of the nation can, however, increase only by the production of new gold (or the conversion of non-monetary into monetary gold) if the inflow of gold from foreign countries is excluded. In the theory of a purely capitalist society, foreign trade must be left out of consideration, since domestic and foreign trade cannot be distinguished in such an abstract context. Therefore, the only way in which society's stock of gold is increased, in preparation for economic expansion, is by the production of new gold.

* * *

The above characterisation of money as funds might, at first sight, appear unrelated to Marx's concept of universal money or "money of the world" (*Capital*, I, p. 143). He seems to define the latter simply as gold and silver used in the settlement of international accounts. Indeed, the gold stock of a particular nation rises and falls in response to changes in its trade balance. For capitalist society as a whole, however, the flow of gold from one country to another merely changes the world distribution of the precious metal, and does not affect the aggregate quantity of monetary gold. Thus, from the point of view of the entire capitalist society, the inflow of gold must be "internalised" as the production of gold or the conversion of non-monetary into monetary gold. Marx himself recommends such a procedure:

> The involvement of foreign commerce in analysing the annually reproduced value of products can therefore only confuse without contributing any new element of the problem, or of its solution. For this reason it must be entirely disregarded. And consequently gold too is to be treated here as a direct element of annual reproduction

> and not as a commodity element imported from abroad by means of exchange (*Capital*, II, p. 474).

The same procedure will be adopted throughout the theory of a purely capitalist society.

Gold flows into a country if that country has produced more commodities than it has consumed, and thus has a trade surplus. In a closed capitalist society, an excess of production over consumption (direct and productive) would result in an addition to the stock of capital. However, the provision of monetary gold, whether by production or by conversion from its non-monetary use, is the prior condition of any capital accumulation. Similarly, if gold flows out of a country in response to its trade deficit, it must have consumed more commodities than it has produced. In a closed capitalist society, an excess of consumption (direct and productive) over production would be possible only with dis-saving or the depletion of the existing stock of capital. In the first instance, it would deplete the stock of monetary gold, whether by its conversion into non-monetary gold or by the failure to replenish all of the monetary gold abraded in circulation. Thus, for the analysis of a purely capitalist society, the inflow and outflow of gold can be translated into either the conversion of non-monetary into monetary gold and its reverse, or the production of new gold which is greater than, or less than, the abrasion of monetary gold.

Since gold too is a capitalistically produced commodity, as much of it will be produced as society wants relative to other commodities. Thus even when society's scale of reproduction remains unchanged, monetary gold abraded in circulation must be automatically replaced. A shortage of gold reveals itself in a uniform depression of the market prices of commodities below normal, enabling a unit of gold to buy more of all other commodities. This cannot fail to stimulate gold-producers to increase their output, until their "purchase without sale" of commodities restores the normal prices in the market. It is, however, premature at this abstract stage of the theory to elaborate on the mechanism of adjustment in the production of gold.

Ideally, the "production" of gold should be left altogether implicit, when "money as funds" required for the expansion of commodity trade is studied in the doctrine of simple circulation. Marx's reference to "money of the world" or universal money, rather than to accumulation-funds, indicates the subtle discretion with which he treated this difficult problem of dialectical exposition. On the other hand, the dialectic does not prohibit references to concepts that will be elaborated later, if they make the present exposition easier to

understand. In the doctrine of simple circulation, for example, the production-process of capital is not yet theoretically specified. It would be incorrect, however, to believe that a full-fledged capitalist production is not presupposed in the background, when the forms of simple circulation are discussed.

* * *

It is important to realise that the formation of funds alludes to the holding of idle money, as a necessary step towards the conversion of surplus value into capital, a topic which will be discussed more explicitly later. The relation of accumulation-funds to commodity exchanges is such that the former provides the latter with power or energy to grow. Funds are meant to be capitalised, not to be dissipated by consumption. Thus, when they go into circulation via the act of purchase (M – C), it is for the purpose of gainful resale (C – M′). Money as funds, in other words, is the motor of the capitalist chrematistic process, M – C – M′. Here, money is no longer the mere instrument of commodity exchanges, C – M – C′. In this context, traders do not merely exchange commodities, they profit from commodity exchanges, by buying cheap in M – C and selling dear in C – M′. It is the chrematistic activity of traders, known as *arbitrage* that brings unity and order to the commodity-exchange market.

Without the active arbitrage that closes price-differentials over an extended market, society would not be integrated into a single commodity-economy. Society would remain partitioned into several localised markets which, if not totally isolated, would be only loosely connected with one another. Simply as the medium of circulating commodities, however, money would not be able to remedy the disarray of separate markets. It is the function of money as funds, or as "money of the world", that enables traders to profit from price-differentials, thereby eliminating local disparities and universalising the market. Thus, the use of funds for arbitrage is implicit in establishing the limits of the scope of the market or of the sphere of commodity exchanges. Instead of merely asserting the principle of a unique price for the same commodity, the dialectic shows that money as funds necessarily universalises a commodity-economy. It is this unifying power of money referred to here that induces the growth of commodity exchanges.

In the trader's act of arbitrage is already implied the general form of capital, M – C – M′, which consists of making a sum of money, M, into a greater sum, M′, with the intermediation of a commodity, or commodities, C. Capital is not a thing, but a chrematistic operation, which is sometimes referred to as the "metamorphosis" of value, or

value in motion. A commodity must express its value, since value is immanent in it. Money as the general equivalent directly embodies and exhibits value and need not express it in terms of something else. That is why money is given special functions to perform in the sphere of circulation. Capital, as a chrematistic operation, combines the externalisation and the immanence of value in its metamorphosis. Value grows in capital, while it takes alternately the forms of the commodity and of money. The dialectic must now proceed to the examination of the concept of capital.

3 The Operation of Capital

3.1 THE FORM OF MERCHANT CAPITAL

3.1.1 The General Formula for Capital

When idle money becomes "funds" or universal money, it already implies the operation of capital. For funds do not always remain idle by simply renouncing the purchase of commodities for consumption. While being idle, they are ready to purchase commodities for resale with a pecuniary gain, as soon as an opportunity for it arises. And when funds are spent, the operation of capital has already begun. Therefore, funds are potentially capital. By capital we here mean the "chrematistic" operation of advancing a sum of money, M, for the purpose of acquiring a greater sum of money, M′. Since capital is nothing other than the chrematistic use of funds, only the owner of funds can become a capitalist by using them as capital. The word "chrematistic" originally meant "money-making" or "acquisitive of wealth". Here, it is used in the sense of "pursuing mercantile (or abstract-general) wealth".

The general formula for capital, M – C – M′, states the fact that value in the form of money quantitatively grows from M (a positive number) to M′ (a number greater than M), by undergoing the form of the commodity, C. Capital, therefore, brings together the two simple forms of circulation, M and C, in a definite sequence which must be taken as a whole. Neither money nor the commodity, taken separately and apart from this sequence, constitutes capital. Nor can their order of appearance be changed, since capital must always begin and end in the form of money, though undergoing the form of the commodity in the course of its motion.

Universal money simply held, or a commodity (real asset) merely possessed, is not capital. For example, if someone owns a house, the market price of which appreciates over time, that does not by itself make him a capitalist. A capitalist who speculates on a house should have purchased it with money which would otherwise have lain idle, and should sell the house to complete the operation as soon as sufficient profit is earned, "sufficiency" being determined by alternative ways of making profit. As for the mere "hoarding" of money, I shall return to it soon.

Since capital begins and ends with money, the explicit form of value, its turnover can be readily recognised. The difference in the value of its endpoint, M′, over the value of its starting-point, M, is called *surplus value*, m = M′ − M, the monetary expression of which is *profit*. The time required for the transformation of M into M′ is called the *turnover-time* of capital. The purpose of the operation of capital is to earn the highest rate of profit, m/M, given the turnover-time of capital, or to realise a given rate of profit within the shortest turnover-time of capital. The efficiency of value augmentation (chrematistic operation) of capital can, therefore, be measured in a purely quantitative manner.

* * *

Ideally, capital should be a self-growth of value in the form of money over time at the highest possible speed. The motion of capital must, however, go through the form of the commodity in which value is immanent. This means that the value augmentation of capital involves, directly or indirectly, a use-value and is constrained by it. From this point of view, capital is sometimes described as a *metamorphosis*. That is to say, capital in its motion must alternately assume and discard the forms of both money and the commodity.

Although Marx applies the expression "metamorphosis" not only to the motion of capital, M – C – M′, but also to the process of the exchange of commodities, C – M – C′, the latter application is not as felicitous as the former. Money can buy a commodity, but a commodity cannot buy money. A commodity merely prices itself and awaits its purchase by money, without any initiative on its part. Therefore, the owner of a commodity cannot set the process C – M – C′ into motion by himself, transforming his commodity, C, into another commodity, C′. Capital, by contrast, arises in "funds" or universal money, and money has the spontaneous impulse to purchase a commodity. Although in the latter half of the motion of capital, the act of resale C – M′ (which involves a "deadly leap") does take place, a commodity which is unlikely to be resold with some profit would not have been purchased in the first place. At least the owner of money can take a risk in this regard on his own initiative and responsibility. That is what the owner of a mere commodity cannot do. It seems, therefore, appropriate to reserve the expression "metamorphosis" to the self-propelled change of forms that the motion of capital undergoes, rather than to apply it indiscriminately to any change of forms.

The concept of metamorphosis brings out the restrictions on the motion

of capital imposed by the use-value of the commodity which is involved in it. The value of capital cannot grow from M to M′, unless the use-value of C permits such growth. The development of the forms of capital does not eliminate such use-value restrictions altogether. It, however, neutralises them step by step until the motion of capital becomes unobstructed by them, so that capital may operate with indifference to use-values. The order of exposition of the theory of capital-forms follows the progress of capital, as it increasingly liberates itself, by overcoming these restrictions.

The chrematistic of *merchant capital* is most directly constrained by the specific use-values of the commodities which it handles. Here, the restrictions appear in their most direct form. *Money-lending capital*, the second form of capital, circumvents direct involvement in use-values, by removing itself from merchandise trade. Even there, however, commodity exchanges involving varied use-values are presupposed behind the scene. Only the form of *industrial capital* truly overcomes the restrictions of specific use-values by incorporating into itself the capacity to produce *any* use-value.

* * *

The fact that the metamorphosis of capital begins and ends with the same form of money, which is free from the specific quality of a use-value, signifies that the motion of capital, M – C – M′, unlike the process of a commodity exchange, C – M – C′, is inherently self-perpetuating. The exchange of a commodity, C, for another commodity, C′, is a once-and-for-all affair, since both commodities are absorbed by consumption as soon as the exchange is completed. That is not the case with capital. In the beginning, M was idle money convertible into capital. This must be the case with the M recovered in M′ with a profit, m, when capital has turned over once. Therefore, at least the M in M′ will have to be re-invested as capital to repeat the same operation, unless external conditions so change as to make it impossible. In other words, capital as a form is inherently self-repetitive, and tends to overcome use-value restrictions which stand in its way. The form M – C – M′ is, therefore, one of the many circuits, beginning and ending with money, which constitute an unending chain:

$$\ldots \text{M} - \text{C} - \text{M}' \cdot \text{M} - \text{C} - \text{M}' \cdot \text{M} - \text{C} - \text{M}' \cdot \text{M} \ldots$$

Capital is a form of value augmentation (or chrematistic operation). It is a "circulation-form" in that it originates and operates in the sphere of commodity exchanges, and not in that of production or of consumption.

Within the sphere of circulation, capital moves back and forth from the commodity-form to the money-form; but it always starts out from, and comes back to, the same money-form. When this "round trip" is emphasised, we talk of the "circuit of capital". In the present case, it is the circuit of money-capital. (About this and other "circuits" of capital, see Chapter 5.) When one circuit follows another in succession, we talk of the "circular motion" of capital. The same expression $M - C - M'$ is meant to represent sometimes the *form* of capital, sometimes its *circuit*, and sometimes its *motion*, depending on which connotation is to be emphasised. It also refers, at times, to the *formula* for capital, which is a tabulation of symbols as representing the form of capital. The word "form", as always, signifies "the contextual specification".

Every time capital turns over, it earns surplus value as profit, $m = M' - M$, in the form of money, i.e. in the form of immediate purchasing-power. Therefore, surplus value too can be invested as additional capital, if a suitable use-value is found which may be resold profitably. As much surplus value as circumstances permit will be converted into capital, or will be accumulated, so as to expand the scale of chrematistic operation. The circulation of capital is thus not only a self-repeating process but also a self-expanding one. Capital endlessly pursues profit, and is not disposed merely to "hoard" the result of a once-and-for-all chrematistic.

On this point Marx writes as follows:

> This boundless greed after riches, this passionate chase after exchange-value, is common to the capitalist and the miser; but while the miser is merely a capitalist gone mad, the capitalist is a rational miser. The never-ending augmentation of exchange-value, which the miser strives after, by seeking to save his money from circulation, is attained by the more acute capitalist, by constantly throwing it afresh into circulation (*Capital*, I, p. 151).

The rationality of capital lies in its constant return to circulation; for only in the continuing motion of capital can value grow without limit.

3.1.2 The Activity of Merchant Capital

The general formula for capital, $M - C - M'$, applies without modification to the form of merchant capital which buys commodities cheap and sells them dearer in arbitrage and speculation. Concretely, one

may conceive of a merchant-trader who profits from a price-differential existing either in space or over time, but who subjectively rationalises his profit as a reward for his risk-bearing. If the merchant profits from a price-differential in space, his operation is *arbitrage*; if he profits from a price-differential over time, it is *speculation*. Merchant capital is the first form of capital to appear in history. It is also theoretically prior to all other forms of capital, since it consists of nothing other than the most basic ingredients of capital, and since all other forms of capital are to be derived from it. That is the reason why the general formula for capital applies to it without modification.

In discussing the activity of this form of capital, it is desirable to distinguish carefully between the theoretical merchant and the historical merchant. Although, strictly speaking, the latter does not belong to the theory of a purely capitalist society, it is nevertheless useful to illustrate the nature of the former with the latter. Therefore, frequent references to merchant capital as it operated in history cannot be avoided. But the concept and its illustration must be carefully distinguished.

The form of merchant capital, which historically played the dominant rôle in the early phase of capitalist development as well as in pre-capitalist commodity-economies, is not as conspicuously present (though it need not be wholly absent) in a fully developed capitalist society. This fact does not mean that the form of merchant capital itself disappears with the development of capitalism. Even in a fully developed capitalist society, capitalists continue to be inveterate merchants, willing to profit from arbitrage and speculation, whenever an opportunity arises. Yet price-differentials tend to disappear as capitalism develops, so that capital must seek profits from sources other than the mere buying and selling of commodities.

This fact suggests the presence, not absence, of arbitrage in the concept of capitalism. Price-differentials would reappear if arbitrageurs took a nap. Therefore, merchant-arbitrageurs must be hard at work in fully developed capitalism, even though they do not appear with the colourful dramaticity characteristic of historical merchant capital. Arbitrage and speculation underlie all forms of capital as their atavistic and primordial nature. It is this fundamental nature of capital that is articulated here as the form of merchant capital. Similar considerations apply to money-lending capital, the form of which is discussed in the following section.

The historical prominence of merchant and money-lending capital in pre-capitalist societies does not justify Marx's proposal to "entirely

leave out of consideration the antediluvian forms of merchants' capital and money-lenders' capital, in analysing the standard form of capital, the form under which it determines the economic organisation of modern society" (*Capital*, I, p. 161). Although the forms of merchant capital and money-lending capital cannot, by themselves, organise a capitalist society, they both survive as essential ingredients of industrial capital. That is why industrial capital, when it organises a capitalist society, can delegate part of its operation to commercial capital and loan-capital (see Volume 2, Chapter 9), which are reinstatements, respectively, of merchant capital and money-lending capital in capitalist society. If these latter forms of capital played their historical part more prominently before the full evolution of capitalism, that fact only confirms that capitalism needs more than those forms of capital to come into being historically: namely, the conversion of labour-power into a commodity. It does not follow that "merchant's capital is an impossibility" or that "to account for the conversion of money into capital by circulation alone is impossible" (ibid.). The form of industrial capital too originates in circulation, in the first instance as a synthesis of merchant and money-lending capital.

* * *

The activity of merchant capital presupposes the existence of price-differentials, which imply a segmentation of society's market. Even in a purely capitalist society the market is not always, or by definition, unified. On the contrary, the smallest change in the conditions of demand and supply constantly disturbs and disrupts the integrity of the market. The more developed the capitalist economy, however, the stronger the forces that automatically correct these disturbances and disruptions. It is for that reason that the persistence of price-differentials is a more common feature of the commodity-economy prior to the full development of capitalism. Merchant capital is, therefore, the dominant form of capital in that environment. The activity of merchant capital, however, goes a long way towards uniting hitherto separate markets, as it closes existing price-differentials and extends the scope of the commodity-economy.

This fact explains why the development of commerce often contributed to the erosion of the traditional mode of production from without, and consequently to its decay. Just as commodities originated in intercommunal trade rather than in communal economic life itself, so was the origin of capital external to it. As soon as the use of money established itself as a more or less general commercial practice, merchant

traders travelled far and wide, bringing exotic commodities to isolated places. The contact with alien merchants, in turn, often stimulated the formation of local trading activities, which gradually undermined the foundation of the existing economic order. Capital being an operation, rather than a function (as of money) or an expression of value (as of the commodity), it has the power to influence real economic life, though it is by itself no more than a form of circulation. In the case of merchant capital, its effect on real economic life was limited to the erosion of the self-sufficiency and independence of isolated economic communities. The operation of merchant capital did not lead to a complete subversion of the traditional economic order, since the scope of merchant activity was confined to the sphere of circulation, without striking at the productive root of any economy.

So long as commerce remains an economic activity external to the prevailing mode of production, however, the unification of a society-wide market is never complete. Therefore, merchant capital always finds lucrative opportunities in the sphere of circulation. Only when society's production-process itself becomes radically commodity-economic with the genesis of capitalism, does the formation of a *home* (or *national*) *market* swiftly ensue, thus causing price-differentials to tend to disappear. Once-dominant merchant capital, therefore, finds the scope of its activity increasingly restricted, until, finally, its hegemony passes to industrial capital.

* * *

In capitalist society, in which all commodities tend to be traded at normal prices, merchant capital cannot remain the dominant form of chrematistic because surplus value cannot be easily earned in circulation. Capital, in its motion, takes on and sheds both the forms of money and of the commodity. Yet the capitalist, whether as money-owner or as commodity-owner, must buy and sell in the market exactly as any other trader with no particular privilege or handicap. If all traders tend to buy and sell commodities at normal prices, no one will be permanently in a position to earn profit in circulation. This does not mean that no one profits from buying and selling commodities for prices diverging from normal. It only means that one party's gain is the other party's loss, and that there cannot be a particular class of traders who are always winners in unequal exchanges. The mercantilist conception of "profit upon alienation" thus fails to explain why the capitalist class can continue to make profits, while no other class continues to make losses or negative profits.

Since the development of capitalism is accompanied by the increasing perfection and unification of the market, it deprives merchant capital of its traditional sphere of action. It cannot, therefore, continue to play the leading part in the commodity-economy. Its inner drive, however, is "sublimated" as it were, and makes its presence known in the activity of industrial capital. Even an industrial capitalist cannot realise his surplus value except by the sale of his commodity. Thus, if he advances \$100 and recovers, after operation, \$110 with the profit of \$10 he does not know or care whether these \$10 really sprang from production as distinct from circulation. He may, in fact, have produced a surplus value worth \$9, but may in addition have had the good luck to earn \$1 from unequal exchanges. Or he may have produced the surplus value of \$11 but may, for some reason, have lost \$1, in the course of buying and selling commodities. Whatever the case, he reckons that he has earned the profit of 10 per cent by his skill in the capitalist operation. This characteristic unconcern with the real source of profit betrays the lineage that connects him back to his merchant ancestors.

The form of merchant capital thus represents the subjective, rather than objective, side of the motion of capital. Suppose that a historical merchant finds a price-differential in commodity-**X**, and resorts to a profit-making act of arbitrage. To him **X** is a commodity for sale; and so he is indifferent to its use-value. This makes **X** a value-object as far as he is concerned, though it does not necessarily render **X** "homogeneous in quality" with other commodities such as **Y**, **Z**, etc. The value of **X** may be only subjectively perceived as such by this particular merchant, while it is not as yet objectively established. Even then, the fact that he subjectively perceives commodity-**X** as value, and not as a use-value, is vitally important in letting him pursue the form $M - C - M'$ of value augmentation or chrematistic operation. The value of **X** will be objectively established when, by virtue of arbitrage, its normal price emerges in a unified market, i.e. when the price-differential in it disappears.

If price-differentials disappear, however, merchant capital can no longer profit from arbitrage, and its activity cannot continue to play the dominant part. At that point, it will become the subjectivity of capital, and remains only as its inner drive for chrematistic.

3.1.3 The Limitations of Merchant Capital

Merchant capital in its concrete-historical operation has serious limitations. These come from the fact that the merchant has to deal with

specific use-values. Although he buys commodities not for his own consumption but for gainful resale, so that the material use-values of the commodities do not matter, as he simply pursues profit, a choice of the full range of commodities is never really open to him. For by the time that becomes possible capitalism must have sufficiently progressed as to cause price-differentials to disappear. When there was still room left for merchant capital actually to translate its form into concrete action, it was usually stuck with a limited choice of commodities for contingent reasons.

Since the merchant does not produce a commodity of his own liking, he must choose from use-values that are already produced. He acts as a middleman, by interposing himself between producers and consumers. The scope of his action is limited to the sphere of circulation, outside of which both producers and consumers remain beyond his control. The producers may be unable to sell the quantity, and the quality, of the commodity that the merchant wants to sell, and the consumers may refuse to buy the quantity, and the quality, of the commodity that he offers. The merchant, therefore, has to cajole, threaten and sometimes even to cheat and swindle his suppliers and customers in order to promote his own interest. Only as capitalism develops and the market becomes more established and competitive, do these traditional and questionable practices of merchant capital tend to disappear (though alas never completely!).

The merchant is, of course, not altogether removed from production, inasmuch as such para-productive activities as the transportation and storage of goods (see Chapter 5) are often an integral part of mercantile business. However, the degree to which such activities can transform already produced use-values is limited. The merchant, therefore, endeavours to subordinate producers as much as he can, dictating the particular quality and quantity of the use-values that he intends to buy. If producers are disorganised and are unable to bargain fairly with him, they fall an easy prey to his crude expropriatory practice. Yet, even in the case of the putting-out system, in which the merchant maintained unchallenged supremacy over producers, he could not completely exploit them to their utter ruin.

* * *

Just as "the exchange of commodities first begins on the boundaries of [independent] communities, at this point of contact with other similar communities, or with members of the latter" (*Capital*, 1, p. 91), so does capital originate in inter-communal trade, i.e. in the activity of

the merchant who brings products of one community to another for a profitable resale. Although the scope of the merchant's activity generally presupposes the separation of producers and consumers, his individual success or failure depends more immediately on his personal skill, experience and luck. How cheaply the merchant buys a commodity from producers and how dearly he sells it to consumers cannot be determined by any objective standard, as they depend on contingent and idiosyncratic factors. For example, a merchant who is very successful in the fur trade may be a non-starter in the business of selling spices and perfumes, since he has not the same easy way with tropical farmers that he has with northland trappers.

The merchant's inability to shift his operation easily from one class of use-values to another severely limits competition. Thus, even though, in theory, the material use-values of the commodities are not of primary concern to the merchant who sells them, and to whom they are only the instruments of chrematistic, he is not, in practice, free enough from these use-values to make him an exemplary capitalist. In other words, even when commodity-**A** is less efficient as the instrument of chrematistic than commodity-**B**, merchant capital may not be in a position immediately to abandon **A** and switch to **B**. With this restriction on the freedom of choice, merchant capital falls short of being a purely chrematistic operation. Yet it is in the nature of merchant capital to remain unable to overcome fully this use-value restriction.

It is this limitation that explains the reactionary and parasitic character of merchant capital in history. Large firms, well established in a particular line of trade, can develop into powerful institutions with privileges and protection granted by the state. Such institutions are normally difficult to compete with, but can suddenly decline when fortune turns against them. The history of mercantilism illustrates the collusion of established merchant houses with the political powers of the absolutist monarchy. Since merchant capital fails to overcome use-value restrictions on its chrematistic operation, it has the persistent tendency to lean and depend on extra-economic powers.

* * *

In pre-capitalist societies two types of trade occurred at quite distinct levels: long-distance trade and local trade. The former was frequently undertaken by powerful merchants with international connections and a well equipped fleet or caravan to carry their merchandise. These merchants for the most part catered to the upper echelons of traditional society which required objects of an ostentatious nature. The

latter trade catered to the ordinary people and so tended to be situated in and around towns, where it dealt mainly in food and other products of small producers. The two types did not necessarily develop together, although urbanisation (in the sense of increased urban population for whatever reason) and the monetisation of economic life (in the sense of increased use of money) doubtless stimulated both. Those engaged in the former type of trade were privileged merchants who, being close to the ruling powers, tended to be conservative. It was the other type of merchants who developed the putting-out system, and contributed to the increasing commercialisation of local economic life. The scope of their activities, however, was fairly narrowly circumscribed, until the mercantilist policies of the state in the seventeenth-century England, implemented with a view to benefiting the first type of trade, entailed the conversion of labour-power into a commodity. That gave the second type of trade a chance to evolve in the direction of capitalism.

Although both types of trade eroded and undermined the existing structure of society, neither had the power to alter it fundamentally. Even though long-distance trade corrupted the ruling classes with newly found wealth, feudal authorities frequently re-asserted themselves with sumptuary laws and other conventional measures. Besides, privileged merchants were often content with their comfortable station in feudal societies, and did not work for their own undoing. On the other hand, the activities of local merchants deeply affected the peasant economy. With the increasing commodification of produce and life-style, many peasants and small producers found themselves in debt, and became easy targets for expropriation. However, local merchants, much more than privileged merchants, were under stringent feudal control. Moreover, they were in no position to alter the existing land-holding system. It was only when labourpower was released from land, and converted into a commodity *en masse*, that the previous accumulation of merchant capital based on expropriation, fraud and violence could be mobilised for the building of a new social order.

Competition among merchants is inherently limited, and so is the tendency towards the equalisation of profit-rates. Thus, whether the investment of $100 yields the profit of $20 or $5 depends on who makes the investment and the efficiency of value augmentation of capital being determined by such contingent factors as the individual merchant's skills, luck, connections, privileges, etc. In this case, **A**'s $100 and **B**'s $100 are qualitatively different as capital. To the extent that this is so, merchant capital is not yet a fully developed form of capitalist chrematistic. It is not yet a self-augmenting motion of value, regardless

of who operates it, and regardless of which use-value it involves. Unless the motion of capital is freed from the specific properties of use-values and becomes fully impersonal, the commodity-economy falls short of its ideal, which is the complete reification of human relations. It is for this reason that another type of capital, free from these limitations, must now be sought.

3.2 THE FORM OF MONEY-LENDING CAPITAL

3.2.1 Circumventing Commodity Exchanges

Merchant capital to which the general formula for capital, M – C – M′, directly applied was found unable to subordinate use-values so as to allow value to augment itself freely. By contrast, money-lending capital with the formula M . . . . . M′, where the dots indicate the exclusion of commodity exchanges from its operation, represents the chrematistic of capital in its ideal purity, inasmuch as no use-value is there to interfere directly with the autonomous growth of value.

The apparent simplicity of money-lending capital poses the question as to why this form of capital, rather than merchant capital, has not been treated first as the more rudimentary one. The answer is that it is not a viable proposition, unless self-subsistent merchant capitals are already in operation. The chrematistic of money-lending capital presupposes commodity exchanges outside itself. It consists of intercepting part of merchants' profit which is being earned in the sphere of commodity exchanges. Money-lending capital can circumvent direct involvement in use-values simply because merchant capital handles them already. Standing apart from merchant capital, money-lending capital is thus one step removed from the forefront of capitalist activities.

The owner of funds who is not particularly enamoured with the excitement of commerce may become a money-lender. He may be a retired merchant, or he may have a comparative aptitude for money-lending rather than merchant trade. Perhaps he may simply be following his family tradition. Whatever the reason, there were professional money-lenders in pre-capitalist societies, who were not simultaneously merchants. Yet, it was also true that funds which were temporarily inconvertible into capital frequently arose in the hands of the merchant himself. In such a case, he could practise money-lending as a subsidiary capitalist operation.

As capitalism develops, however, the class of professional money-

lenders (i.e. those who always lend their money for an interest and never invest it in the circulation or production of commodities for a profit) tends to disappear. The lending and borrowing of funds which are temporarily inconvertible into capital, however, become a subsidiary capitalist operation, known as "finance" or loan-capital, engaged in by all capitalists, industrial and commercial. As will be explained below, loan-capitalists are quite unlike money-lenders. Representing only a particular aspect of the functions of industrial and commercial capitalists, they do not by themselves constitute a separate class (see Subsection 3.2.2, below).

* * *

Money-lending capital can avoid involvement in use-values, by standing above and aside from self-subsistent merchant capitals. If, for example, the money-lender makes his funds available to fur traders, his relation to the use-value of fur has become already indirect. The money-lender can, however, make loans to a number of merchants whose trade involves a variety of use-values. In that case, he is no longer even indirectly related to any specific use-value, but to a range of use-values, no element of which stands out particularly. What matters to the money-lender is not the profitability of trade in a particular use-value, but more generally the profitability of trade on the whole in various use-values. If the fur trade is currently depressed, the silk trade may be prosperous. The money-lender, in that event, simply makes his funds more readily available to silk traders than to fur traders. Since the money-lender is perfectly free to make loans to whomever is the most credit-worthy, he is indifferent to the specific branch of use-value trade which he happens to encourage.

This desirable indifference to use-values, however, is obtained at the cost of abandoning the "metamorphosis", which is an essential property of capital. The money-lender does not part with his *capital*, when he makes a loan. He only relinquishes his *funds* to the borrower, retaining instead the contractual right to a given sum of money on a specified date. The legal document stating his right has, of course, no value (in the strict economic sense) implicitly or explicitly, so that the value of capital fails to stay with the money-lender at all times under different guises. Money-lender's capital, therefore, cannot be said to undergo a metamorphosis of value in its motion. It is the absence of any substantive in its capitalist activity, which characterises money-lending capital, represented by dots in the formula M . . . . . M′. The indifference to use-values on the part of money-lending capital also

implies its indifference to the way in which the loaned funds are employed by the merchant-borrower. The money-lender may take a collateral, or charge a risk premium on top of the interest. Once the loan is made, however, it is up to the borrower to use the loaned funds in whatever manner he sees fit.

Because of the "emptiness" of its capitalist activity, the value augmentation of money-lending capital is purely formal. A given sum of money, M, is converted, by contract, into a greater sum of money, M′, which is a multiple of the principal by the factor $(1 + r)$, where r represents an interest-rate, which is the contractual price of the funds to be paid after a specified period of time. Once the contract is signed, there remains no capitalist activity but the enforcement of the law, by virtue of which M becomes M′ or "money begets more money". From the point of view of capital, it is as if the augmentation of value were automatic and self-enforcing. This is an ideal form of chrematistic, since capital never questions where it, in fact, pumps surplus value from.

* * *

The monetary expression of the surplus value, $m = M' - M$, which money-lending capital earns is called "interest" instead of "profit". An interest is the price of funds payable at the end of the lending period, if funds are regarded as a special commodity. It forms a certain percentage of the loaned principal. The price is agreed upon and fixed when funds are lent; and, in principle, it cannot be changed later. The merchant receives a loan with the expectation of making a profit in his trade in due course. His contractual obligation to repay the loan with an interest, however, does not disappear, even if he fails to realise the expected profit. The borrower, therefore, is never certain whether he will, in the end, be in a position to pay the interest; the lender, in contrast, sustains no economic uncertainty since the contractual rate is binding.

The preceding does not mean that money-lending is a non-risk operation. It is quite possible that the debtor turns out to be insolvent, in which case, even with the foreclosure of his assets, the lender may lose not only the interest but part of the principal as well. The risk of this kind, however, is "insurable", that is to say, convertible statistically into the cost of lending which the lender can charge on top of the interest. The so-called risk premium is normally distributed in such a way that less credit-worthy borrowers pay the greater share of it, and fully qualified borrowers none. Apart from such conventional details, however, the risk premium may be theoretically understood to offset the cost of lending which arises from bad loans. This kind of

insurable risk must be distinguished from the uninsurable risk that the merchant takes in his operation. The merchant gambles on expected profits which cannot be statistically estimated in advance, since his success or failure depends on chance just as much as on his shrewdness or skill.

The merchant's profit is, therefore, properly due to his genuine capitalist risk-bearing from which the money-lender is exempt. For this reason, the money-lender does not earn a profit but only an interest. In order to earn interest one need not have capitalist acumen; one only need be in possession of loanable money. Money-lending capital is, therefore, a formally ideal method of chrematistic, in which "money bears fruit" of its own accord compounding itself over time with interest. It is not concerned with the ups and downs of trade in any specific use-value, nor with the individual skills or luck of a particular trader.

3.2.2 The Dispossession of Existing Wealth

Since money-lending capital stands apart from commodity exchanges, and reigns over self-subsistent merchant capitals, it can regulate their activity from without, and can impose on them some order and discipline. The following two circumstances are particularly worth mentioning, although both are formal possibilities rather than actual accomplishments.

A merchant who borrows money has to return it with interest, and so cannot as freely or recklessly gamble on borrowed funds as he would on his own. Unless his business had already been judged sound, he would not have obtained a loan for a reasonable rate of interest in the first place. If he obtains a loan, his expected profit must be large enough, relative to the contractual payment of the interest, to justify an investment. Even if the contemplated investment is promising enough, a high degree of risk involved may temper his "animal spirits". The activity of merchant capital consequently becomes more subdued and disciplined.

The presence of money-lending capital also contributes, to some extent, to the rational allocation of funds to various branches of trade. Since money-lending capital is not tied to any specific use-value, it can make more funds available on easier terms to the branches of trade which are relatively more profitable. If, for example, the silk trade is more profitable than the fur trade, merchants themselves may be slow to shift their capital from fur to silk, but money-lenders do not hesitate to patronise silk traders at the expense of fur traders. In this way, more funds are channelled into the growing sector of the

commodity-economy. Because it is not directly restricted by a specific use-value, money-lending capital can be more rational than merchant capital in this regard.

* * *

This "rationality" comes from the fact that money-lending capital makes loans to anyone who is credit-worthy, regardless of what he does. The credit-worthiness of the borrower, however, does not depend so much on his "expected" ability to make a large profit in the present venture, as on his past record and his possession of valuable assets. Since money-lenders are indifferent to how the loaned funds are used, they are quite prepared to lend to the pure consumer as well. In particular, they will lend to a landlord, a king, or a church in possession of accumulated wealth. In pre-capitalist societies, the chief customers of money-lending capital were such pure consumers, whose rental or tax revenue depended in the last instance on agricultural productivity.

In such a case, money-lending capital, even more than merchant capital, could exercise a destructive effect on traditional society and its mode of production. For instance, a lord may have to borrow money in view of a famine, or a king to supplement his war expenses. Unless the famine is soon followed by a good crop, or the war terminated in victory, there is little assurance that the borrower will find the means to repay the loan, let alone the accumulated interest. Money-lending capital, or "usurer capital" as it might be more appropriately called in that context, then turns into a relentless dispossessor of the debtor in plight.

In order to fend off the threat to property, the lord will be obliged to raise the rent and the king to impose heavier taxes, which cannot but further strain the already impoverished agriculture. The stability of the feudal mode of production can easily be shaken, when money-lending capital begins to suck its life blood. No wonder the medieval church often condemned usury as the worst form of injustice.

* * *

With the development of capitalism, however, the classical form of money-lending capital tends to disappear because merchant capital loses its profitable sphere of action, as price-differentials close with the unification of markets. Once-dreaded usurers become mere pawnbrokers, who vegetate in the restricted sphere of popular finance beyond the reach of ordinary banks. Money-lending as such does not, however, disappear in capitalist society. If merchant capitalists lose their "profits upon alienation", industrial and commercial capitalists now earn "average

profits" from which interest can be paid. The need for capitalist finance merely converts the traditional form of money-lending capital into the modern form of loan-capital. Only professional money-lenders decline, i.e. the species of half-capitalists who always lend their money for interest, but who never invest it for an average profit (see Volume 2, Chapter 7, for this concept).

In a purely capitalist society, Marx's so-called "money-capitalists" (*Capital*, III, pp. 370ff), who are presumably modernised money-lenders, cannot survive, except in the restricted sphere of popular finance, which is, in any case, irrelevant to theory. The reason for this fact is that idle money inconvertible into capital cannot arise, except temporarily, in a purely capitalist society. Only the capitalists whose profession is to convert as much idle money as possible into capital with a view to earning an average profit can, from time to time, find themselves with idle money which they themselves cannot use as capital. For example, depreciation-funds must be accumulated for some time before they can be applied to renew fixed capital. Funds of all sorts, which must wait for a longer or shorter period of time before they can be converted into capital, arise as normal attendants of the circulation-process of capital (see Chapter 5). It is such funds temporarily forced to remain idle that are loaned through the money market to other capitalists, who are capable of using them as additional capital. Money-lending, therefore, is conducted by industrial or commercial capitalists themselves whose main purpose is to earn an average profit, not interest. Since no capitalist is content to earn only interest, when he can also earn an average profit, a professional money-capitalist cannot exist in a purely capitalist society (see Volume 2, Chapter 9 for more detail).

The form of money-lending capital is thus absorbed by the subsidiary operation of loan-capital, or "finance", by industrial and commercial capitalists. The disappearance of the professional money-lender, however, does not in the least abate the desire of capital ever to perfect the formal ideal of money-lending capital, which enables the self-growth of value by transcending any involvement in use-values. As will be discussed in full detail later, capital eventually accomplishes this ideal in the form of "interest-bearing capital", the highest and the most fetishistic form of capital.

3.2.3 An "Irrational" Form of Capital

Money-lending capital realises its ideal form of self-expanding value by standing apart not only from the production but even from the circulation

of commodities, i.e. by presupposing the cause of its chrematistic outside its motion. It does not even constitute the metamorphosis of value which the general formula for capital requires, nor is it genuinely one of the circulation-forms that capital is meant to be. It is a capitalistically empty operation of self-enrichment, external and parasitic to the commodity-economy. It is for this reason that the monetary form of surplus value accruing to money-lending capital is not profit but only interest which, instead of resulting from the uncertainty of capitalist activity, is contractually fixed. It is a fixed claim to money, the payment of which is ensured by the rigour and certitude of the law.

The rate of interest may be regarded as the price of funds made available for a definite period of time. Even if the money market is well developed, however, this particular price has no normal level, since it is determined quite arbitrarily by the temporary forces of demand and supply. Funds are not capitalistically producible commodities, and their supply cannot be increased or decreased so as to conform to the demand for them. Nor is the demand for funds stable over time. Consequently, the market rate of interest reflects nothing more than a temporary equality of the demand for and the supply of funds; and it has no tendency necessarily to settle to any normal level, as more and more funds are bought and sold over many market-periods. Having no physical use-value nor genuine value, funds are a pseudo-commodity unable to possess a normal price.

For this reason, if funds are at any moment absolutely short relative to the demand for them, the rate of interest can rise without restraint, readily surpassing the rate of profit. If the rate of interest is higher than the rate of profit, however, no further investment of capital in real terms is possible. If everyone invests in financial assets and not in real capital, commercial and industrial activities are paralysed. Thus, even in a fully developed money market, loan-capital can charge a rate of interest which may render further real investment meaningless. If the money market is not developed, as in pre-capitalist societies, the determination of the rate of interest is quite arbitrary. Here, the extent to which the money-lender intercepts the merchant's profit depends on the balance of the one's greed and the other's ability to circumvent it.

* * *

If it were capable of self-restraint, money-lending capital could make a positive contribution to the commodity-economy, by imposing order and discipline on the activity of merchant capital and by promoting a more rational allocation of funds. Precisely because of the emptiness

of its chrematistic and its indifference to use-values, however, money-lending capital possesses no internal check to its predatory and expropriatory nature. It can exceed its measure and become "measureless". Or to put it bluntly, money-lending capital's nature is that of the loan shark.

Not only did it, therefore, tend to thwart the healthy development of pre-capitalist societies, as pointed out earlier, but it can also become a dangerous parasite of the commodity-economy itself. Money-lending capital is "irrational" to the extent that it paralyses, rather than fosters, the normal functioning of commodity exchanges. For by forcing the commodity-economy to stand still, and by rendering merchandise trade unprofitable, money-lending capital deprives itself of the basis of its own existence.

This irrationality is preserved by loan-capital even in a fully developed capitalist society, since the rate of interest, in most cases, rises there when the rate of profit falls. As will be seen later (in Volume 2, Chapter 7), a technological constraint on the accumulation of capital sometimes sharply depresses the rate of profit. Yet loan-capital, being a subsidiary capitalist operation independent of use-values, cannot stop raising the rate of interest, when exactly the opposite is warranted. In other words, when the accumulation of capital proceeds under a given set of techniques, and the rate of profit falls, the rate of interest rises because of the increasing demand for loanable funds. That precipitates the excess of capital, which plunges the capitalist economy into a crisis (see Chapter 6 this volume, and Chapters 7 and 9, Volume 2, for more detail).

* * *

The activity of money-lending capital consists of the selling of funds for interest. However, the interest, $M' - M = m$, does not as yet exist at the moment of sale. Therefore, the legal process of collecting interest does not always parallel the economic process of generating what is to be paid as the interest. If a divergence between the two processes arises, it is the extra-economic force of the law that takes precedence over the autonomous functioning of the commodity-economy.

The exchange of commodities already presupposes the existence of law and order in general terms, including the prevention of fraud and violence, the minting of coins, etc., it is true. However, these measures are there merely to ensure that the commodity-economy is able to operate according to its own internal rules. For example, it may be a punishable offence to sell a commodity at gun-point, or to purchase a commodity with counterfeit money, simply because such practices would obstruct the smooth unfolding of commodity-economic principles. But

to declare a large number of borrowers insolvent, and to foreclose their property in the name of the law, because the commodity-economy did not work as they had foreseen would be quite a different story. In that case, the commodity-economy has already developed in one way, when the law insists that it should have gone in another. The enforcement of the law then interferes with the working of the commodity-economy, rather than assisting it. Yet, this is precisely what money-lending capital demands from time to time.

By sidestepping all use-values, and by thus realising an "ideal" form of value augmentation without capitalist effort, the operation of money-lending capital ironically reverts to the extra-economic coercion that is most alien to the concept of value, i.e. the concept which excludes direct human contact, by replacing it with indirect human relations mediated by objects called commodities. The failure of money-lending capital, however, suggests how the form of capital must, in fact, develop in order to truly subordinate the restrictions of use-values. The form of capital must stay in the sphere of circulation where it belongs. It must not merely exclude and circumvent use-values, but must rather internalise and absorb them. Only when the motion of capital can settle the contradiction between value and use-value within itself, does it become truly free. Industrial capital is the form which accomplishes this feat.

3.3 THE FORM OF INDUSTRIAL CAPITAL

3.3.1 The Nature of Industrial Capital

Use-values must not be merely circumvented, but must rather be contained and neutralised within the form of capital, which arises in the sphere of circulation and abides by the principle of metamorphosis. From this requirement follows industrial capital with the formula $M - C \ldots P \ldots C' - M'$, where the segment $C \ldots P \ldots C'$ indicates an interruption of circulation by the production-process of capital. The production-process interrupts the circulation of capital, but does not lie outside it. It is subsumed by the circulatory motion of capital, as an integral part of its value augmentation. It is in the form of industrial capital that the process of value augmentation sets itself free from the restrictions of specific use-values.

The commodity C' appearing in the formula is not an already produced use-value which capital finds in the market as something not

susceptible of further physical transformation. It is a use-value which capital itself transforms as it pleases, provided that the available technology permits such transformation. If it can produce *any* use-value that is technically producible and best fits its chrematistic, capital is no longer constrained by a particular use-value, but only by use-values in general. Capital, therefore, achieves absolute indifference to the specificity of the use-value that it sells. It can sell any commodity, C′, that yields to it the greatest surplus value. In contrast, its elements of production represented by C in the above formula are as restrictive as the commodities that merchant capital trades. Many of these elements of production are, in fact, produced as commodities by industrial capital, when the latter takes over society's production-process. However, one important commodity which must always belong to C is labour-power which is not a product of capital. Moreover, capital cannot, in any case, purchase an element of production as a commodity if it is not already available in the market. Therefore, the existence of labour-power as a commodity in the market is a precondition of the activity of industrial capital.

In the meantime, the skilfulness of an industrial capitalist is to be measured by his ability to produce a commodity which may be sold for the highest price with the means of production and labour-power as commodities that can be purchased as cheaply as possible in the market. Both C and C′ are commodities in which value is immanent. If they both tend to be bought and sold at normal prices, however, it is not enough that they differ only in use-value characteristics. They must also differ in value magnitude, so that C′ must contain more value than C. Surplus value must, in other words, be produced in the production-process of capital, C . . . P . . . C′. This fact requires that C should contain a commodity which can form and augment value, instead of merely preserving it, in the production-process of capital. Labour-power is just such a commodity.

* * *

In order for C . . . P . . . C′ to represent the production-process of capital, that is to say, in order for C′ to be a capitalistically produced commodity, it is absolutely necessary that labour-power, L_p, should be purchased as a commodity in C. Therefore, the production-process of capital may be shown more explicitly by the formula:

$$C < \frac{L_p}{P_m} \ldots P \ldots C',$$

where P_m stands for means of production (the acronym comes from the German word *Produktionsmittel*). The latter include all commodities other than labour-power purchased by industrial capital. (It will be shown later, in Volume 2, Chapter 8, that natural, as opposed to "produced", means of production such as land will be rented, and not purchased, by capital. Moreover, the rent is paid out of surplus value. They are, therefore, excluded from the present discussion. Here, "means of production" refers only to those produced, sold and purchased by capital.)

If, for example, a small commodity producer purchases only the means of production as commodities, in order to produce a commodity, C′, with his own labour-power (or with the labour-power of others, but appropriated by a method other than commodity-economic), his production-process can, in no way, be described as capitalist, even if C′ is sold for a higher price than that for which C is bought. For that sort of production-process depends on a factor exogenous to the commodity-economy, i.e. on non-commodified labour-power, which severely restricts commodity production. Such a restriction is far more serious than the use-value restriction which has so far been mentioned. For the latter kind hinders the activity of capital, but not the conversion of funds into capital. The popular confusion that even a small commodity producer invests his means of production as capital, and capitalistically produces his commodity must be laid aside once and for all. For otherwise the significance of the form of industrial capital would never be truly understood. (We are here using the term "capital" in a more precise sense than in its ordinary usage.)

Labour-power that industrial capital must purchase as part of C can free the chrematistic of capital from entanglement with particular use-values. For this to be the case, however, labour-power must be able to produce *any* use-value that capital demands within the scope of the socially available technology. If, for example, the capitalist wanted to produce brandy, but the labour-power that he has purchased could only be used to produce whisky, the chrematistic of industrial capital would be as constrained by the use-value of whisky as that of merchant capital. In that case, the introduction of industrial capital as a form of capital more advanced than merchant capital would have been meaningless. Of course, no labour-power can produce what is technically impossible to produce. But, so far as technically producible commodities are concerned, the development of capitalism tends to simplify their production processes at least at the margin of their operation, as will be described later (in Chapter 4). Therefore, labour-power's ability

to produce *any* (technically producible) use-value is increasingly secured with its commodification.

* * *

The form of industrial capital holds the production-process (C . . . P . . . C′) between the circulation-processes (M – C and C′ – M′) as an intermediate phase. The production-process of capital does not lie outside the sphere of circulation, but is enveloped in it. Industrial capital can, in this manner, subsume the entire production-process of a society, converting it into a capitalist society, in which all use-values are, in principle, capitalistically produced as commodities by means of commodities alone. Capitalism constitutes a historically viable society because the form of industrial capital, unlike the two earlier forms of capital, directly governs the social production-process. For the same reason, the activity of industrial capital need not, and cannot, be studied in its historical form in pre-capitalist societies. The activity of industrial capital *ipso facto* forms capitalist society.

It is true that the activities of both merchant and money-lending capital worked against the traditional mode of production. They indeed powerfully contributed towards the disintegration and decay of feudal societies over centuries prior to the birth of capitalism. In the end, however, these two forms of capital did not, by themselves, radically alter the existing mode of production. Nor did they, by themselves, usher capitalism in. Operating outside the sphere of production, these two forms of capital never struck at the foundations of traditional societies. However, when industrial capital commenced its action, an altogether different situation had to evolve. For this form of capital did not spare the productive base of society. Though not a dominant form of capital in the beginning, industrial capital, once it arose, deeply penetrated society's productive base, which it eventually reorganised into its value-formation-and-augmentation process. It thus established itself as the governing mode of capitalist society.

While, in the rest of the dialectic, the activity of industrial capital will be studied in all its theoretical detail, here the nature of its form, prior to its activity, must be specified. Industrial capital, which subsumes the process of production as an intermediate phase of its circulation, accomplishes the perfect mode of capital, first and foremost, in that it overcomes the restrictions of specific use-values. Within the context of simple circulation, or commodity exchanges, the social quality of value immanent in a commodity cannot be more liberated than in the form of industrial capital. For, in this form, value can grow freely,

i.e. unrestricted by any particular use-value, in its never-ending, self-propelled motion. The operating principle of capitalism is already fully exposed by the form of industrial capital, which, within the sphere of simple circulation, cannot pass over to a more synthetic form. The conversion of labour-power into a commodity, which constitutes the necessary and sufficient condition for this form of capital to commence its real action, however, cannot be deduced from the logical development of the commodity-economy.

3.3.2 Labour-Power as a Commodity

Without the conversion of labour-power into a commodity, industrial capital cannot, in practice, begin its operation. But labour-power is not inherently a commodity. For it is not a product of capital. No capitalist can sell labour-power, since it never constitutes part of C′. Yet all industrial capitalists must purchase labour-power as a commodity, since it always forms part of C. Even as a commodity, labour-power is inseparable from the person of the worker and cannot be reproduced except in his individual consumption-process. In the production-process of capital, labour-power does not retain its value, since the capitalist cannot resell it as a commodity. It can only be consumed as a use-value which yields productive labour in the production-process. The conversion of labour-power into a commodity is indeed a historical institution peculiar only to the capitalist mode of production. It is, therefore, necessary here to examine the nature of this special commodity closely.

Marx gives the following definition:

> By labour-power or capacity for labour is to be understood the aggregate of those mental and physical capabilities existing in a human being which he exercises, whenever he produces a use-value of any description (*Capital*, I, p. 164).

However, "the aggregate of those mental and physical capabilities existing in a human being", and which can be expended as productive labour for the provision of a use-value, need not always be so expended. It can also be used up in unproductive labour (i.e. labour which does not produce a use-value), or can be dissipated in recreation or loafing. In order for labour-power to be converted into a commodity, the aggregate of those productive capabilities, mental and physical, must be alienated from the human being who possesses it. A very special so-

cial relation is needed to accomplish the formal separation of this work-capacity from its natural owner. That social condition is met with the emergence, in the market, of the "free" worker, i.e. the worker "free in the double sense, that as a free man he can dispose of his labour-power as his own commodity, and that, on the other hand, he has no other commodity for sale, is short of everything necessary for the realisation of his labour-power" (ibid., p. 166.).

In order for the worker to be free in the disposition of his labour-power as a commodity, he must, of course, be a free person untrammelled by the feudal or any other master–servant relation. For, if he is not a free person, his appearance in the market as the seller of his labour-power may be legally forbidden or otherwise restricted. When he sells his labour-power as a commodity, moreover, the worker must not sell it "rump and stump, once and for all" but only "for a definite period of time" (p. 165). For otherwise he would be converting himself from a free person into a slave. In order for the worker to be free from the possession of any other commodity but labour-power, he should be deprived of the means of production with which to produce a commodity for sale, and the means of subsistence on which to live until he finishes his production. For, if he has sufficient means for the production of a commodity from the sale of which he may earn his livelihood, he has the choice of not selling his labour-power as a commodity.

* * *

The first condition of "freedom in the double sense" implies that labour-power is a "time-commodity", saleable only for a definite duration of time. The use-value of labour-power which yields productive labour may be consumed by its purchaser as he sees fit, but only during the contractual period of employment. If the purchaser-capitalist fails to use it appropriately in light of his plan during this time, labour-power vanishes without producing a proper use-value. Yet, the capitalist who has purchased more labour-power than he can use during the contractual period cannot resell the redundant labour-power as a commodity. He must return unused labour-power to its natural owner, by annulling the present contract at some cost. The worker may then sell his labour-power to another capitalist under a new contract. This means that, in the production-process of capital, labour-power does not retain its value.

The capitalist contracts with the worker for the use of his labour-power for a definite period of time by promising to pay wages, in

much the same way as he borrows funds from a money-lender for a given period by promising to pay interest. Unlike the money-lender, the worker does not hold the capitalist's IOU as a legal document. But an implicit contract is there, and it cannot be unilaterally changed by one party's whims. During the contractual period, the industrial capitalist retains the use-value of, or more specifically the right to use, the labour-power that he has purchased for the period. During this period, he must consume the labour-power productively, so that the value of the new product finished at the end of the period should be more than the value of the labour-power and the means of production, advanced as capital and consumed productively during the same period. In other words, labour-power must form a value greater than its own, while being consumed in the production-process of capital.

Because of this special requirement, the purchase of labour-power must occur at the beginning of the contractual period of employment, even though the payment of its value will not be made until the end of the period, after the delivery of its use-value. The capitalist must purchase labour-power at the beginning of the period. For otherwise he would not, as the purchaser of the commodity, acquire the right to its use-value. Yet, if he also paid for it at the beginning, he might not be able to keep the worker, the natural owner of the labour-power, under his control for the rest of the period. By the end of the period of employment, however, the labour-power should have formed and augmented some value, provided that the capitalist used it judiciously. This ensures that, before he parts with his wage-funds, he already has some value-objects, which he may dispose of in the market.

* * *

The second condition of "freedom in the double sense" implies that the worker should be paid a *subsistence*. By subsistence is meant a basket of wage-goods necessary and sufficient to ensure the re-supply of labour-power in the next period, in "the same conditions as regards health and strength".

Marx has the following to say.

> If the owner of labour-power works today, tomorrow he must again be able to repeat the same process in the same conditions as regards health and strength. His means of subsistence must, therefore, be sufficient to maintain him in his normal state as a labouring individual. His natural wants, such as food, clothing, fuel and housing, vary according to the climatic and other physical conditions of his

> country. On the other hand, the number and extent of his so-called necessary wants, as also the modes of satisfying them, are themselves the product of historical development, and depend therefore to a great extent on the degree of civilisation of a country, more particularly on the conditions under which, and consequently on the habits and degree of comfort in which, the class of free labourers has been formed (*Capital*, I, p. 168).

This subsistence clearly cannot be biologically ascertained, or medically prescribed.

The determination of the subsistence of the worker, therefore, is not free from "a historical and moral element" (ibid.) but, in any given social context, it is always "practically known" (ibid.) as a datum. However, since labour-power does not survive its mortal owner, his subsistence must include enough means of livelihood for the worker to raise and educate his children who will take his place when he retires from active working life. In other words, the "subsistence" standard of living of the worker must be such as to perpetuate the normal family life of the working class. For it is in the family life that labour-power is reproduced, not only day by day, but also from one generation to another. The maintenance of such a family life does not exclude a natural growth of the working population.

It is the value of the means of subsistence so defined that is equal to the value of labour-power. Indeed, when the free worker prices his labour-power by way of its value expression, the normal price of his labour-power tends to settle to the normal price of his means of subsistence. For if the normal price of labour-power exceeds that of the means of subsistence today, the worker can buy more means of livelihood than is sufficient to reproduce his labour-power, and may fail to market it tomorrow. If the normal price of his labour-power falls short of that of his means of subsistence, the worker will be unable to supply his labour-power tomorrow in "the same conditions as regards health and strength". Therefore, society's existing labour-power can be maintained, if and only if the normal price of labour-power tends to equal that of the worker's means of subsistence. Since labour-power is not a capitalistically produced commodity, it does not possess a value other than that imputed to it by the value of the worker's means of subsistence.

3.3.3 The Transition to the Doctrine of Production

As already emphasised, the advent of the working class "free in the double sense" does not follow logically from the preceding argument in the doctrine of simple circulation. History too makes it sufficiently clear that capitalist society did not automatically evolve as soon as commodity exchanges reached a state of considerable sophistication. The historical fact that the enclosure movement in England from about the sixteenth-century onward set off, for the first time, the "primitive accumulation" that eventually led to the conversion of labour-power into a commodity, cannot be explained simply by commodity-economic logic. The dialectic of capital cannot, and does not, explain the historical cause of primitive accumulation which was necessary for the formation of capitalist society. Primitive accumulation, in the sense not only of the accumulation of mercantile wealth on the one hand, but also of the creation *en masse* of propertyless wage-workers on the other, must be presupposed as the initial condition of capitalism. Purely capitalist society, which has no beginning nor end, "recollects and internalises (*erinnert*)" primitive accumulation as its own past.

If the cause of primitive accumulation cannot be "logically" explained, its effect and significance, which a purely capitalist society always presupposes, must be thoroughly grasped. It is vitally important, in other words, to know what primitive accumulation has accomplished, regardless of why and how it in fact occurred. Primitive accumulation essentially means the divorce of the direct producers from land. In traditional societies the direct producers were tied to the land as peasants, and were subject, in one form or another, to the master–servant relation based on pre-capitalist landownership. When the peasants were evicted from the land, whether by the enclosure movement or otherwise, and were denied access to the natural means of production represented by land, they found themselves free not only from feudal bondage but also from the means of production and livelihood. They were, in other words, left with nothing else to sell but their own labour-power. Since primitive accumulation did not occur overnight, and was not locally restricted, a variety of different methods were employed to turn the peasants into propertyless wage-workers. The formation of the worker "free in the double sense", however, always presupposes his expulsion from the land upon which his previous life depended.

Only when the worker is detached from land can capital purchase his labour-power as a commodity and appropriate the productivity of his labour. At the same time, the traditional landowner whose land is now practically empty of peasants cannot by himself exploit the natural means of production that he possesses. He is, therefore, obliged to

rent his land to capital for productive exploitation. In this way, capital obtains ready access to both labour-power and land, the two original sources of productivity. Since capital can by itself produce all intermediate products, once the original elements of production are at its disposal, there remains nothing that limits the unfolding of its productive activity. The mercantile wealth that has been accumulated in the sphere of circulation can now be poured into the sphere of production, establishing the unchallenged supremacy of industrial capital.

So far as the relation between capital and landed property is concerned, the above schema needs some modifications, since capital's access to land by a rental contract, rather than by the purchase of a commodity, is never free from impediments. Up to this point, however, the dialectic has not had to accommodate itself to the existence of landed property and the necessity of paying rent to it for the use of land. Such issues will be treated, in full detail, in Volume 2, Chapter 8. In the meantime, the relation between capital and landed property will be left implicit in the following analysis. That is to say, it must be presupposed that capital somehow obtains free access to land of uniform quality, pending further specifications of this point at a later stage. With this presupposition (*voraussetzung*), capital is now seen to be the omnipotent producer of all use-values as commodities by means of commodities. Society's production-process is, therefore, placed under the unlimited governance of capital.

* * *

The circulation of industrial capital, $M - C \ldots P \ldots C' - M'$, is interrupted by the production-process as the dots in the formula indicate. This interruption occurs because of the special nature of labour-power as a commodity. If C contained only means of production, P_m, and not labour-power, L_p, this interruption would not occur. Since it is a time-commodity, labour-power once purchased cannot be resold by the capitalist, and hence does not retain its value during the period of its employment. This causes the interruption of circulation in the motion of industrial capital. If, instead of human labour-power, the capitalist purchased an animal, the circulation of his capital would not be interrupted. The animal, which is a capitalistically produced means of production, is a value-object; and its "labour-power" cannot be sold separately from the animal itself. As the animal is consumed productively, a new product emerges. The value of the animal is preserved in the production-process and is merely transferred from the animal as means of production to the new product. The capitalist can, at any time,

sell off either the "undepreciated" portion of the animal or the newly produced commodity, and retrieve the original value that he advanced.

Exactly the same situation would hold, if, instead of the animal, a slave were purchased as a means of production. The fact that he is human does not change the story. The only reservation that becomes necessary in this case is that a slave-owning capitalist is a contradiction in terms. A slave-owner would appropriate surplus labour directly by the application of extra-economic coercion, whereas a capitalist produces surplus value (appropriates surplus labour only in this form) without resorting to it. The point here is that only the human labour-power of a worker "free in the double sense" can be sold and purchased as a commodity, separately from its natural owner. Therefore, this special commodity must be treated differently from the means of production. Since it is impossible for any production, i.e. conversion of a use-value into another, to take place without the intervention of human labour, industrial capital must always purchase labour-power, the time-commodity, as part of its productive elements, C.

Because labour-power loses its value as soon as it is purchased, forcing an interruption in the circulation of capital, the latter has no choice but to use it productively. For labour-power, if left alone, can vanish without producing a use-value. Although it is potentially a capacity to produce any use-value, it can also be spent in unproductive labour and in recreation or loafing. The purchaser-capitalist cannot afford to let that happen, having already staked his capital in its purchase. The only way in which he ensures the recovery of the capital that he advanced in labour-power is to use it productively, i.e. in the creation of the appropriate use-values. If properly used, however, it is in the nature of labour-power to form and augment value in the new product. Labour-power, in its productive consumption, cannot fail to do more than make up for the loss of its own value. This is the other aspect that renders labour-power a special commodity. No other commodity has the power to form and augment value (see Chapter 4 for further detail on this point).

* * *

Although, after its purchase, labour-power belongs to the capitalist as a use-value, its consumption requires the physical exertion of its natural owner, i.e. the worker. The latter must receive "instructions", which involve no extra-economic coercion, in order to know how he should apply his labour-power. The natural owner of labour-power cannot decide on his own how to use it because, having sold it, he no longer owns

its use-value. It is entirely up to the purchaser-capitalist to determine how "productively" it should be used, the only proviso being that he cannot, in principle, resort to extra-economic compulsion. Labour-power will then be productive in two senses. In one sense, it produces a use-value that meets the capitalist's demand. The capitalist is responsible for giving clear and reasonably simple "instructions". For if the instructions are not sufficiently clear or too complicated, the natural owner of labour-power may misapply it, and produce an inappropriate or defective use-value. If that happens, since the capitalist cannot resort to extra-economic coercion, his only protection is to go back to the market for better labour-power. The result is that only such instructions as are clear and uncomplicated enough for the majority of the workers are effective.

In the second sense, labour-power is value-productive instead of use-value productive. The worker who has sold his labour-power must follow any sufficiently clear and simple instructions that the purchaser-capitalist may choose to give. In other words, labour-power must produce *any* commodity in the production-process of capital, just as money can purchase *any* commodity in the market. The natural owner of labour-power is thus required to be totally indifferent to its specific application. Whether he spins cotton or digs coal or bakes bread depends on the instructions he receives from his capitalist employer. Having sold his labour-power, he cannot refuse to obey any clear and simple enough "instruction". Therefore, the capitalist production of use-values is necessarily and simultaneously the production of value, i.e. the production of commodities indifferent to their use-values. In other words, capitalistically produced use-values are *intrinsic* commodities, or value-objects, unlike use-values produced by a small commodity producer. Whether or not this latter sells his output as commodities depends on contingencies outside the production-process itself, such as the personal decision to sell it, or circumstances that either compel or induce him to do so. *Capital has no such choice simply because C contains labour-power purchased as a commodity. It cannot produce a use-value, except by simultaneously producing value.*

Precisely for that reason, however, the production-process of capital automatically divests itself of all non-economic, i.e. contingent, factors that interfere with the production of use-values. It cleanses, as it were, the production of use-values common to all societies, by ousting from it all extra-economic considerations. The "economic" process of production, now no longer embedded in the web of other human pursuits, exhibits itself transparently as the substrate of the operation of

industrial capital. Because of its radically commodity-economic nature, the production-process of capital, which is a value-formation-and-augmentation process, allows the production of use-values in general, which is common to all societies, to stand revealed in all its purity and transparency, unencumbered by all non- or extra-economic contingencies.

4 The Production-Process of Capital

4.1 THE LABOUR-AND-PRODUCTION PROCESS

4.1.1 The Labour-Process and the Production-Process

From beneath the motion of industrial capital where it has so far remained hidden now emerges the production of use-values in general. The latter which we call the *labour-and-production process* in the dialectic of capital is common to all societies, but it is divested of all extra-economic contingencies. It forms the material foundation of trans- or supra-historic economic life regardless of its social form. No society can exist without *production*, which is here defined as "the human being's purposive activity on nature so as to transform part of it into readily (i.e. directly or productively) consumable use-values". That this is a supra-historic condition of human existence can scarcely be doubted, despite the mystification of the concept of production by bourgeois economics. A clear distinction must be maintained between the production of material objects (use-values), which involves the human being's purposive action on nature, and the mere rendering of services by one person to another, which neither directly nor indirectly involves any transformation of nature.

The provision of services is, of course, not inessential to society's existence. It, however, does not belong to the labour-and-production process which underlies the motion of industrial capital. Services are rendered "between us", so to speak. They are not use-values, and hence cannot become commodities which Marx specified as "objects outside us" (*Capital*, I, p. 43). Since they are not commodities, they cannot be produced as value. Since they do not embody value, their provision cannot underlie the value-formation-and-augmentation process of industrial capital. "Services" usually refer to forms of unproductive labour, and they are classifiable into the following three categories: (i) personal; (ii) public-administrative; and (iii) business-administrative. In a purely capitalist society only the third category is of theoretical importance. Thus these services will be treated in the next chapter as types of "commercial labour". For commercial labour is essentially an extension of the capitalist's own entrepreneurial and managerial effort.

The second category which includes the services of soldiers, teachers, ritualists, health-care workers and bureaucrats, belongs to the state, which must be held implicit if the logic of capitalist society is to be prominently displayed. As for the first category, it can be considered as a carryover from pre-capitalist society, which is in the process of disappearing under capitalism because of what I would call "the tendency towards the progressive materialisation of economic life". This phrase refers to the increasing tendency in capitalism to substitute material objects, such as alarm clocks, for direct human services, such as a maid's call in the morning. Capitalism cannot produce maids, but it can produce alarm clocks. Therefore, if social life requires many persons to wake up punctually in the morning, capitalism responds to the need by producing alarm clocks and rendering the maid's service in that regard unnecessary.

* * *

The production of use-values should, in the first place, be viewed as a *labour-process*, i.e. as the human being's purposive work on nature. It is a direct extension of his biological life, compelled by the necessity of self-preservation. Even the most primitive person works on nature in order to survive. The "subject" (operator) of this labour-process, which Marx aptly describes as "the everlasting, nature-imposed condition of human existence" (*Capital*, I, p. 179), is undoubtedly the human being himself who possesses labour-power as the source of productive labour. In this process, however, the human being works on specific parts of nature, called the *objects of labour*, such as trees which he intends to transform into lumber. He is also assisted by *means of labour* such as axes, saws, a lumber yard, and the like. He may also utilise *supplementary or auxiliary materials*, such as a whetstone with which to sharpen his axes, the measuring tape to determine lumber sizes, and so on. These categories classify the means of production in the order of proximity to nature, and show the direct and indirect (roundabout) use of nature in the labour-process.

Once the labour-process is completed, however, the produced use-values are *products*, which have resulted from the labour-process. From the point of view of the products, the labour-process can be regarded as the *production-process* of things by things. From this point of view, the objects of labour, the means of labour, and the supplementary materials can be collapsed into the one category of the *means of production* (P_m), and together with labour-power (L_p), they are called the *elements* or *factors of production*. This new categorisation means

that the production of use-values is now considered as a purely technical input–output process, rather than as a purposive activity of the human being on nature. Only from this point of view does it become clear that the output of a labour-process can also be the input of another labour-process, or that the labour-processes of society cannot occur each in isolation, but must constitute a techno-socially organised and integrated whole. This is an important aspect of production. Indeed, the capitalist always looks at production only in this way.

Even when one looks at the use-value production of a Robinson Crusoe, one cannot fail to distinguish its two aspects. First, it is his purposive work on nature to ensure his survival; secondly, it is a technically organised arrangement of things, i.e. of products (outputs) and factors of production (inputs). Both are essential to the production of use-values and require an equal emphasis. Bourgeois economics which looks at the production of use-values only from the second point of view, and is oblivious to the first, offers a one-sided and unbalanced theory of production and fails to see the crucial role of labour in production.

* * *

The present theory is, of course, much broader than the bourgeois theory of production, which one-sidedly stresses the production-process to the neglect of the labour-process and conceives of production exclusively as "technical" transformation. Yet the present theory, too, it must be admitted, suffers from a limitation in that the concept of the labour-and-production process represents use-value production in general *as viewed by capital.* Although this process is expressly said to be common to all societies, it cannot be deduced from a general study of all or many historically existent societies by abstracting, in some subjective manner, from their transient peculiarities. The labour-and-production process is not an ideal-type, thus obtained. It is nothing other than the production-process of capitalist society but with its commodity-economic mode or integument deliberately set aside, or "bracketed", as illusory and inessential.

For this reason, the labour-and-production process is not only cleansed of extra-economic human relations, which in pre-modern societies frequently interfered with production, but is also free from thermodynamic restrictions on production. In other words, the labour-and-production process represents factory-style industrial production (rather than agricultural production occurring in harmony with natural cycles), *which capital views subjectively as trans-historical.* It, in this sense, constitutes

the substrate of the value-formation-and-augmentation process of capital. Clearly, it is very different from the concept of use-value production in general, and common to all societies, as understood from the point of view of historical materialism or of "economics in the broad sense". And this is as it should be, since the labour-and-production process is a theoretical construct within the dialectic of capital. Even though its "subject" (operator) is conceded to be the human being, and not capital, and even though it is presumed to represent use-value production in general which is common to all societies, the conceptualisation must still occur from the point of view of capital.

To some extent, this narrow vision of capital is reflected in the strong tenor of anthropocentrism implied in the concept of the labour-process. Though the latter is a process of man–nature interface, it is understood that the human being as the subject confronts nature as the object in that process. He purposively works on nature so as to transform part of it for his use. Here, nature is "objectified" and remains completely passive, ready to be "conquered" and "dominated" by the human being, the only active agent. Thus, although the labour-process is "the everlasting nature-imposed condition of human existence", the need for productive technology to be embedded in the ecology of nature is not a point specifically emphasised by this concept.

The present reservation, however, does not apply to Marx's idea of the labour-process (as distinct from our concept of the labour-and-production process) which is understood as representing the production of use-values in contrast to the production of value and surplus value. In other words, the labour-process, as Marx visualised it, is closer than what is here called the labour-and-production process to the concept of use-value production in general which historical materialism (or the materialistic conception of history) talks of. In that case, the difficulty would be to explain how such a general concept can be smuggled into the exclusive territory of the dialectic of capital. This is more than a trivial issue of theoretical subtlety. For the failure to distinguish between production as viewed by capital and production in the truly broad sense leads to the facile misconception that one merely has to "peel away" the commodity-economic skin from capitalism to find a socialist society, ready at hand, to be operated by central planning. Nothing is further from the truth.

Another point of difference between Marx's labour-process and the present concept of the labour-and-production process is obvious from the different names. According to Marx "it is not necessary to represent our labourer in connexion with other labourers" (*Capital*, I, p. 179) in the context of the

labour-process. If so, the labour-process alone cannot stand for use-value production in general and common to all societies. For in all societies production is an organised activity of human beings. The production of use-values always involves a techno-social organisation (which means a social division of labour except in the artificial metaphor of Robinson Crusoe), and this aspect is emphasised by the production-process. It is, therefore, both necessary and appropriate to bear in mind that the labour-process and the production-process are the two sides of one and the same thing, the production of use-values in general, and that neither is more important than the other.

4.1.2 The Dual Nature of Productive Labour

From the argument of the previous section, it follows immediately that labour-power is the active element, and the means of production the passive one, in the production of use-values. For there is no production-process which is not at the same time a labour-process. There is, however, an even more convincing argument for the primacy of labour in production, in that labour-power is adaptable to the production of *any* use-value, whereas the means of production are always specific to the production of particular use-values. Since a use-value is the result of the human being's conscious work on nature, every produced use-value is a product of labour. But wine is not made out of metal; leather cannot be extracted from milk; and a power-station does not print books. For the production of a particular use-value, the appropriate means of production are quite specific, and are arranged in specific quantities and combinations.

The duality of productive labour, i.e. labour that produces use-values, springs directly from this fact. Labour that produces any use-value with indifference is *abstract-human labour*; labour that produces a specific use-value is *concrete-useful labour*. Productive labour is always both abstract-human and concrete-useful at the same time. It is important to stress that this duality of labour is prior to the production of commodities and is not a characteristic peculiar to it. The production of use-values as such already implies, if implicitly, the concept of abstract-human labour which comes from the fact that labour-power (L_p) can, in principle, produce *any* use-value.

The nature of abstract-human labour is best understood, in the first instance, in reference to Robinson Crusoe who is supposed to have performed many forms of concrete-useful labour such as fishing, making a boat, mending nets, etc. While producing different use-values in each of these occupations, Robinson Crusoe always expended *his* labour, i.e. exercised his manual and muscular faculties to work on nature.

Robinson's labour as such was homogeneous in all cases, and differed only in length and intensity. He was, therefore, aware of how many hours' worth of his abstract-Robinsonian labour he had to allocate for the production of one use-value rather than another. This concept of abstract-Robinsonian labour enabled him to plan his production-process because it was not specific to any use-value. Society does the same thing as Robinson Crusoe.

* * *

Since all use-values are products of labour, it is possible to calculate how much labour-time has been spent to produce a particular use-value rather than another. In order to perform this calculation on a social basis, it is not necessary that everyone's labour-power be equally effective or efficient. What is needed is a dependable weighting scale to be applied to labour-power of differing efficiencies. For example, children's labour-power may be judged half as productive as adults' labour-power, if, on an average, a child spends twice as much time as an adult to get the same thing done. Fishermen's labour-power may be graded according to the weight of the commonest catch on an average day, farmers' labour-power according to the area of planting per day, and so on. Even in the case of a Robinson Crusoe his labour-power may be more effective in the morning than in the afternoon, or in spring than in summer. What matters here is an average in performance and productivity.

The "simpler" the labour-process the more easily will such grading scales be devised. The simplification of the labour-process occurs in proportion to its importance to the economic life of society. For example, in a predominantly agricultural society peasants' labour tends to be relatively simplified, though manufacturing labour does not. For if peasants cannot easily shift between growing, say, wheat and potatoes, society's survival may be seriously jeopardised.

Labour may be described as simple if the producer can switch from one form of concrete-useful labour to another without serious difficulty or cost. In medieval societies, agricultural labour was to a great extent simplified, but manufacturing labour was not. All forms of productive labour tend to become simple, as will be shown later, with the development of the capitalist method of production. This fact makes capitalist society an exceptionally productive society.

* * *

The simplification of labour "actualises" abstract-human labour. Although labour-power is potentially adaptable to the production of

any use-value, so that abstract-human labour is always present, this fact may sometimes not be apparent. There are technical, sociological, educational and other reasons that may prevent it from being actualised, making the cost of transferring it from one sphere of production to another very difficult or almost impossible. For example, the guild system made it impossible for outsiders to learn manufacturing skills; the caste system prohibited certain classes of people from engaging in productive labour. Capitalism, however, swept away all such restrictions.

Because the universal simplification of labour tends to be realised as the production of use-values becomes commodity-economic, the full potential of abstract-human labour is "not only in theory but also in reality" accomplished under capitalism. In this context, abstract-human labour specifically appears as value-producing labour, and concrete-useful labour as use-value producing labour. This fact, however, must not confound us into believing that the abstract-human aspect is a property specific to the labour which produces commodities. Any productive labour is abstract-human as well as concrete useful, even if commodity production brings its abstract-human aspect out into the open as value-producing labour.

"The concept of labour that produces all forms of wealth dates from Adam Smith despite its validity in all epochs", says Marx. That concept is a product of the capitalist era because only with the development of capitalism has "labour not only as a category but in reality . . . become means to create wealth in general" (*A Contribution to the Critique of Political Economy* (Progress, Moscow, 1970), p. 210; *The Grundrisse*, (Vintage, New York, 1973), p. 104). In other words, capitalism brings out and articulates certain aspects of what human beings are always capable of doing. It does not cause them to "mutate" so that they may do what they were previously unable to do.

4.1.3 The Bipartitude of Productive Labour

Productive labour is not only dualistic in that it consists of abstract-human and concrete-useful labour, but it is also bipartite in consisting of necessary and surplus labour. *Necessary labour* is productive labour performed for the purpose of reproducing labour-power consumed, or used up, in the process of production; *surplus labour* refers to productive labour otherwise spent.

This partition of productive labour presupposes the concept of abstract-human labour. For example, society as a whole may spend 6 million hours of productive labour during a week consisting of 5 working

days. If the weekly production of the wage-goods for the consumption of productive workers requires, directly or indirectly, 3 million hours, and if the wage-goods are produced in just the necessary and sufficient quantities to reproduce society's labour-power which is productively consumed during the week, then the total labour-time (t) of 6 million hours is partitioned into the necessary labour-time (v) of 3 million hours and the surplus labour-time (s) of also 3 million hours. On a daily basis, the total labour-time (t) will be 1.2 million hours, and the necessary labour-time (v) and the surplus labour-time (s) are both 0.6 million hours.

If there are 100,000 workers in society, each individual worker must be working 12 hours a day (t), performing 6 hours of necessary labour (v) and also 6 hours of surplus labour (s). It can also be said that every hour of productive labour (t) in this society consists of half an hour of necessary labour (v) and half an hour of surplus labour (s). Thus, with the concept of abstract-human labour, any unit expenditure of productive labour can be partitioned into the necessary part and the surplus part.

* * *

If $(a, b, \ldots, x)$ represents the subsistence of the worker, i.e. the list of the quantities of wage-goods consumed by him, and if $\lambda_a, \lambda_b, \ldots, \lambda_x$ are the number of hours of abstract-human labour socially required for the production per unit of the wage-goods **A**, **B**, . . ., **X**, then,

$$\lambda_a a + \lambda_b b + \ldots + \lambda_x x = 6$$

means that his necessary labour-time is 6 hours. The productivities $\lambda_a, \lambda_b, \ldots, \lambda_x$ depend, not only on the technology available to society, but also on the manner in which society organises its labour-and-production process. Given these parameters, any productive worker who spends $\lambda_a a$ hours of labour wherever **A** is commonly produced, $\lambda_b b$ hours of labour wherever **B** is commonly produced, . . . , and $\lambda_x x$ hours of labour wherever **X** is commonly produced should be able to complete the basket $(a, b, \ldots, x)$ in 6 hours.

The assortment $(a, b, \ldots, x)$ of use-values should certainly be above the so-called biological or physiological minimum. But how far above cannot be *a priori* determined. Nor should this assortment be taken to be "a complex of physical wage-goods" that can be prescribed like a medicine or fodder to reproduce any worker's labour-power, as with Bortkiewicz (See L. von Bortkiewicz, "Value and Price in the Marxian

System", *International Economic Papers*, no. 2, 1952, pp. 5–60). It is a "permanent" rather than "temporary" (to use the Friedmanite jargon) consumption basket of the representative productive worker. Indeed, given $\lambda_a, \lambda_b, \ldots, \lambda_x$ any $(a', b', \ldots, x')$ which can be produced in 6 hours:

$$\lambda_a a' + \lambda_b b' + \ldots + \lambda_x x' = 6$$

can also be the subsistence of a worker.

The production of subsistence should also include provision for the proverbial rainy day. No society is free from natural and human disasters. If not enough wage-goods are stocked for such occasions, the material foundation of society cannot be said to be secured. Necessary labour must also include labour that supports children and members of the working class who are sick. The caring for the old and the terminally sick is, however, another question. Since, in this case, the maintenance of society's labour-power is not implied, productive labour performed for them must be judged as belonging to surplus labour. In primitive societies the old and the terminally sick were sometimes left to die, in order not to strain the desperately low productivity available to them. Such cruel societies are, however, rare and are not even relevant to the study of economics. The scope of the latter is restricted to societies in which both necessary and surplus labour are performed.

* * *

In order to show clearly the significance of surplus labour, I wish to begin by stating that a Robinson Crusoe cannot perform it. Suppose that, if he works for 5 hours, he can produce just barely enough to survive for the day, but that, in order to enjoy some luxury and also to provide for unpredictable contingencies, he in fact works 6 hours a day. Since he has no family to look after (prior to the arrival of Friday, of course), and since he has already built enough provisions for a rainy day, he clearly has no further reason or incentive to produce use-values that he himself cannot consume even in the future. If, therefore, he is already satisfied with his present standard of living and comfort, and if he has no intention to explore a new technology, the rest of his time can be devoted to recreation. He clearly does not perform surplus labour, i.e. he does not produce use-values for other persons. Even if he intends to improve his standard of living, and works 7 hours instead of 6, he does not perform surplus labour. These 7 hours are entirely "necessary" for the more costly reproduction of his own labour-power

(which he himself has decided to upgrade), since no one else consumes the use-values produced in the seventh hour of his labour.

These considerations make it quite clear that surplus labour arises only in a social context. Use-values produced during surplus labour-time must be consumed by someone other than the direct producer (i.e. productive worker). The consumers of surplus products are either natural or social *dependants*. The old and the infirm previously mentioned are natural dependants. (Here, the children of the direct producers and the workers temporarily sick are not viewed as dependants, although this is contrary to the ordinary usage of the word.) Social dependants include all mental workers, such as administrators, ritualists, educators, soldiers, etc., who do not produce use-values (though they render useful services). Society supports natural dependants for humanitarian reasons, and social dependants of the above kind with the understanding that they enrich social life, and may indirectly assist the production of use-values.

Not all social dependants are "exploiters". Many are not only useful but also indispensable for the existence of society. However, the number of natural dependants and useful social dependants is not unlimited. It does not exceed a certain proportion of the number of the direct producers, given the prevailing technology. If all these dependants are adequately supported, however, that does not mean that the capacity for surplus labour, which the existing population of productive workers can render, is necessarily exhausted. Suppose that each productive worker can reproduce his labour-power by working 6 hours a day, but that he can physically work for 12 hours without exhausting himself. It does not then follow that he must work for all these hours. It may be that the surplus labour of 3 hours is sufficient to care for the natural dependants and adequately support "useful" social dependants. The remaining 3 hours can always be spent for recreation. Only if the king or the tribal chief is greedy may his workers be obliged to perform extra hours of surplus labour to support not-so-useful social dependants, especially those whose rôle is to enforce the king's or the chief's repressive rule.

In this way, the existence of purely parasitic dependants rests on the exploitability of surplus labour. History shows that the class of purely parasitic dependants was limited in size in pre-capitalist societies because, once a certain level of comfort or luxury was attained, there was little incentive to exploit productive workers any further. That changes with capitalism, however. As will soon be explained in detail, capital, as the form of value augmentation, does not permit a less-

than-exhaustive use of labour-power purchased as a commodity. Under capitalism alone is there a logical necessity to stretch surplus labour to its physical limit. This makes capitalist society far more "productive" (i.e. addicted to production) than other society.

4.2 THE VALUE-FORMATION-AND-AUGMENTATION PROCESS

4.2.1 The Labour Theory of Value

The labour-and-production process that underlies the motion of industrial capital has already exhibited various important properties, but it has remained completely passive. Being common to all societies, it contains no specific mode or principle of operation. It is like an orchestra without a conductor, or like a vehicle without a driver. The labour-and-production process can be set in motion only when it is "subsumed" under an operative principle specific to a given social formation. The labour-and-production process operated under the principles of the commodity-economy becomes the value-formation-and-augmentation process, which constitutes the essence of the capitalist mode of production.

Since labour-power does not preserve its value in the production-process of capital, the capitalist who has invested, say, \$100 in labour-power and means of production must produce a commodity which has a value that is greater than \$100 in order to remain in business. The value of the means of production purchased by industrial capital is called "constant capital" (c), and that of labour-power "variable capital" (v). If $c + v =$ \$100, and if the produced commodity sells for \$120, it can be said that a surplus value (s) of \$20 is earned. The operation of industrial capital consists then of producing $c + v + s =$ \$120 from out of $c + v =$ \$100.

If $c =$ \$60 is advanced in the means of production, this value is preserved during the production-process. Part of the means of production not yet consumed (or used up) can always be resold as a commodity. If the use-value of the means of production is consumed in the production-process, the use-value of a new commodity is simultaneously created and the latter, whether partially or completely finished, is a value-object. Therefore, no part of $c =$ \$60 is lost at any time during the production-process, which merely transfers this value from the means of production to the product. It is quite otherwise with $v =$ \$40 advanced in labour-power. Since labour-power is a time-

commodity, it becomes a non-value as soon as it is purchased, i.e. at the outset of the contractual period of employment, whether it is immediately integrated into the production-process or not. Hence, the moment the capitalist advances $c + v = \$100$, he retains no more than $c = \$60$ as a value-object. If the capitalist left the workers idle, both the use-value and the value of their labour-power would disappear every minute, and would, in any case, be completely dissipated by the end of the contractual period. Then the capitalist would be left with $c + v + s = \$60$, where $v + s = \$0$. Surely he cannot afford such an outcome. He must use the labour-power that he purchased as productively as possible, so that, by the end of the production-process, he has the newly produced value of $v + s > \$40$.

Although the same symbol v is used both in capital advanced, $c + v$, and in the product value, $c + v + s$, it should be noted that the v in $c + v$ is an old value, i.e. value pre-existing the production-process, and the $v + s$ in $c + v + s$ is a new value formed during the production-process. The production-process, so far as it newly produces $v + s$ (which is called value added or value product), is the *value-formation process*. The production-process, so far as it produces positive surplus value ($s > 0$), is the *value-augmentation process*. The same production-process is also simultaneously the process of transferring the old value c from the means of production to the new product.

Capital, however, cannot form a new value, $v + s$, by producing just any arbitrary use-value. It has to produce use-values that are socially demanded, and in the order of social priority. If capital produces a use-value that society does not need or want, no amount of "exploitation" can yield a positive surplus value, $s > 0$. For example, let a capitalist produce waterbeds with holes, or clocks that do not keep time properly, or bread containing sawdust. Since no one purchases such defective use-values, he not only fails to earn $s > 0$ but also wastes $v = \$40$ and $c = \$60$, thus ending up with $c + v + s = \$0$. Even if he produces more credible use-values, however, he will not do much better if they are already socially overproduced so that no one is forthcoming to purchase them.

Since the capitalist too is a commodity seller, he cannot dictate social demand. He must conform to it by trial and error, i.e. by testing the market. He must, in other words, identify the right commodity to produce, while abiding by the principle of "buying cheap and selling dear", i.e. by the principle of maximising his rate of profit during any given period of time. If all industrial capitalists follow this principle,

the result is that they tend to produce the proper quantities of all socially demanded commodities. That is to say, in consequence of capitalist competition, all use-values tend to be produced in the "socially necessary" quantities.

The production of all commodities in the socially necessary quantities, however, implies an optimum allocation of society's labour directly and indirectly required for the production of all these use-values. In other words, all capitalistically produced use-values tend to embody a definite fraction of society's total expenditure of productive labour. The amount of labour that produces the socially necessary quantity of the commodity is called *socially necessary labour* for its production; and this, as the social real cost of production of the commodity, constitutes the substance of value. (Let us not confuse "socially necessary labour" as defined here with "necessary labour-time", which was previously defined. For they are two entirely different concepts.)

* * *

Value was originally characterised as the socially uniform quality present in all capitalistically produced commodities. But what constitues the substance of value was not a question previously addressed. That is to say, the question as to how that uniform quality of value is formed was left unanswered. Only now, in the present context, can this question be properly addressed. If we ask: "Why does the capitalistically produced commodity possess value?", then the answer will be: "For it has been produced, like other commodities, indifferently to its use-value, i.e. only as an embodiment of socially necessary labour." In other words, it is reasonable to conclude that a capitalistically produced commodity obtains its value in proportion to the expenditure of socially necessary labour.

The production of a commodity, however, also consumes (uses up) man-made and reproducible means of production. It may, therefore, be asked why the consumed means of production do not form the value of the commodity. In reply it can be stated that means of production, or capital goods, are not original factors of production but intermediate goods. They are themselves already produced capitalistically as commodities, and are, therefore, in possession of value. When they are productively consumed, their value, as constant capital, is preserved and transferred to the new product. The question that must then be faced boils down to how, as capitalistically produced commodities, means of production too acquired the substance of value in the first instance. That question takes us back to square one.

What about the natural means of production, generically represented by land, then? As original factors of production, are they not also formative of value? To this question the answer is "no". They do not themselves possess value; nor are they consumed in the production of value. Although they do contribute to the production of commodities as use-values, they remain irrelevant to the production of commodities specifically as value. They are, in principle, free gifts of nature, and hence their use (I do not say overuse) incurs no real cost to society.

Thus, it can already be concluded that neither man-made nor natural means of production can form value, and that only labour can be productive of value. I also wish to emphasise, at this point, the all important distinction between "value productivity" and "use-value productivity", which are frequently confused. All factors of production contribute to the production of use-values. They are all undoubtedly "use-value productive". It is, however, not possible to conclude that they are, therefore, also "value productive". The factor of production that forms value must be abstract-general as well as being concrete-useful. In other words, it must be a factor that is not specific to the production of a particular use-value.

Although it makes sense to talk of abstract-human labour, it does not make any sense at all to talk of "abstract physical capital" or "abstract-spatial land". Only productive labour has the dual property of being abstract-human and concrete-useful at the same time. Means of production, whether produced or natural, are employed quite specifically for the production of a particular use-value. They cannot be applied indifferently to the production of *any* use-value. That is why they fail to form value, no matter how much they may be productive of use-values.

It follows from the above argument that the labour theory of value stems from the completely objective fact that only productive labour, because of its abstract-human property, can be applied through capital "indifferently" to the production of all use-values. There is nothing ethical or subjective about this fact, notwithstanding the obstinate allegation to that effect by the bourgeois critics of the labour theory of value.

* * *

The validity of the labour theory of value is of fundamental importance to the capitalist mode of production. The labour theory of value, however, cannot be demonstrated to hold, unless labour-power has been converted into a commodity. It is sometimes claimed that an "undiluted" labour theory of value holds only under a regime of simple

commodity production. Nothing is further from the truth. A simple commodity production means that the producers of use-values are in possession of their own means of production with which to realise their own labour, so that labour-power is *not* a commodity. In that case, the production of commodities can never be indifferent to use-values, and commodities cannot be produced as value.

A craftsman-master who has the skill, experience and instruments to produce, say, pieces of furniture cannot easily shift to the production of, say, watches, when the price of watches rises relatively to the price of furniture. Nor can he work beyond his physical limit, even if the demand for furniture becomes urgent. The so-called "terms-of-trade effect" may even "destabilise" the market. That is to say, the master can easily choose to take a vacation, instead of working himself to death, when the demand for his furniture raises its price and his income sufficiently. The regime of simple commodity production which, because of the producer's stake in particular use-values, does not necessarily tend to produce commodities in the order of social priorities, cannot allocate society's productive labour optimally. Such a regime is, of course, unable to support an historical society. Not only does an "undiluted" labour theory of value fail to materialise under such a regime, but the regime itself also turns out to be a pure figment of the imagination.

The persistent nostalgia for simple commodity production, by both Marxists and non-Marxists, stems from the widely held fallacy that the labour theory of value is meant to explain the relative prices of commodities. Such a theory, if at all defensible, should be called "the labour theory of prices". The capitalist market, however, determines production-prices that are in general not proportional to values. This does not, in any way, discredit the labour theory of value as distinct from the labour theory of prices. For even though the capitalist market determines prices as though such things as values never existed, production-prices (i.e. equilibrium prices) are, in any case, irrevocably tethered to values, diverging from proportionality to values (i.e. from value-proportional prices) only in a strictly predictable fashion. This will be explained later. Moreover, production-prices are shown to be positive, if and only if values are positive. That is to be expected, since only the commodities that are capitalistically produced as value can hope to have normal prices or production-prices. The labour theory of value does not intend to explain the relative prices of commodities, since that is the rôle of the theory of production-prices. The labour theory of value simply reaffirms the fact that capital produces all

commodities as value, i.e. indifferently to use-values, by tending to allocate only "socially necessary labour" for their production. It is this fundamental fact that enables capitalism to form a historical society.

4.2.2 The Viability of Capitalist Society

The validity of the labour theory of value, i.e. the proposition that, in capitalist society, all use-values tend to be produced with socially necessary labour, implies the viability of capitalist society, which further implies the perpetuation of labour-power as a commodity. But it has already been shown that the conversion of labour-power into a commodity implies the validity of the labour theory of value. Therefore, the labour theory of value and the existence (or viability) of capitalist society imply each other. They are, in fact, equivalent. A historical society is said to be viable if the direct producers have a guaranteed access to the product of their necessary labour.

The question of viability is ignored altogether by neoclassical economics which treats an imaginary, instead of a historically existent, society. For example, the proposition that a competitive allocation of resources is Pareto-optimal does not guarantee either the viability or the reproducibility of society. A Pareto-optimal wage may be insufficient for the maintenance of the existing working population, or it may enable all workers to purchase more than their subsistence so that they will withdraw from the labour market.

The ultimate test of a society's historical existence may be accomplished by the procedure which I would call "Robinsonisation". Consider a Robinson Crusoe who, on an isolated island, works for 6 hours a day, producing six use-values from **A** to **F**, one in each hour. Suppose that these are just enough for the reproduction of his labour-power. If that is the case, then six men as physically fit as the Robinson Crusoe, forming a working community among themselves in which each member produces only one of the six use-values by working 6 hours a day, can (more than) reproduce their labour-power, since each man in isolation would have done so in any case.

In such a community, "complete specialisation with trade" and "complete diversification in isolation" would be equivalent. Everyone obtains each of the six necessary use-values by working for one hour. Prices are necessarily proportional to the expenditure of labour because trade and productive diversification are equivalent. The procedure of Robinsonisation is an operation that transforms specialisation and trade back into the individual allocation of labour over time. If

everyone in society can produce what he or she must consume to survive, then that society cannot fail to be viable. Specialisation and trade only make life easier in such a society. In principle this test must be applied to any society to see if it is really viable.

* * *

Let us, however, suppose that a pirate ship arrives on the scene, and demands that this community of working people offer them use-values $\mathbf{E}'$ and $\mathbf{F}'$ as tributary goods. How burdensome the production of these tributary goods will be depends, of course, on how demanding the pirates are. In any case, the pirates are not productive workers. They get use-values, not by directly working on nature, but with intimidatory gunshots and other plunderous measures. They do not, therefore, evaluate $\mathbf{E}'$ and $\mathbf{F}'$ in proportion to the labour spent for their production. If they are "rational", as orthodox economics expects them to be, they will calculate the "money cost" of appropriating the tributary goods, and exchange these goods among themselves accordingly.

Let m_e and m_f be the money costs of appropriating one unit of $\mathbf{E}'$ and $\mathbf{F}'$ respectively. Then for some constant $k > 0$, the prices of these goods will be $p_j = m_j k$ $(j = e, f)$. However, $\mathbf{E}$ and $\mathbf{F}$ are also wage-goods, and were exchanged among the productive workers, previous to the arrival of the pirates, according to the quantity of labour spent per unit of them: λ_e and λ_f. In general, it turns out that

$$\lambda_e : \lambda_f \neq m_e : m_f.$$

This non-proportionality does not matter so long as the relation between the pirates and the productive workers is strictly extra-economic. Indeed, in a pre-capitalist society the scope of the commodity-economy was always restricted. The economic life of the exploiting class and that of the exploited class could be effectively segregated, since society's economy was not wholly governed by commodity-economic principles.

Only in a capitalist economy, which insists on organising the whole of society under commodity-economic rules, does this inconsistency in the valuation of commodities pose a problem. Capital does not obtain surplus products from the direct producers by applying extra-economic coercion to them from the outside. Instead, capital turns the whole system of use-value production into its instrument of value augmentation. What it does is to let the workers produce all use-values (wage-goods as well as tributary goods) indifferently, and pays them wages that are only enough for them to buy back the wage-goods, which are

the products of their necessary labour. The allocation of productive labour through capital is essentially the same as in the community of the direct producers prior to the arrival of the pirates. That is to say, it is as though **E**′ and **F**′ were wage-goods like **E** and **F**. But the pricing of all goods is such as to ensure the appropriation of **E**′ and **F**′ by the pirates. This crafty device is illustrated in what follows.

* * *

Suppose that a wage-worker in capitalist society works 12 hours a day, of which 6 constitute his necessary labour-time, and the rest his surplus labour-time. Denote by **Y** the baskets of wage-goods, of which one is just sufficient to reproduce his labour-power. Suppose that a capitalist produces, per employment of one worker, 5 units of **Y** a day, in which 30 hours of direct and indirect labour are embodied. If his daily cost-price (or the money value of his constant and variable capital), assuming that no fixed capital is present, is \$12.5 and his daily sale \$15, then the rate of profit is $r = (15/12.5) - 1 = 20$ per cent, the price and the value of **Y** are respectively $p_y = 15/5 = 3$ and $\lambda_y = 30/5 = 6$ (see Table 4.1).

Since the capitalist has to pay the wage with which his worker can buy back one unit of **Y**, the wage-rate has to be \$3. On the other hand, the capitalist must spend \$12.5/5 = \$2.5 as the cost-price per unit of **Y**. This number $m_y = 2.5$ can also be viewed as the money cost of capitalistically appropriating a unit of **Y**. Since the price of **Y** is $p_y = 3$, it follows from $p_y = m_y k$ that the pirates' constant is $k = 1.2$, which is equal to the profit factor $1 + r$. Notice here that the composition of capital c/v is 3 in labour terms and 3.167 in money terms. Let us, for simplicity's sake, assume that c/v is always higher in money terms than in labour terms by $1/18 = 5.556$ per cent.

If there is either only one capital good in use, or there are many which are used in the same proportion, this assumption remains valid. In other cases, it does not strictly hold. But the extent to which c/v in money diverges from c/v in labour is bounded between a minimum and a maximum. It is entirely justified in the present context to assume that the distance between the minimum and the maximum is small enough to be negligible. (In my earlier writings, including *The Dialectic of Capital* (Toshindo, Tokyo, 1986), vol. I, pp. 310ff., this point was left ambiguous. Only in 1987 did I come to the present understanding of this matter.)

If the labour theory of value is assumed to hold, all use-values in the economy must be produced in the socially necessary quantities. In

Table 4.1

Measured in:	c		v		s		
Labour	18	+	6	+	6	=	30
Money	9.5	+	3	+	2.5	=	15
Quantity	3.17	+	1	+	0.83	=	5

$\lambda_y = 6$, $p_y = 3$, $r = 0.2$

other words, if **X** is any other commodity produced in this system, it has to be as profitable to produce as **Y** is. Suppose then that another capitalist produces, per employment of one worker, 15 units of **X** in which 45 hours of direct and indirect labour are embodied. Then the situation shown in Table 4.2 emerges. The wage of \$3 must, in any case, be paid to the worker for the purchase of a unit of **Y** at $p_y = 3$. Since c/v in labour terms is 5.5, that in money terms should be about 5.8 being greater by some 5.556 per cent. That makes the cost-price of this capitalist equal to \$20.42. Since he too should earn the profit-rate of 20 per cent, the 15 units of **X** must be sold for \$24.5, the price per unit being $p_x = 24.5/15 = 1.633$. The money cost of appropriating a unit of **X**, on the other hand, is $m_x = 20.42/15 = 1.361$. Thus, in this case too, the pirates' coefficient is $k = 1.2$ from $p_x = m_x k$, and is equal to the profit factor $1 + r$.

Since **X** represents any commodity produced in the system other than **Y**, this example shows how all prices are rationally determined once p_y and r are known, and the volume of output and its labour content are specified. These prices are, of course, not in general proportional to values. They are, however, consistent with the fact that all commodities are capitalistically produced as value with socially necessary labour. This fact does not disappear just because prices diverge from values. On the contrary, any rational pricing of commodities must strictly abide by this fact, i.e. the fact that society's productive labour is properly allocated for the production of all use-values in the socially necessary quantities. Capitalism thus synthesises the pirates' method of pricing with the viability condition that must be satisfied in any society, i.e. that all direct producers are guaranteed access to the product of their necessary labour.

The present exercise must, however, not be confused with the general theory of price determination. For here p_y and r are merely assumed rather than being deduced. (That is like selecting an arbitrary point on what the neoclassical economist calls "the factor-price frontier".)

Table 4.2

Measured in:	c		v		s		
Labour	33	+	6	+	6	=	45
Money	17.42	+	3	+	4.08	=	24.5
Quantity	10.66	+	1.84	+	2.50	=	15

$\lambda_x = 3, \quad p_x = 1.633, \quad r = 0.2$

What can be concluded at this point is merely this, that if commodities are capitalistically produced as value, so that the labour theory of value tends to hold, then there exists a set of equilibrium prices and a uniform rate of profit that are consistent with the viability of capitalist society.

4.2.3 The Necessity of the Law of Value

The equivalence of the labour theory of value with the viability of capitalist society will be referred to as the necessity of the law of value. The law of value may be understood to be the labour theory of value as it implies the existence of capitalist society, or the existence of capitalist society with specific reference to the working of the labour theory of value. If the labour-and-production process is operated capitalistically as the value-formation-and-augmentation process, then the law of value necessarily enforces itself.

Why is there such a close relation between capitalism and the determination of value by socially necessary labour? It is because the existence of any historical society depends, in the final analysis, on human beings' exertion of productive labour on nature, i.e. on use-value production. Without it no historical society can exist. That is why Adam Smith described labour as "the original purchase money of all things" or "real price" (Adam Smith, *The Wealth of Nations*, Oxford, 1976. Vol. 1, p. 48). In other words, labour is society's real cost of production. It is the specific manner in which society expends productive labour (which is sometimes called the mode of production) that characterises different types of society historically. The specifically capitalistic manner in which productive labour is expended in capitalist society is defined by the law of value.

However, the primitive fact that human beings work on nature to acquire the wherewithal to live does not appear straightforwardly in capitalist society, but rather in a form adapted to the operation of

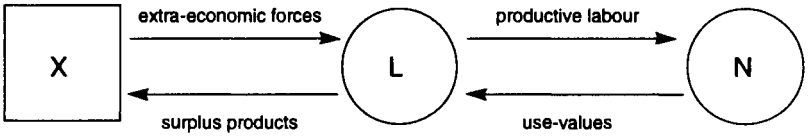


Figure 4.1 The simple form

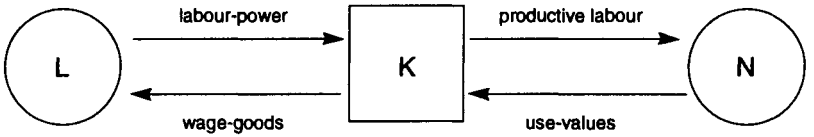


Figure 4.2 The capitalist form

capital. Both Figure 4.1 and Figure 4.2 show that direct producers (**L**) always expend productive labour on nature (**N**), so as to obtain use-values. But in a simpler society represented by Figure 4.1 the relation between the direct producers and nature is immediate. When the ruling class (**X**) demands a share in produced use-values, it applies extra-economic coercion to productive workers in order to obtain surplus products. In capitalist society represented by Figure 4.2, by contrast, no productive labour can be expended on nature except through the mediation of capital (**K**). By purchasing labour-power as a commodity in exchange for wage-goods, capital converts all products of labour into products of capital.

* * *

The exchange of labour-power for wage-goods is, however, not an ordinary exchange of commodities. It is an exchange of commodities through the production-process. If, for example, wine is exchanged for linen, both commodities exist at the moment of exchange. When labour-power is purchased, however, wage-goods, or their equivalents, do not as yet exist. They will be produced only as labour-power is productively consumed in the production-process of capital. It is like buying a hen's ability to lay ten eggs with five of them it will lay, before that ability will have been exercised. It is through such an irregular trade that capitalism hangs together. For in this exchange of labour-power for wage-goods the law of value appears in its purest form.

If the value of labour-power is 6 hours of labour, the wage-goods must also be the product of 6 hours of labour. Value is exchanged for value regardless of what money wages turn out to be. The reason is that the consumption of labour-power by capital for 6 hours will always produce the wage-goods sufficient to reproduce that labour-power. In this fundamental value relation, productive labour unmistakably forms value. However, if the expenditure of labour for 6 hours forms 6 hours' worth of value in wage-goods, the same labour forms surplus value, or augments value, by simply being spent for more than 6 hours for the production of any other use-value that is socially demanded.

From the above argument it follows that the division of the value product ($v + s$) into that which is needed for the reproduction of labour-power (v) together with surplus value (s) is not strictly a matter of distribution. The "distribution" is a foregone conclusion in the very process of forming the value product ($v + s$). The latter is not a pre-existing pie to be freely shared between labour and capital. Constant and variable capital ($c + v$) are advanced as cost-price before the value product ($v + s$) emerges. In other words, wages are just as much part of the cost of production as they are part of the value added. Surely the exchange of labour-power for wage-goods cannot be innocently reduced to a matter of distribution or sharing of the product, as it is usually understood. The farmer does not "share" with nature the seed that he has to set aside for future production from the disposable part of the crop. He must set aside the seed to keep his capital intact, before he can share the rest (which then constitutes his disposable income) with others.

* * *

In the value-formation-and-augmentation process, the duality of productive labour appears specifically as consisting of value-forming labour, which is "abstract", and use-value producing labour, which is "concrete". As value-forming labour, abstract-human labour currently expended becomes a fraction of the aggregate-social expenditure of productive labour. In other words, it becomes socially necessary labour. However, since commodities are produced by individual capitalists according to the method of trial and error, without the knowledge of what other capitalists are doing, it is not possible to calculate the value of, or socially necessary labour to produce, a commodity in advance.

This is in striking contrast to the expenditure of concrete-useful labour. Every tailor knows how much time he has to spend to make a jacket without consulting the market. For example, he produces a jacket of a certain quality and style in 5 hours as a use-value. Whether he

also spends 5 hours' worth of socially necessary labour for its production cannot be directly ascertained by him, or by his capitalist employer. It can only be found *ex post facto* in the market, not by the sale of this single jacket, but by the repetitive purchase of the same jacket in many samples which establishes its normal price. Value is not an empirically observable quantity. It has little to do with the labour-time individually spent. As the law of value enforces itself through the motion of prices, intangible values tend to settle to levels which no one has planned. Being imperceptible to the senses, value appears to be a mysterious substance, and it constitutes the true source of the fetishism of commodities.

Since the "anarchy of capitalist commodity production" must always be regulated by the law of value *ex post facto*, so as to adapt to the existing pattern of social demand, individual capitalists who operate blindly, by trial and error, tend to believe that they are driven by some external force beyond their comprehension or control. They imagine that commodities are animated by some supernatural spirits. The exposition of the law of value, therefore, lays bare the fetishism of commodities in its genesis. The law of value does indeed hold the key to the secret of capitalism.

4.3 THE DEVELOPMENT OF THE CAPITALIST METHOD OF PRODUCTION

4.3.1 Absolute and Relative Surplus Value

Now that the labour-and-production process common to all societies is capitalistically operated as the value-formation-and-augmentation process, it can be shown that the latter exploits and develops the potential productivity of labour to its maximum. This is accomplished through the development of the capitalist method of production, which is also the process of perfecting labour-power as a commodity.

The crucial concept here is the *rate of surplus value*. It has already been shown that the value of the means of production pre-exists the production-process in which they are used up, and that it is simply transferred to the new product without forming or augmenting any new value. Although productive labour cannot be performed without the assistance of the means of production, these are only the instruments which assist variable capital in its production of surplus value. They are, as Marx described, like "retorts and other vessels" (*Capital*, I,

p. 207) in a chemical analysis. Therefore, if the capitalist advances $c + v$ to produce $c + v + s$, the relation between labour and capital is expressed by the rate of surplus value, s/v, rather than by the rate of profit, $s/(c + v)$.

The rate of surplus value shows how the currently applied labour-time ($t = v + s$) is divided into the necessary (v) and the surplus (s) component. If the rate is 100 per cent, half of the currently expended labour is for the reproduction of labour-power, and the rest for the production of surplus value which does not belong to the direct producer. The rate of surplus value can be said to be determined by the length of the working-day, given the length of the necessary labour-time. Or, it may be said to be determined by the length of the necessary labour-time, given the length of the working-day. If t is the length of the working-day and v the length of the necessary labour-time, the rate of surplus value, e, is given by

$$e(t, v) = \frac{t - v}{v}$$

If, in this formula, the constancy of the necessary labour-time, $v = \bar{v}$, is implied, the production of *absolute* surplus value is said to occur. If, on the other hand, the above formula implies the constancy of the working-day, $t = \bar{t}$, then the production of *relative* surplus value is said to occur.

Any production of surplus value is both absolute and relative, depending on how one looks at it. If it is viewed simply as an excess of newly produced value over the reproduced value of labour-power, surplus value is absolute. If it is viewed relative to the technical condition that determines the value of labour-power, surplus value is relative. Marx's own definition was that "the surplus value produced by the prolongation of the working-day" is absolute, and that "the surplus value arising from the curtailment of the necessary labour-time" (*Capital*, I, p. 299) is relative. That, however, gives the false impression that there are some initial t_o and v_o in reference to which the production of surplus value is neither absolute nor relative, and that only when one of the variables changes, while the other remains constant, can one determine whether the "change" in the production of surplus value is absolute or relative. In order to avoid such confusion, I am here adopting a definition different from Marx's.

* * *

Since the production of absolute surplus value is simpler, it should be examined first. It is simpler because the state of art, or technology, that determines the length of the necessary labour-time can be taken to be given and constant. Under a given v the production of absolute surplus value is possible up to a certain physical limit; and capital, as the form of value augmentation, always pursues this limit. Absolute surplus value can be increased in two ways: (1) by the extension of the working-day, and (2) by the intensification of labour.

The extension of the working-day was originally sought by legislation. After the Industrial Revolution, however, the mechanisation of industry deprived labour-power of skills, craftsmanship and other contingent factors. Not only did legislation for the prolongation of the working-day become unnecessary then, but the need to run the machinery with the least interruption also led to an unrestrained extension of the working-day which often surpassed the physical tolerance of the workers. Thus, at this point, it became necessary to legislate against an excessively long working-day. The limit, however, cannot be concretely specified in theory. Historical, sociological and physiological conditions must all be taken into account for society to decide what the maximum length of the working-day ought to be.

Once the length of the working-day is set, the intensification of labour becomes the most dependable method of producing absolute surplus value. If T is the length of the working-day in the number of clock-hours, and b the factor of intensity (such that $b = 1$, if the intensity is standard), then $t = bT$ is the length of the working day in effective labour hours. Similarly, if V is necessary labour-time in clock-hours, $v = bV$ is the necessary labour-time in effective labour hours. Suppose first that $b = 1$, $T = t = 12$, $V = v = 6$. Then we have

$$e = \frac{T - V}{V} = \frac{t - v}{v} = 1.$$

Let the intensity of labour be doubled: $b = 2$, while the length of the working day remains constant: $T = 12$. If technology is also unchanged, so that $v = 6$, $t = 24$ and $V = v/b = 3$, then we have

$$e = \frac{T - V}{V} = \frac{t - v}{v} = 3.$$

Notice that the production of absolute surplus value implies that the length of the necessary labour-time in effective labour hours (v) is held constant, so that the length of necessary labour-time in clock-hours varies inversely with the intensity of labour. The above example shows that, if the intensity of labour is doubled, the rate of surplus value trebles. One can easily confirm that in order to double the rate of surplus value, the intensity of labour need be raised only by 50 per cent, not 100 per cent.

In my *The Dialectic of Capital*, vol. I, p. 334, I exhibited an incorrect formula involving the labour intensity coefficient b. I take this opportunity to retract it.

This method too, however, has a limit because labour-power can be spoiled by physical and mental exhaustion in consequence of the intensification of labour. Indeed, the production of absolute surplus value, whether by the extension of the working-day or by the intensification of labour, cannot be pursued without limit. This is the reason that capital must seek another way of producing surplus value, namely, the production of relative surplus value.

* * *

The production of relative surplus value involves a technical change such as to lower the length of necessary labour-time. Not all technical changes entail a higher productivity in wage-goods. For example, technical progress in the production of luxury goods, i.e. non-wage consumer goods for capitalists, does not entail a higher productivity in wage-goods. But a technical improvement in the production of capital goods has an indirect effect in the production of wage-goods. In general, all manner of technical progress, with the exception of that restricted to luxury goods, will have some positive effect on the productivity of wage-goods production, and hence will contribute to an increased production of relative surplus value.

No individual capitalist, however, introduces a new technique with a hope that it may eventually raise society's production of relative surplus value. He does so, even if the production of relative surplus value does not increase, as in the luxury-goods industry, when he has the chance to earn *extra surplus value*.

Suppose that all cotton yarn manufacturers except one invest \$270 a day in order to transform 160kg of raw cotton into 120kg of cotton yarn, by depreciating 80 labour hours' worth of spinning machines.

They all employ 10 workers for 12 hours a day, paying the money wage of \$3 to each. If the daily output of each of these capitalists sells for \$300, surplus value of \$30 is earned, the rate of surplus value being $e = 100$ per cent. The one exceptional capitalist introduces a new technique which enables him to transform 200kg of raw cotton into 160kg of cotton yarn in one day, by depreciating 80 labour hours' worth of improved machines, and employing 10 workers for 12 hours a day at the same wage-rate of \$3.

These two cases can be written as follows:

$$(160\text{kg}, 80\text{h}, 10\text{w}) \rightarrow 120\text{kg},$$

$$(200\text{kg}, 80\text{h}, 10\text{w}) \rightarrow 160\text{kg}.$$

The first entry in the parentheses refers to the quantity of raw cotton productively consumed in kilograms, the second entry to the depreciation of the machine measured in the number of hours of labour, and the third entry to the number of workers participating in production. To the right of the arrow sign is the output of cotton yarn in kilograms. If the price of raw cotton is \$1.25 per kilogram, the price of cotton yarn \$2.5 per kilogram, and two hours of embodied labour equals \$1, then the above tabulation in physical terms can be translated into money terms as follows.

$$(\$200, \$40, \$30) \rightarrow \$300,$$

$$(\$250, \$40, \$30) \rightarrow \$400.$$

Hence, the conventional capitalist invests \$270 to earn the surplus value of \$30, while the innovative one invests \$320 and earns the surplus value of \$80. Thus, a rate of surplus value of $e = 266.7$ per cent is achieved by the innovative capitalist, as compared to the $e = 100$ per cent which prevails elsewhere.

Suppose that 160kg of raw cotton are the product of 400 hours of labour. Then, in labour terms, the two situations can be compared as follows:

$$(400 + 80=)\ 480c + 60v + 60s = 600$$

$$(500 + 80=)\ 580c + 60v + 60s = 700$$

If the product of 600 hours of labour sells for \$300, then \$400 should represent the product of 800 hours of labour, though, in fact, only 700

hours of labour are embodied in the 160kg of cotton yarn produced with the new technique. The difference of 100 hours of labour observed here is defined as *extra surplus value* which, in money terms, is \$50. It is equal to the difference between the surplus value earned by ordinary capitalists and that earned by the exceptional capitalist.

An extra surplus value provides the industrial capitalist with a strong incentive to adopt a new method of production. The advantage, however, cannot be enjoyed permanently by the innovator. For, sooner or later, other capitalists begin to introduce the same technique. And, as it becomes more and more widespread, these other capitalists find it increasingly difficult to sell the product of 700 labour hours for the value of 800 hours. The "social value" of 800 gradually falls to the "individual value" of 700 for the innovating capitalists. (This point will be explained in fuller detail later in connection with the theory of market value in Volume 2, Chapter 7.) Eventually the extra surplus value of \$50 will be eliminated, and all capitalists will advance \$320 to produce the output of 700 labour hours, which they will sell for \$350. Thus they will all earn the surplus value of \$30, which is just 100 per cent of their variable capital.

What remains, however, is the fall in the value of cotton yarn. One kilogram of cotton yarn which used to be produced with 5 hours of labour, and which used to cost \$2.5, is now producible with about 4.4 hours of labour, and can be purchased for about \$2.19. Therefore, if any wage-good is made of cotton fabric, the basket of wage-goods required for the reproduction of labour-power can be produced with less than 6 hours of labour, and can be purchased for less than \$3. For example, that basket may now be produced with 5.5 hours of labour and may cost only \$2.75. In that case, the rate of surplus value is raised to about $e = 118$ per cent from the original 100 per cent. This additional 18 per cent reflects an increased production of relative surplus value, which remains after the extra surplus value is eliminated. Nor is the benefit of this increased production of relative surplus value restricted to the cotton yarn producers. It is shared by the whole class of capitalists.

4.3.2 Cooperation, Manufacture and Mechanisation

Even though a mass of propertyless workers are created in the process of primitive accumulation, that alone does not enable the capitalist to employ these workers advantageously for the production of surplus value, unless his factory is well adapted to make the best use of their

labour-power. The production of absolute and relative surplus value presupposes an industrial process, in which capital can consume the labour-power of wage-workers without vocational or occupational restrictions. The modern factory from which craftsmanship and specialised skills are, by and large, eliminated consists of three factors: cooperation, manufacture and mechanisation. These three are the constituent elements of the modern capitalist factory; they do not necessarily describe the historical stages of its evolution.

In order to invest capital in an industrial enterprise, a definite quantity of money must have been accumulated in advance. The prior possession of such money distinguishes the capitalist from his workers. The distinction will become more definite and irreversible with the accumulation of capital. The pre-eminence of a capitalist over workers first arises when the capitalist begins to employ a significant number of workers under his supervision. The so-called method of *cooperation* consists of the gathering of productive workers in one place, so as to exploit the productivity of collective labour. Although in other societies as well cooperation occurred frequently, it was not an invariable feature of use-value production in those societies. A capitalist factory, however, is always a form of cooperation.

Cooperation "socialises" the labour-and-production process. The craftsman-like skills of individual workers are no longer the most desirable qualities of those working together side by side. It is their conformity to the discipline of collective work that is sought and promoted. For a concentrated application of labour accomplishes more than the sum of individual labours. Thus, the effect of cooperation is, in the first place, to make labour-power more uniform. Cooperation also establishes the capitalist as the authority in the workplace. For workers, being indifferent to the use-values that they produce, cannot organise themselves productively. Moreover, some means of production can be economised by joint use, and their wasteful or improper use can be readily guarded against. Thus, the capitalist benefits not only from concentrated, standardised and disciplined labour, but also from economies in the use of means of production.

* * *

Cooperation immediately gives rise to an organised division of labour within the workplace. This is called the manufacture division of labour or simply *manufacture*. Manufacture here means cooperation which involves a division of labour. This is different from the social division of labour or capitalists' specialisation. When the capitalist is already

specialised in the production of a single use-value, its production-process can be further subdivided into a number of partial operations. The manufacture division of labour within the factory presupposes the social division of labour, which is a natural outcome of the commodity-economy. The manufacture division of labour does not lead to the social division of labour of independent handicraft workers. The latter, on the contrary, are integrated into the organic whole of interdependent workers whose collective productivity is exploited by the capitalist. Thus, the workers are reduced to partial operatives and lose touch with the integrated whole of the production-process.

As the skill and efficiency of a narrowly focused operation are promoted, and as the speed and intensity of work are more readily enforced, the workers become even more indifferent to the production of use-values. To the extent that technical skills are not fully eliminated, however, this tendency towards indifference stops short of completion. The differentiation of tools and machines to fit sectional requirements prepares for the mechanisation of the production-process. Yet the employment of highly skilled workers cannot be wholly avoided under the manufacture division of labour. To some extent, completely unskilled workers can now be employed. But they still remain subordinate to their more trained colleagues, whose technical skills cannot be dispensed with.

Marx talks of "the manufacturing period properly so-called" referring to "that period, roughly speaking, that extends from the middle of the 16th to the last third of the 18th century" (*Capital*, I, p. 318). From this quotation, however, one should not draw the conclusion that, during that period, manufacture was in fact the predominant method of capitalist production. Although large manufactories were already present in the fifteenth and sixteenth century, they had not yet overpowered the domestic handicraft industry even by the seventeenth or eighteenth centuries. The fact that manufacture was a rather exceptional method of production prior to the Industrial Revolution does not, however, contradict the theoretical proposition that the modern factory, deprived of machinery, would be virtually identical to a manufactory, which differs from simple cooperation in having a well developed division of labour.

* * *

By *mechanisation* I mean the introduction of centrally coordinated machinery into manufacture. Industrial machines are generally classified into power machines, transmission machines and working machines.

The first two magnify the productivity of the last, which are traditional hand-tools removed from the hands of the workers, and fitted into a mechanical system. Working machines are no longer the docile instruments of production which handicraft workers used to operate on their own initiative. They have become limbs of the mechanism operated by capital and demanding workers' submission. The mechanised labour-and-production process is an engineering process, into which labour-power is fed like raw materials. The process is fully simplified and requires no more than totally unskilled labour, with the exception perhaps of a few skilled workers in supervisory positions who work in part as the capitalist's assistants.

The simplification of the labour-process by machinery and the elimination of skills (deskilling) complete labour-power as a commodity. The need to run machinery without interruptions makes both the prolongation of the working-day and the intensification of labour imperative. At the same time, the employment of women and children extends the scope of the working population, depressing the real wages of adult male workers. Since labour-power is deprived of skills and idiosyncrasies, it tends to be "standardised" and is made available in the open market for a standard wage-rate. In the consumption of labour-power purchased as a commodity the capitalist is, therefore, assured of maximum freedom.

The mechanisation of the production-process does not, however, occur in all industries equally. Some industries are bound to be more difficult than others to mechanise, enabling handicraft production to survive longer. In any one industry, however, the mechanised method of production, once introduced, generally tends to displace the traditional method swiftly because of its incomparably greater productivity. If one industry is well mechanised, that does not fail to affect related industries. Thus the powerful force of mechanisation, once set in motion, has a revolutionary effect on the whole economy. This leads to the greater concentration of capital and the formation *en masse* of commodified labour-power. The groundwork of capitalist production is thereby laid.

4.3.3 Wages as the Price of Labour-Power

With the establishment of the modern factory, labour-power becomes available to capital as the source of completely indifferent productive labour. Yet labour-power is not a capitalistically producible commodity. It remains the only "simple commodity" under capitalism. Thus,

when a wage-worker is engaged by a capitalist, neither of them realises that they have traded labour-power as a commodity. Being a "time-commodity", labour-power loses its value as soon as the contractual period of employment begins. In the production-process, labour-power is consumed as a use-value which yields a flow of productive labour. Moreover, the capitalist does not possess the wage-goods to pay for labour-power at the beginning of the contractual period. Labour-power is paid only at the end of that period, after having produced wage-goods or their equivalent. The exchange of labour-power for wage-goods, in other words, is not an ordinary exchange of commodities. It is an exchange of commodities through the production-process.

The indifference of labour power implies that the worker cannot consume it productively unless the capitalist "instructs" him how to exert it. Although the consumer of labour-power is its purchaser-capitalist, the latter cannot directly exert labour-power because it is inseparable from the person of its natural owner. This is another factor that mystifies the sale and purchase of labour-power as a commodity. The reason why the value of labour-power is paid only "after work" is also due to the fact that labour-power cannot be separated from its natural owner. If he becomes sick, or injured, or otherwise unable to work during the period of employment, the capitalist employer cannot receive the delivery of the use-value of labour-power. Whereas with an ordinary commodity, the delivery of its use-value is assumed always to take place at the moment of purchase and of payment for it (purchase and payment occurring, in principle, simultaneously), labour-power does not surrender its use-value when purchased. Only after it is productively consumed can its use-value be delivered. The delivery of its use-value implies the production of value-objects for the capitalist. The capitalist cannot pay until the worker has had a chance to produce a value-object, i.e. a commodity which embodies value.

The form of wage-payment provides an appropriate method of handling these complications. This form, contrary to popular belief, antedates capitalism. Long before the advent of capitalism it was customary to pay daily or weekly wages to one who regularly performed useful work, such as a cook, a gardener, a carpenter, a seamstress, etc. These pre-capitalist service workers, however, did not sell their labour-power to their employer. They were paid for the useful work that they rendered to their customers, i.e. for the result of their work. Therefore, the payment of wages does not automatically mean a conversion of labour-power into a commodity. Wages and salaries can be paid to independent contractors, and "contractors" are more like capitalists than workers.

* * *

In capitalist society, labour-power is a commodity despite, rather than because of, the payment of wages. The wage-payment system happens to be a suitable form in which to contain the "unnatural" exchange of labour-power for wage-goods for the following reasons. First, the capitalist does not have to pay for labour-power until it has already produced a saleable value-object for him. Secondly, it gives the false impression that the capitalist pays wages for the useful work rendered to him by the worker, and not for labour-power as a time-commodity. This impression is, of course, fallacious because wage-workers in capitalist society cannot perform useful services on their own initiative and responsibility. Being indifferent to the use-values which they produce, they cannot sell their services by saying: "I can do this or that for you." They can only offer their labour-power by saying: "Here is my capacity to work which can be used for the production of any use-value. Try me and tell me what to do." They are selling their labour-power; they are not selling the result of their useful work.

To conceal this vital difference under the same form of wage-payment is to conceal the reality of surplus value production. This accords well with the capitalist outlook. The classical conception of wages as the price of "labour" rather than the price of "labour-power" illustrates this point. Labour is the service yielded by the consumption of labour-power; it is not a material object which can become a commodity. Therefore, "the price of labour" is an irrational expression, though it may make rhetorical sense. For example, one buys tobacco, a use-value, by paying its price. But the taste of the tobacco, or the utility of it, which individual smokers enjoy with differing measures of satisfaction cannot be "priced", except as a figure of speech. The reason that "labour" appears to have a price is that it forms value if properly expended. (In this case, and in this case alone, the service yielded by the consumption of labour-power is productive.) In other words, it stems from the confusion of the value product ($v + s$) for the value of labour-power (v).

Ricardo's labour theory of value was inconclusive because he could not determine the natural price of labour (meaning labour-power), which "depends on the price of the food, necessaries and conveniences required for the support of the labourer and his family" (David Ricardo, *On the Principles of Political Economy and Taxation*, London, 1953, p. 93), except by demand and supply. That is to say, the reason why "the price of labour" (v) is not equal to the value of commodities that

it produces ($v + s$) was explained, by Ricardo, as a consequence of the market condition of demand and supply. (See Karl Marx, *Theories of Surplus Value*, Part II, Moscow, 1968, p. 400.) The existence of surplus value cannot, of course, be grasped by such a haphazard method. For capital, however, the idea that it buys the value product ($v + s$) cheap from the workers and sells it dear to the purchasers is not irrational at all. It agrees perfectly with the merchant soul of capital which believes in "profit upon alienation". The misconception of "the price of labour" is further strengthened by the forms of the time-wage and the piece-wage.

* * *

If a worker works for 12 hours a day and receives \$3, it appears as though one hour of labour is paid \$0.25. It is, therefore, possible for the capitalist to pay such an hourly wage for overtime work or to irregular workers. In fact, the *time-wage* is nothing but the value of labour-power divided by the normal length of the working-day. This fact, however, is obscured because of the possibility of employing workers half-time or at irregular hours. Some workers may be employed by many firms at irregular times, but overall they work for 12 hours a day. That is merely an indication of the fact that labour-power has been perfected as a commodity and, hence, has become to some extent "divisible".

The institution of *piece-wages*, though practised early in the development of capitalism in domestic industry, is an even more drastic form of mystification of the price of labour-power. If a standard worker produces 12kg of cotton yarn per day and is paid \$3, then the wage paid for 1kg of cotton yarn is \$0.25. This form of wages strengthens the conception that the wage is paid for the useful work done, i.e. for the concrete result of labour. The completion of labour-power as a commodity enables capital to make use of it under a variety of contractual forms; and this fact paradoxically lends itself to the perpetuation of the false conception of "the price of labour".

This paradox, however, springs from the nature of capital itself which is a form of circulation. Although the circulatory operation of industrial capital is interrupted by the production-process, C ... P ... C′, it is in the nature of capital, which originates in M − C − M′, to ignore this interruption. In order for capital to return to the sphere of circulation and to view itself once again as a circulation-form, it is necessary to mystify the source of surplus value production. The "price of labour" gives capital such an opportunity. The completion of labour-power as a commodity enables it to be purchased by capital as any

other element of production in the market. Yet, even with this accomplishment, the exchange of labour-power for wage-goods still remains strange, unfamiliar and uncongenial to capital.

This strangeness is the last hurdle for capital to surmount before it can go back to the sphere of circulation. The confusion of labour and labour-power turns out to be just the right thing to make use of. For with this confusion capital now need not concern itself with labour-power as a special commodity. The form of industrial capital, which is

$$M - C < \begin{matrix} L_p \\ P_m \end{matrix} \ldots P \ldots C' - M',$$

can now be capitalist-subjectively interpreted as

$$M - P_m \quad \underline{\quad [K, L] \quad} \quad C' - M' < \begin{matrix} P_m \\ W + R, \end{matrix}$$

where [K, L] represents the cooperation of managerial and productive labour, and W and R are, respectively, the share of wages and the share of profit. The conception of capital as simply "capital goods" or means of production, P_m, and the idea of sharing the value added, $W + R$, between labour and capital on an equal footing are each rooted in the capitalist confusion of labour and labour-power.

5 The Circulation-Process of Capital

5.1 THE CIRCULAR MOTION OF CAPITAL

5.1.1 The Circuits of Capital

So far our enquiry has been focused on the production-process of capital, C ... P ... C'. That is to say, it has been focused, so to speak, on what capital does inside the factory. The production-process of industrial capital, however, occurs only as a passing phase in its whole circulation-process, so that what capital does inside the factory cannot be easily separated from what it does outside the factory. It is, therefore, necessary for us to study, at this point, the whole process of circulation of industrial capital, which contains within itself the production-process as a passing phase. The whole or total circulation-process of industrial capital,

$$M - C \ldots P \ldots C' - M',$$

consists of the three following phases: (1) M − C; (2) C ... P ... C'; (3) C' − M'. We now see how its circulatory phases (1) and (3) are grounded on its productive phase (2). Although (1) and (3), taken by themselves, are in simple circulation, they also constitute passing phases through which industrial capital travels in its entire circulation-process.

Industrial capital too must repeat its chrematistic operation *ad infinitum*. For that is always required of a genuine form of capital. However, in order to establish the self-repeating necessity of industrial capital and to determine it as a never-ending circular motion, we must investigate the three *circuits of capital*: the circuit of money-capital; the circuit of productive capital; and the circuit of commodity-capital. All these "circuits" are inherent in the motion of industrial capital. When industrial capital is in the form of money, we call it *money-capital*; when it is in the form of productive elements or of half-finished goods, we call it *productive capital*; and, when it is in the form of a commodity ready for sale, we call it *commodity-capital*.

The *circuit of money-capital*, M − C . . . P . . . C′ − M′ (or M → M′ in an abbreviated form), is identical in form to the circulation formula for industrial capital. When that formula was introduced for the first time into the Doctrine of Circulation (Part I), the production-process of capital was only anticipated. When, after a comprehensive study of the content of C . . . P . . . C′, we look at it again as the circuit of money-capital, the sequence of the three phases (1)–(2)–(3) implies more. Specifically, (1) is preparatory to, and (3) consequent upon, (2).

In the first phase (M − C), money simply functions as the means of purchase. The same function, however, constitutes part of the operation of industrial capital, since the commodities purchased here are elements of production including labour-power. The first phase (M − C) cannot be immediately followed by the third phase (C′ − M′) for no other reason than that C includes in it labour-power which, once purchased, cannot be resold. A production-process (C . . . P . . . C′) must intervene as the second phase, in which labour-power purchased as variable capital forms and augments value, while producing a saleable commodity (C′). The result of this phase is a value-object (C′) which can only be disposed of as a commodity. With the conversion of this commodity (C′) into money (M′) surplus value (m) becomes separable from the original advance of capital (M).

Although it thus takes into account the capitalist production-process, this particular circuit is still essentially *mercantilist* in that it is motivated by the individual desire of the capitalist to enrich himself. Because of its subjective character, it ends with M′, which is no longer money-capital but simply money, resulting exclusively from the sale of C′. In M′ the motion of capital is almost extinct. In order to repeat the circuit, the operation M′ · M, or the conversion of simple money (M′) into money-capital (M) must follow. That, in turn, must invoke a reassertion of the capitalist's subjectivity, i.e. his personal desire for self-enrichment.

Therefore, the capitalist begins this circuit with the subjective hope of making money. For him to complete it with the third phase (C′ − M′), however, it is necessary that someone else purchases his C′ with money. Unless this C′ consists of luxury goods (capitalists' consumption-goods), which is only a special case, its purchase implies another capitalist's purchase of productive elements (C). In other words, the third phase (C′ − M′) of one capitalist must generally presuppose another capitalist's first phase (M − C). No one can end this circuit without someone else beginning it.

Thus, the circuit of money-capital requires $M' \cdot M$, or the conversion of simple money into money-capital for its beginning, termination and repetition. This conversion is totally dependent on the subjective desire of the capitalist to enrich himself. Now, let it repeat itself only twice, and immediately we discover the other two circuits of capital ($P \rightarrow P$ and $C' \rightarrow C'$) operating side by side with it.

$$M - C \ldots P \ldots C' - M' \cdot M - C \ldots P \ldots C' - M'$$

* * *

The *circuit of productive capital*, written as $P \ldots C' - M' \cdot M - C \ldots P$ (or $P \rightarrow P$), rather than $C \ldots P \ldots C' - M' \cdot M - C$ (or $C \rightarrow C$), is unique in beginning and ending with a collection of use-values (P). These use-values, called "productive capital", represent the whole array of productive elements and half-finished products, and should be understood as an index of the scale of capitalist production in real terms. This circuit which considers the circulation of commodities ($C' - M' \cdot M - C$) as an interruption of capitalist activity represents the *classical* view of capital. The primary function of capital is here viewed as the accumulation of wealth in real terms. The circuit emphasises the periodic renewal of real capital (means of production) necessary for the reproduction of wealth.

In the first instance, all of P must be in the form of productive elements. However, as soon as the production-process begins, part of them will be transformed into half-finished products. As the production-process nears its end, the products will approach in their finished state more and more. If the production-process is regular, however, the factory at any moment of time should consist of productive elements and semi-finished products of various kinds and stages of completion in a definite proportion.

To begin a new production-process with P, however, the disposition of the surplus value which arose from the previous production-process must have been settled. Depending on whether P at the beginning is equal to or smaller than P at the end, the reproduction is defined to be either "simple" or "expanding". Since the reproduction of wealth is its primary concern, this circuit is meant to be repetitive; but its need for repetition is nature-imposed, rather than commodity-economic. In other

words, P → P repeats itself because wealth must continue to be produced. Thus, even in its circulatory phase, C′ − M′ · M − C, which this circuit considers as an interruption, money functions strictly as a medium of circulation, exactly as in a simple exchange of commodities, C′ − M − C.

Although the exchange of capitalistically produced commodities (C′) for the elements of production (C) is not quite as simple as the ordinary exchange of commodities (C′ − M − C), the classical faith in the pre-established harmony, supported by Say's Law and the Quantity Theory of Money, neglects the complexities of the situation, viewing the social process of commodity exchanges as a mere sum of individual exchange processes. Therefore, the capitalist who has produced C′ is supposed to be able to somehow transform it into C. In this *naïveté* over the vicissitudes of the market, the limitation of the circuit of productive capital is apparent.

For, even with its naturalistic view of life, the classical school still called for the accumulation of wealth, which, notwithstanding its naïve oversight, presupposes the conversion of monetised surplus value (m) into capital (monetised in the sense of *available in the form of money*). This conversion, however, cannot be accomplished without a formation of accumulation-funds in the process M′ · M. Accumulation-funds are money as a store of value, and not money as medium of circulation. Moreover, for accumulation-funds to be converted into capital, additional elements of production must already exist in the market. The present circuit cannot explain how this crucial condition is met. We must, therefore, search for another circuit of capital which may provide us with an answer.

* * *

The *circuit of commodity-capital* begins with C′ which already contains surplus value. The formation and augmentation of value is, therefore, a *fait accompli*. The fundamental difference between C and C′ must be clear. Although both are in the form of commodities, C which contains labour-power cannot remain in the circulation-sphere, whereas C′ which does not contain labour-power must immediately enter that sphere. Taken by itself, C′ − M′ is in simple circulation, of course. But the fact that C′ is a capitalistically produced commodity affirms itself in the inseparability of C′ − M′ from the subsequent M − C, which must immediately follow. That makes the present circuit a very special one.

In the circuit of money-capital (M → M′), the sequence of sale and purchase (C′ − M′ · M − C), which involves the exchange of C′ for

C, depended on the capitalist's will to enrich himself. In the circuit of productive capital (P → P), the same sequence was viewed as imposed by the natural necessity of reproduction. In the present circuit (C′ → C′), this same sequence is compelled by the need to ensure a further supply of C′. It is inherent in the operation of capital itself that the proceeds of its commodity products should be ploughed back into that which is required for further commodity production.

This circuit considers the production-process as merely an instrument of value formation and augmentation. Its output C′ has, therefore, been produced indifferently to use-values. It has not been produced for the capitalist's individual consumption, nor merely as a means of enriching him individually. Commodity-capital (C′) is the form that implies an on-going process of value formation and augmentation. Since it has been capitalistically produced, C′ cannot be disposed of otherwise than as a form of capital. A capital-form can be transformed only into another capital-form, so as to ensure the continuing motion of capital. In other words, C′ is sold only on condition that its proceeds should be ploughed back into the instrument, C, which produces C′ once again.

Thus, the circulatory phase, C′ − M′ · M − C, of the present circuit makes commodity exchanges, C′ − M − C, an on-going process. The conversion of C′ into C which guarantees the continuing motion of industrial capital takes place, however, only in a social context. The C′ − M′ of one capital is, by necessity, interwoven with the M − C of another capital. In other words, when society sells its commodity products in C′ − M′, the same society has already bought elements of production in M − C.

Earlier with regard to the circuit of money-capital, it was shown that one capitalist could complete his process of self-enrichment with C′ − M′, only if another capitalist started a similar process with M − C. The dependence of the one on the other, however, was only accidental and not necessary in that case. The circuit of money-capital, in other words, was dependent on the universal presence of the desire for self-enrichment, which by itself is no more than a subjective contingency. In the present context, the situation is quite different. The social inter-connection of all capitalistically produced commodities, C′, is inherent in the concept, and is not a matter of contingency. The exact structure of this inter-connection will be elaborated upon later by the theory of reproduction-schemes, which is based on the circuit of commodity-capital.

Since Quesnay's *tableaux économiques*, all circular flow models of the capitalist economy are based on this circuit. For only this circuit brings out the social inter-connection of all commodities, as well as the commodity-economic need to keep the circular motion of capital flowing.

A circular flow model divides the economy into several sectors and shows how products (goods) and elements of production (or services thereof) flow from one sector to another. The inter-sectoral exchanges of goods and services constitute a circular flow model. Quesnay's *tableaux*, Marx's reproduction-schemes, Keynes' national accounts identities, and Leontief's transaction matrices are representative examples of circular flow models.

5.1.2 The Balance-Sheet Structure of Capital

Each of the three circuits of capital offers a particular way in which the motion of capital may be interpreted. The continuing motion of industrial capital, however, consists of the triplex of all these circuits, and cannot be reduced to any one of them in particular. That is immediately apparent from the fact that every capitalist enterprise holds its capital in the three forms of money, the commodity and functioning productive elements (including semi-finished products) at all times. Even spatially, the capitalist firm is divided into its factory, sales office (warehouse) and purchasing department. To the factory supervisor, capital appears to consist primarily of productive elements. To the sales (warehouse) manager, the stock of the saleable commodity most readily represents capital. To the manager of the cashier's office, capital is above all money. These conceptions of capital are all true; yet each of them is also one-sided.

Capital in the form of money or commodities, i.e. money-capital and commodity-capital, are grouped together as *circulation-capital* in contrast to *productive capital*, which should include functioning productive elements and half-finished products not yet ready for sale. At any point in time, industrial capital in its motion consists of both circulation-capital and productive capital, the proportion between the two being dependent on the lengths of time required, respectively, for circulation and production. The turnover-time of capital is thus divided into its *production-period* and *circulation-period*, and the latter is further divided into the *selling-period* and the *buying-period*.

Thus, for the sake of illustration, let us suppose that the capitalist invests a sum of money, M, at the beginning of the first week (which is the name we give to an arbitrary market-period) to buy the elements of production of the same value, C_1. The latter is (productively) consumed during the second and the third week as C_2 and C_3 in the production-process, until it emerges as the finished product, C'_4, at the beginning of the fourth week. Let us further suppose that this product, C'_4, remains in the warehouse, i.e. in the form of an inventory, at the beginning of the fifth week as C'_5, and is sold for money, M'_6, only at

Table 5.1

week:	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
1st portion	C_1	C_2	C_3	C'_4	C'_5	M'_6						
2nd portion		C_1	C_2	C_3	C'_4	C'_5	M'_6					
3rd portion			C_1	C_2	C_3	C'_4	C'_5	M'_6				
4th portion				C_1	C_2	C_3	C'_4	C'_5	M'_6			
5th portion					C_1	C_2	C_3	C'_4	C'_5	M'_6		
6th portion						C_1	C_2	C_3	C'_4	C'_5	M'_6	
1st portion	(again)						C_1	C_2	C_3	C'_4	C'_5	M'_6

Table 5.2

Money-capital $M'_6 = M'$	140	Capital advanced $M'_6 + C'_5 + C'_4 + C_3 + C_2 + C_1 - 3m = 6M$	720
Commodity-capital $C'_4 + C'_5 = 2C'$	280		
Productive-capital $C_1 + C_2 + C_3 = 3C$	360	Net worth $(M'_6 + C'_5 + C'_4) - (C_3 + C_2 + C_1) = 3m$	60
	780		780

the beginning of the sixth week. This money, M'_6, let us continue to suppose, cannot be immediately re-invested, and must purchase the elements of production only at the beginning of the seventh week as $M = C_1$. Thereafter, the same process, we assume, will be repeated.

If the capitalist wants to avoid any interruption of his production, he should divide the total of his capital into six equal portions and should keep investing each portion at the beginning of every week, as illustrated in Table 5.1. If technical conditions permit such a cycle, and if no expansion (or contraction) of business occurs, the structure of capital will stabilise to (M'_6, C'_5, C'_4, C_3, C_2, C_1), and will remain constant after the sixth week.

This structure can be translated into the above balance-sheet (Table 5.2) under some "heroic" assumptions. In particular, the value of labour-power which should disappear during the production-process shall remain in C_1, C_2, C_3 as "wage-funds". The second assumption has to do with the accrual of surplus value. It is hard to determine at exactly which point during the production-period the surplus value actually emerges. Since the balance-sheet is merely a conventional device,

however, we shall simply assume that $C' = M'$ is greater than $C = M$ by the amount of surplus value, m. In other words, all of surplus value, m, which is produced during the first, second and third week, is deemed to accrue suddenly at the beginning of the fourth week.

In that case, if we assume $M = 120$ and $M' = 140$, we should be able to record the stabilised capital structure as in Table 5.2. The proportion in which total capital advanced $6M = 720$ is divided into the productive capital of $3C = 360$ and the circulation-capital of $M' + 2C' = 420$ reflects, apart from the surplus value ($3m = 60$) already included, the relative lengths of the production-period and the circulation-period. They are both three weeks in the present example.

* * *

The structure of productive capital can be made a little more specific, if that is desired. Let $W = \frac{1}{2} C$ stand for the wage-fund, and $R = \frac{1}{2} C$ for the price of raw materials, and assume that labour-power and raw materials are the only elements of production. Suppose that w_1, w_2, w_3 ($w_i = \frac{1}{3} C$) are paid to the workers at the end of each week, as the capitalist appropriates the newly formed values, v_1, v_2, v_3, in the form of partially finished product. Suppose also that r_1, r_2, r_3 ($r_i = \frac{1}{3} R$) invested at the beginning of each week are converted into t_1, t_2, t_3 or values transferred to the product in the process of being finished, at the end of each week. Then the situation at the beginning of each of the first four weeks can be written as follows:

$$
\begin{aligned}
C_1 &= r_1 + r_2 + r_3 + w_1 + w_2 + w_3, \\
C_2 &= t_1 + r_2 + r_3 + v_1 + w_2 + w_3, \\
C_3 &= t_1 + t_2 + r_3 + v_1 + v_2 + w_3, \\
C_4' &= t_1 + t_2 + t_3 + v_1 + v_2 + v_3.
\end{aligned}
$$

In this light, $3C = C_1 + C_2 + C_3$ in Table 5.2 can be stated in more detail as:

raw materials	$2R\ (= r_1 + 2r_2 + 3r_3)$
wage-fund	$2W\ (= w_1 + 2w_2 + 3w_3)$,
unfinished product	$T + V\ (= 2t_1 + t_2 + 2v_1 + v_2)$.

Suppose that $R = 60$ and $W = 60$. Then it is possible to expand the above balance-sheet (Table 5.2) into a more elaborate one (Table 5.3). Although it is still quite abstract, this new balance-sheet appears rather similar to the practical one which every capitalist is familiar with. In

Table 5.3

Cash available (M')	=	140	Capital advanced ($6M$)	=	720
Commodity in stock (C')	=	280			
Raw materials ($2R$)	=	120			
Wage-funds ($2W$)	=	120	Net worth ($3m$)	=	60
Unfinished goods ($T + V$)	=	120			
		780			780

other words, the balance-sheet is nothing other than the motion of industrial capital as it appears in the mind of the capitalist.

* * *

Whereas capital in the process of production is actively engaged in the formation and augmentation of value, capital that stays outside this process as "circulation-capital" creates no value, undergoing only a formal "metamorphosis" or change of form. Yet it is not possible to regard only productive capital, or for that matter only circulation-capital, as an adequate representation of the whole of capital. Capital is never merely money, commodities, semi-finished products, means of production or wage-funds. It is all of them simultaneously, i.e. a synthesis or organic unity of them all.

Maximising the proportion of productive capital to "unproductive" circulation-capital is, of course, advantageous to the formation and augmentation of value. This effort, however, is constrained by the fact that the circulation of commodities too requires time. If this constraint is ignored, and not enough circulation-capital is maintained, the stoppage of production or even outright insolvency may ensue. Generally speaking, the length of the production-period is determined by technical factors, and the length of the circulation-period depends on other factors as well. In any case, the longer the time required either for circulation or for production, the more capital must be tied up at any given moment of time.

Every capitalist knows that he cannot put all of his capital in the production-sphere alone, and expresses it in such terms as liquidity preference, risk aversion, etc. What he does not always realise, however, is that the balance-sheet (or portfolio) structure of capital stems from the necessity of capital to spend time in all the phases of its circulation and production.

Suppose that the circulation-period in the above example is shortened from three to two weeks because C'_4 needs to be stocked for only one week before it is sold for M'_5. If the same quantity of capital 720

Table 5.4

M'	= 168	$5M$	= 720	M'	= 168	$5M$	= 720
C'	= 168			$2C'$	= 336		
$3C$	= 432	$2m$	= 48	$2C$	= 288	$3m$	= 72
	768		768		792		792

is divided into five equal instalments of 144, and invested in each week, the structure of capital (M'_5, C'_4, C_3, C_2, C_1) will become stationary after the fifth week. If $W = 144/2 = 72$ produces the surplus value of 24 per week at the same rate of 33.333 per cent (= 20/60) as before, the balance-sheet in that case will be as in the left-hand panel of Table 5.4.

The same magnitude of capital 720 produces the surplus value of 20 per week, if the circulation-period is three rather than two weeks as in the previous example. Therefore, it can be said that the "cost" of the extension of the circulation-period by one week is $24 - 20 = 4$ in terms of surplus value forgone. This kind of cost we shall call the *ordinary cost of circulation*. Since the circulation-period is never zero, every industrial capitalist must ordinarily bear this type of cost in proportion to the length of that period. The ordinary cost of circulation, in other words, is the difference between surplus value which could have been earned in the absence of the circulation-period and surplus value actually earned in its presence.

The same thing, however, can be said of the shortening or lengthening of the production-period as well. Suppose that the production-period is two weeks and the circulation-period three weeks, when the capital of 720 is advanced. Then after the fifth week the structure of capital becomes stationary as (M'_5, C'_4, C'_3, C_2, C_1), with the weekly investment of 144. In that case too, let $W = 72$ produce the surplus value of 24 per week at the assumed rate of 33.333 per cent. The balance-sheet will then be as in the right-hand panel of Table 5.4.

In the light of the previous example, it can be said that the cost of extending the production-period from two to three weeks is also the surplus value forgone of $24 - 20 = 4$. This kind of cost may be called the *time-cost of production*, which is quite separate from the labour and non-labour cost of the weekly output. The latter cost is either $W + R = 120$, if $C' = 140$ takes three weeks to produce, or $W + R = 144$ if $C' = 168$ takes only two weeks to produce. In both cases, it is about 85.7 per cent (or 6/7) of the value of the output.

5.1.3 Pure Circulation-Costs

Quite apart from the ordinary circulation-cost, as defined above, there are also pure circulation-costs that capital must bear in its phase of circulation. Even the purely circulatory operation of buying and selling commodities costs capital human and non-human resources. For example, shops must be maintained, correspondence must be exchanged, books must be kept, etc. All these activities give rise to pure circulation-costs, which are "unproductive" expenses, or *faux frais* of production.

The capitalist must defray these pure circulation-costs from out of surplus value already earned. Thus, if the circulation-period is only two weeks instead of three, the capitalist may earn the surplus profit of 24 instead of 20. However, his pure circulation-costs per week may add up to 4 value units, reducing surplus value available to him to only 20. Although pure circulation-costs do not necessarily increase in proportion to the length of the circulation-period, a skilful trader will economise on pure circulation-costs while reducing the length of the selling and buying periods, thus also saving his ordinary circulation-cost as far as he can. A not-so-skilful capitalist, whose circulation-period is three weeks instead of two, may lose more than 4 value units in pure circulation-costs, and may have to deduct them out of the surplus value which has been already diminished from 24 to 20 for taking a longer time in circulation.

In order to understand the nature of pure circulation-costs, it is necessary to recall that *commercial labour* does not form or augment any value, nor does it transfer the value of constant capital to the product. That does not mean that commercial workers are not "exploited" in the usual sense of the term. The "exploitation" of commercial workers, however, does not change the value relation already forged in the production-process of capital. Commercial labour is different from productive labour, since it involves no transformation of any part of nature into material use-values. Neither can it form or augment value. The distinction between productive and unproductive labour is crucial to the understanding of the law of value, though it has not always been firmly grasped. Even Marx himself left some misleading hints from time to time.

Productive labour is labour that produces a use-value. (It implies a direct or indirect involvement of nature in human work.) Any labour which does not directly or indirectly involve the physical transformation of a natural object is unproductive by definition. Productive labour also produces value and surplus value because, under capitalism,

no use-value can be produced except as value containing surplus value. Indeed, productive labour alone can produce value and surplus value under capitalism because it produces a use-value. Therefore, labour which does not form value or produce surplus value is unproductive, and vice versa. It does not follow from this, however, that labour that is "profitably" employed is always productive, i.e. productive of value and surplus value. Capitalists employ commercial labour because it is "profitable" to do so. That does not make commercial labour, which specialises in buying and selling commodities, productive.

The production of use-values, unlike the circulation of commodities, is supra- or trans-historic. So is productive labour, unlike commercial labour. No society can exist without its members purposively organising themselves to work on nature. However, there are many societies in which economic life is not governed by commercial, or commodity-economic, principles. Labour which is required specifically for the functioning of the commodity-economy, such as the buying and selling of commodities, is neither trans-historic nor productive.

* * *

I have already classified unproductive labour into three broad categories:(i) business-administrative, (ii) public-administrative, and (iii) personal service labour. Of these, only the first category is of any significance in a purely capitalist society, and it is the one that will now be investigated. We will refer to it by its traditional title as commercial labour. It is essentially the capitalist's own labour. Indeed, if the enterprise is small, the capitalist and his family members will be able to perform these managerial, administrative and supervisory duties quite adequately themselves.

Only when the size of the business expands beyond a certain limit does it become necessary for the capitalist to hire salespersons, accountants, engineers and consultants, i.e. "commercial workers" in the broad sense, to assist him. They are employed to perform extensions of the capitalist's own labour, which may be highly specialised. If they are "commissioned" salespersons, this point is particularly clear. For what they are paid is clearly not the value of their labour-power. Their labour appears to be quite different from that of wage-workers. However, even if they are "salaried" and receive wages in proportion to the reproduction-cost of their labour-power, no change has occurred in the nature of their labour. It is still different from that of industrial wage-workers.

"Commercial labour" in the broad sense may even include engineers or technical advisors. For they too equip the capitalist with technical knowledge which, if simple enough, the capitalist himself would have provided. Indeed, many engineering firms are started originally by an entrepreneurial engineer as a venture business, and employ a large technical staff only as they grow.

In capitalist society as in other societies, unproductive labour is often necessary, and indispensable, in order to make productive labour more productive. For example, before a house is built, the architect draws up a plan. Since human beings do not work instinctively, building labour cannot be properly performed without a prior plan. That fact, however, does not make the architect's labour productive. For it is not expended directly or indirectly on nature to transform part of it into a use-value. In capitalist society, no productive labour can be exercised without the capitalist's "instructions". It goes without saying that, by merely giving "instructions", the capitalist does not become a productive worker or direct producer.

Just as the capitalist himself is supported by surplus value, so are unproductive workers of all sorts. In this sense it is possible to say, with Adam Smith, that unproductive workers are supported by surplus value, and productive workers by variable capital (see Karl Marx, *Theories of Surplus Value* (Progress, Moscow, n.d.), pt I, p.168). However, to extend this distinction to the general claim that labour purchased by revenue is unproductive and that labour purchased by capital is productive would be misleading. As will be seen later (in Volume 2, Chapter 9), commercial capital transforms pure circulation-costs into capital, so that commercial labour too will be paid out of the advance of commercial capital. The latter earns an average profit even though it produces no surplus value. It only partakes of, or shares in, surplus value already produced. Hence, commercial labour is not productive. The narrower interpretation of Adam Smith's distinction (before its unwarranted extension) is correct simply because the definitions of variable capital and surplus value already presuppose the definition of productive (as opposed to unproductive) labour.

* * *

The distinction between productive and unproductive labour is theoretically fundamental. It, however, does not ensure that any kind of empirically observable labour can be classified without ambiguity into either one of the two categories. Often the same labour becomes productive or unproductive, depending on the context in which it appears.

In particular, the *storage* and *transportation* of goods are sometimes viewed as productive activities and sometimes otherwise.

One may broadly say that the storage and transportation that exist in all societies, whether capitalist or not, are para-productive activities. In order to deliver use-values at a particular time and place, these activities are necessary in any society. Even within a factory, goods are routinely moved and stored. Not all raw materials and fuels can be used immediately and in the place where they are produced. They must be transported to a specific site to be processed, and, in some cases, must await the right season before being processed. Even finished goods cannot always be handed over directly to the consumers at the place of their production, or instantly after their production. Therefore, storage and transportation are closely allied to the production of use-values as such, and cannot be easily separated from it.

In capitalist societies, however, goods are not always moved or stored in order to deliver use-values at the right place and time. They are often moved and stored for speculative reasons. The storage and transportation of goods which are motivated solely by the quest for commodity-economic gains cannot be said to be common to all societies, nor are they essentially derivative of use-value production. Such commodity-economically motivated storage and transportation are unproductive activities, and the labour involved in them must also be judged unproductive.

5.2 THE TURNOVER OF CAPITAL

5.2.1 The Efficiency of Value Augmentation

Now that the general structure and characteristics of the circulation-process of capital have been studied, the next step is to consider its relation with the behaviour principle of capital. Capital, of course, maximises the efficiency of value augmentation or, what comes to the same thing, minimises the cost of value augmentation. We shall see in what follows how this principle manifests itself in the circular motion of industrial capital.

Capital produces value; but value which is not realised in its external form of money cannot be said to have been produced. The production and realisation of value are, therefore, one and the same thing, and cannot be separated. In other words, the production of value (rather than of use-values) cannot be completed in the production-process of

capital alone. In that process, a use-value that is meant to embody value is created. But it is in circulation that value is "measured" and the commodity confirmed as a value-object. That is to say, not until the commodity is sold for money is its value either realised or produced. The production of the commodity as value is thus quite a different matter from its production as a use-value.

It is widely believed that value is first created (produced) in the production-process, C . . . P . . . C′, and then it is "realised" in the selling-process, C′ – M′, which follows, whence comes the questionable theory of "realisation crises". Marx too frequently makes statements that would appear to endorse such a view, which, I believe, is quite misleading. I cannot reasonably interpret the idea of "a value that is produced but not realised". That would be like referring to the application of productive labour (use of productive resources) which society first approves of (or validates) and then disapproves of (or repudiates). How can anyone claim, in the first instance, that this commodity is produced as part of an optimum allocation of society's resources, and, in the second instance, that it is not so, without explaining what happened in between? Clearly, that would defy the law of contradiction (of formal logic).

The source of confusion, it seems to me, comes from the fact that the dialectic studies the production-process of capital first, while holding the circulation-process implicit. This latter qualifying phrase, the dialectical significance of which is often poorly understood, means that value and surplus value are produced in the production process, provided that the circulation-process is unproblematic, i.e. provided that their realisation is automatic. Therefore, if later, by the "explicitation" of the circulation-process, it is found that the realisation of value does not occur as expected, then we have to withdraw the original claim that the value was produced. That would not offend the law of contradiction that two incompatible facts cannot both occur, or be true, at the same time.

For capital, therefore, circulation is just as important and essential as production. Capital cannot waste time and money in circulation any more than it can in production. If too much must be deducted from surplus value as circulation-costs, the production of commodities may become a futile proposition for capital.

The turnover-time of capital, which consists of the production-period and the circulation-period, is defined by Marx as "the period from the moment of the advance of capital value in a definite form to the return of the functioning capital value in the same form" (*Capital*, II, p. 156). Since capital can be advanced only in the form of money, M, or in the form of productive elements, P, the turnover-time must be studied from the point of view either of the circuit of money-capital or of the circuit of productive capital. It cannot be studied in light of the circuit of commodity-capital. Strictly speaking, however, P is in use-values and

Table 5.5

$M' = 140$	$6M = 720$
$2C' = 280$	
$3C = 360$	$3m = 60$
780	780

cannot represent the advance of "capital value". Therefore, it may be appropriate, in this case, to move back from P to C, and let the latter represent the advance of capital value in whatever form. In other words, it may be appropriate to look at the turnover-time as the length of time from C to C, i.e. from the advance of capital in productive elements to the next similar advance.

It then consists of the production-period, C . . . . P . . . . C', and the circulation-period, C' – M' · M – C. That is to say, the turnover-time of capital, C . . . . P . . . . C'– M' · M – C, is equal to its production-period *plus* its circulation-period.

* * *

The efficiency of the operation of capital can best be measured by the flow-to-stock ratio of surplus value realisable per week (or any other specified period of time) to total capital advanced. Let us return to our balance-sheet but assume, this time, that the size of the plant is such that the weekly investment of capital $M = 120$ (with $W = 60$ and $R = 60$) cannot be changed regardless of the length of the turnover-time. Assume also that the rate of surplus value is always $e = m/W = 33.333$ per cent (and hence $m = 20$ when $W = 60$). If the turnover-time is six weeks, of which three weeks are the production-period and the remaining three the circulation-period, the balance-sheet will be as in Table 5.5. The efficiency of value augmentation in this case is calculated as $m/6M = 2.8$ per cent.

If the turnover-period of six weeks is reduced by one week to five weeks, we have the situation as in Table 5.6, depending on whether the reduction has occurred in the circulation-period or in the production-period. The efficiency of value augmentation is the same, and is $m/5M = 20/600 = 3.333$ per cent, in both cases.

If the turnover-time is extended by one week, the balance-sheet will change to the ones shown in Table 5.7, depending again on whether the circulation-period is extended or the production-period is. Again

Table 5.6

$M' = 140$	$5M = 600$	$M' = 140$	$5M = 600$
$C' = 140$		$2C' = 280$	
$3C = 360$	$2m = 40$	$2C = 240$	$3m = 60$
640	640	660	660

Table 5.7

$M' = 140$	$7M = 840$	$M' = 140$	$7M = 840$
$3C' = 420$		$2C' = 280$	
$3C = 360$	$4m = 80$	$4C = 480$	$3m = 60$
920	920	900	90

Table 5.8

$M' = 140$	$6M = 720$	$M' = 140$	$6M = 720$
$C' = 140$		$3C' = 420$	
$4C = 480$	$2m = 40$	$2C = 240$	$4m = 80$
760	760	800	800

the efficiency of value augmentation is the same, and is $m/7M = 20/840 = 2.4$ per cent, in both cases.

From these examples, it is quite clear that the shortening of the turnover-time raises the efficiency of value augmentation of capital, and the lengthening of the turnover-time lowers it, regardless of whether the circulation-period is affected or the production-period is. It can also be confirmed that the efficiency of value augmentation remains unchanged, if the proportion of the circulation-period and the production-period changes while the turnover-time itself remains the same. For example, the efficiency of value augmentation is $m/6M = 2.8$ per cent, if the turnover-time of six weeks is divided two to four or four to two into, respectively, the circulation-period and the production-period, provided that the rate of surplus value m/W is always 33.333 per cent. The two cases are illustrated in Table 5.8.

Table 5.9

$2C'$	=	227	$6M$	=	600
M'	=	113			
$3M$	=	300			
$T + \frac{2}{3}V$	=	100			
$\frac{4}{3}W$	=	80	$3m$	=	40
$2R$	=	120			
		640			640

* * *

If, however, the labour-process is interrupted during the production-period, it has an effect similar to the extension of the circulation-period. The production-period consists of the *working period* in which the expenditure of productive labour takes place, and the *non-working period* in which it is temporarily suspended. An interruption of the labour-process is frequent in agriculture (including farming, forestry, fishing, etc.) for natural reasons. Even in manufacturing the labour-process is sometimes interrupted for technical reasons (e.g. the fermentation of wine, the drying of paint, etc.).

The effect of that kind of interruption may be illustrated as follows. In the previous example, let the second week be the non-working period so that $w_2 = v_2 = 0$. In that case, since variable capital worth 20 is not necessary, $M = 100$ may be invested for each of the six weeks in $R (= r_1 + r_2 + r_3) = 60$ and $W (= w_1 + w_3) = 40$. The balance-sheet will then be as in Table 5.9. Here, the rate of surplus value and the efficiency of value augmentation are respectively: $m/W = 33.333\%$ and $m/6M = 2.2$ per cent.

The capitalist is solely interested in raising the efficiency of value augmentation, and this is defined by the formula

$$\varepsilon = \frac{m}{tM}$$

where t is the length of the turnover-time. Hence, if m is given, tM must be as small as possible. With a given M, the same is accomplished

by the shortening of the turnover-time. If T^* is the number of weeks in a given year, then $n = T^*/t$ is called the annual frequency of the turnover of capital. To raise n is, therefore, to increase the efficiency of value augmentation, other things being equal.

5.2.2 The Turnover of Constant Capital

The question of the turnover of capital must be studied, not only from the M-side of C, i.e. from the point of view of money-capital, but also from the P-side of C, i.e. from the point of view of productive capital. That is to say, allowance must be made for the use-value character of the productive elements purchased as $C = \{P_m, L_p\}$. We shall, therefore, examine the turnover of constant capital, i.e. the relationship between the turnover of capital and the means of production (P_m) first, before considering the turnover of variable capital, i.e. the relationship between the turnover of capital and labour-power (L_p) subsequently.

Means of production as part of productive capital are classified into *fixed capital* and *circulating capital*, depending on whether their value is transferred to the product all at once in one production-period, or piecemeal over several. For example, raw materials are entirely consumed in one production-period, but tools and machines are used over many production-periods. The difference arises strictly because of the mode of transfer of value, so that the classification does not apply to items of unproductive circulation-capital or pure circulation-costs.

Neither has the distinction anything to do with the physical durability of the means of production, or with the time required to produce them. Thus, what is generally considered to be either "long-lasting (durable)" or "heavy" does not always belong to the category of fixed capital. For example, gold is a very durable substance, but when used as raw material for gold products, it is circulating, and not fixed, capital. Nor is an engine as part of a motor vehicle fixed, but circulating, capital. Cattle in farming or milking are fixed capital, but the same cattle for meat production are circulating capital. When the cattle are sold as commodities they are commodity-capital, and not productive capital, and, hence, neither fixed nor circulating. Supplementary (or auxiliary) materials are often circulating capital, but not always. For example, the dye used to colour cloth is circulating capital, but the electric devices to light the factory are not. Repair and maintenance costs of the plant can be "circulating", if regularly incurred. Yet unpredictable breakdowns must be covered by insurance; and the cost of insurance is part of circulation-costs.

* * *

The magnitude of circulating capital which must be advanced and tied up is directly proportional to the length of its turnover-time. If $R = \$1{,}000$ is the weekly investment of circulating capital, and if the turnover-time of capital is $t = 10$ weeks, then $tR = \$10{,}000$ must be advanced at all times. If it is reduced to $t = 9$ weeks, only $tR = \$9{,}000$ needs to be tied up.

The turnover of fixed capital is more complicated. If a machine lasts for five years, and if $t = 10$, $T^* = 50$ (the number of weeks in a year), then it is completely used up in 25 production-periods over 250 weeks. Although the first $^1/_{25}$ of its value is recovered in the form of money in ten weeks (assuming the straight-line method of depreciation), that money only forms part of the depreciation-fund and cannot be used to purchase a new machine. The period of time between the first purchase of the machine and the repurchase of a similar machine is five years, which must be the turnover-time of the machine. Thus, the turnover of fixed capital such as a machine is equal to its durability (i.e. the life of the machine). Fixed capital consists normally of many parts with different durabilities.

We cannot ignore the fact that many parts of fixed capital have different turnover-times of their own, and they may not be easily averaged out to a single turnover-time at the level of the firm. This complexity, however, does not affect the efficiency of value augmentation of the firm because the value of capital advanced is, in any case, $tM + F$, where F is the initial value of fixed capital. The efficiency of value augmentation is, therefore, always

$$\varepsilon = \frac{m}{tM + F}, \quad F \geqq 0,$$

regardless of the turnover-time of fixed capital. The reason is that the value of F is always tied up in one of the following three forms: the unconsumed value of the fixed capital (H); part of its value having already been transferred to the (finished) product, but not yet recovered in the money form ($t_s f$); and part of its value having been already recovered in the money form and presently held in depreciation (or sinking) funds (D).

* * *

The balance-sheet now becomes cyclical, even if the firm undertakes no accumulation, since the depreciation-fund (D) increases and the

Table 5.10

$t_b(M + m)$	tM	$t_b(M + m)$	$tM + F$
$t_s(M + m)$		$t_s(M + f + m)$	
t_pM	t_cm	$t_pM + H + D$	t_cm
$t_pM + t_c(M + m)$	$tM + t_cm$	$t_pM + t_c(M + m) + t_sf + H + D$	$tM + t_cm + F$

unconsumed value of fixed capital (H) decreases, as its renewal time approaches. Two balance-sheets are shown in Table 5-10. The one involving no fixed capital is on the left side, and the other involving it is on the right side. Here, the turnover-time (t) is divided into the production-period (t_p) and the circulation-period (t_c). The latter is further divided into the buying-time (t_b) and the selling-time (t_s).

For items of shorter durability smaller cycles occur, which are superimposed on larger cycles generated by items of longer durability. Some of these cycles are cancelled, when the balance-sheets of many firms are consolidated over diverse branches of industry. Investments in heavy machinery and plants, however, tend to occur more or less at the same time, i.e. towards the end of the depression phase of business cycles. Therefore, the turnover-cycle of durable equipment tends to shape the periodicity of economic crises.

Money held in depreciation-funds cannot be used for current investment and remains idle. As will be explained later (in Volume 2, Chapter 9), however, such idle money can be floated as loanable funds in money markets to earn interest. Depreciation-funds are but one of the forms of idle money that can be converted "capitalist-socially" into money-capital by the mediation of credit.

5.2.3 The Turnover of Variable Capital

In the determination of the magnitude of total capital advanced, and hence of the efficiency of value augmentation, the turnover-times of different items of fixed capital are irrelevant. Only the turnover-time of circulating capital, t, matters, once M, F, and m are given. Where does this privileged status of circulating capital come from? It comes from the fact that the turnover-time of circulating constant capital agrees with the turnover-time of variable capital. In order to transform the weekly efficiency of value augmentation, ε, into the annual efficiency,

εT^*, we only have to know the number of weeks in one year T^*. The annual efficiency then is the following:

$$\varepsilon T^* = \frac{mT^*}{tW} / \left(1 + \frac{tR + F}{tW}\right),$$

since $tM = t(W + R)$. Let $e = m/W$ be the rate of surplus value, $n = T^*/t$ the annual frequency of the turnover of capital, and $k = (tR + F)/tW$ the value composition of capital. Then the above can also be written as

$$\varepsilon T^* = \frac{en}{1 + k},$$

If the value composition of capital k is taken to be a parameter, the annual efficiency of value augmentation (εT^*) depends only on what Marx calls the *annual rate of surplus value* (en).

Suppose that someone invests \$1,000 every week in variable capital (W) and the turnover-time (t) is 10 weeks. Then the variable capital of tW = \$10,000 must always be advanced. If $T^* = 50$, $e = 50$ per cent, and if constant capital is neglected ($R = F = 0$), then $\varepsilon T^* = en = 250$ per cent, since $n = 5$. Suppose that another capitalist also invests \$1,000 every week for 20 weeks. Then, under the same conditions, his efficiency is $\varepsilon T^* = en = 125$ per cent, since $n = 2.5$. He must advance tW = \$20,000 at all times. Thus, even if the two capitalists employ and exploit the same number of workers for the same length of time with the same rate of surplus value, and even if constant capital is altogether neglected, the annual efficiency of value augmentation can be quite different. The difference, of course, comes from the annual frequency of turnover, which can also be defined as

$$n = \frac{WT^*}{tW} = \frac{\text{employed variable capital per year}}{\text{advanced variable capital}}.$$

The rate of surplus value (e) is a fundamental ratio that expresses the worker-versus-capitalist production-relation. So far it has been argued that the capitalist automatically seeks to raise this ratio. How is that possible, if, in fact, he does not know such a ratio? It may legitimately be claimed that the capitalist's behaviour cannot be dictated by such a non-operational concept, of which he cannot possibly be cognisant. It turns out, however, that the capitalist need not know such

things as the rate of surplus value to operate "rationally". For his effort to raise the efficiency of value augmentation, which will be found later (in Volume 2, Chapter 7) to be equal to the rate of profit, automatically raises the annual rate of surplus value, if the value composition of capital is given. Furthermore, if the annual frequency of turnover is already as great as possible, this amounts to raising the rate of surplus value. Therefore, there is a very good reason for claiming that the capitalist always behaves as if he is consciously pursuing the highest rate of surplus value.

* * *

The turnover-time of capital is fundamentally determined by the turnover-time of variable capital. Yet variable capital does not turn over in the same way as constant capital. The latter was classifiable into fixed and circulating capital, according to the manner in which the existing value of the means of production was transferred to the product. Variable capital, in contrast, does not transfer its value to the product at all, and hence cannot, strictly speaking, be classified as circulating capital. The value of the means of production is preserved during the production-process. Suppose, for example, that \$100's worth of raw cotton is purchased as part of $C = \{P_m, L_p\}$ in the formula for industrial capital, and then converted into a product, C′, say, cotton yarn, of a value of \$100, which, in turn is sold for money, M′, of the same sum. When this money is spent to buy \$100's worth of raw cotton again as part of C, the value of circulating constant capital has turned over once.

However, if labour-power L_p of \$100 is purchased today, it immediately loses its value. It retains no value to transfer to the product. The corresponding \$100 in cotton yarn are newly produced value. If the proceeds of \$100 from the sale of cotton yarn is re-invested in the purchase of additional labour-power valued at \$100, the latter value is not the same as the value of the labour-power already consumed. The vanishing of the latter is the pre-condition of the formation of equivalent value to replace it. It is, therefore, quite different from the turnover of the value of circulating constant capital. The two cases are schematically compared as follows.

$$P_m \rightarrow C' \rightarrow M' \rightarrow P_m$$
$$L_p \rightarrow C' \rightarrow M' \rightarrow L_p$$

The turnover-time of variable capital can be interpreted to be the time needed for the self-renewal of capital. If I buy L_p = \$100 (say,

from **A**) today, this value immediately disappears from my possession. As a capitalist, I have to reproduce that lost value in a new commodity, sell it for money, and use that money for the purchase of another L_p = \$100 (say, from **B**). The time required between these two purchases of different L_p = \$100 (first from **A** and then from **B**) is the turnover-time of variable capital. This time-period defines the life-cycle, *t*, of capital which happens to be the same as the turnover-time of circulating constant capital.

* * *

Whether this time, *t*, is long or short does not merely concern the efficiency of value augmentation of an individual firm. It also has an important bearing on the economy as a whole. During its turnover-time, capital purchases both the means of production and labour-power from the market, without supplying a commodity. In the meantime, the wages paid to the workers are almost immediately spent on wage-goods, and the capitalist himself soon spends money out of his consumption-fund. The operation of his capital, therefore, absorbs from the market not only means of production but also articles of consumption, without counter-offering his own commodities in exchange for some time.

If a long-term project such as the building of a railway is undertaken, it tends to strain existing markets in a particularly pronounced fashion. First, a pressure builds up in the money markets in which funds to finance the project are sought, and the rates of interest rise accordingly. Second, markets for productive elements including labour-power are strained, entailing a significant rise in both wages and commodity prices. Since this kind of investment frequently occurs for speculative purposes, in periods which are well past the average-activity phase of the business cycle, it often precipitates the excess of capital (i.e. a rise of real wages so rapid as to render further investment unprofitable).

A long-distance trade such as that between England and India during the nineteenth century also had similar effects. In this case, a long circulation-period, rather than a long production-period, was responsible for the extension of the turnover-time of capital. When goods were exported to India, the English manufacturers were paid cash by the exporter. The cash, however, did not represent the money which the exported goods earned abroad. The exporter had to raise that sum in English money markets, elevating the rates of interest there. Moreover, when the producers spent the cash on productive elements in England prior to the arrival of Indian goods, the English markets for means of production and labour-power were also placed under a strong inflationary pressure.

In order to carry out investment projects with long life-cycles, without disrupting the normal functioning of the market, the capitalist economy must first have attained a considerable degree of maturity and sophistication, so that it has become capable of absorbing the disturbances which are liable to be caused by such projects.

5.3 THE CIRCULATION OF SURPLUS VALUE

5.3.1 The Realisation of Surplus Value

In the circulation-process of capital the produced commodity, C′, already embodies potential surplus value. Not until it is actually sold for money, M′, however, is the value augmentation of capital confirmed. Therefore, the conversion of C′ into M′ is a vital concern to the capitalist. Yet, in this conversion, his position is just as passive as that of any other commodity seller. Only the market will reveal to him how much surplus value he has actually managed to produce. For the present, however, let us assume that the capitalist has produced the socially necessary quantity of a use-value without wasting society's productive labour at all. Then he is expected to realise all the surplus labour spent on it, in the form of surplus value, when he sells his commodity at its market price.

For all, or the majority of, capitalists to be able to do likewise, however, there must be enough money, M′, in society to realise the value embodied in C′, even though they initially advanced only the value equal to $M = C\ (< C' = M')$. It appears as though capitalist society is short of money for the realisation of surplus value, $m = M' - M$. Although the velocity of circulation of money can vary from time to time, it cannot be expected to rise regularly every time society's capital turns over. Where does the money come from which may be spent to realise surplus value? This question was posed by some classical economists, and they found no answer.

It turns out that such a problem cannot be solved, if the circulation-process of capital is considered only, or exclusively, from the point of view of the circuit of money-capital, $M - C \ldots P \ldots C' - M'$. For this circuit does not explain the link $M' \cdot M$ (or the conversion of money into capital), since it takes M′ (more money) as its endpoint or purpose. It, therefore, appears from that point of view as though the capitalist is a pathological hoarder of gold, only too anxious to hide or bury monetised surplus value (i.e. surplus value in money form). The circulation-process of capital, however, also contains the circuit of

commodity-capital, $C' - M' \cdot M - C \ldots . P \ldots . C'$. It is this circuit that guarantees the continuity of the motion of industrial capital.

* * *

In the circuit of commodity-capital the exchange of C′ into C, that is, the conversion of products into productive elements is the major consideration. Clearly, however, this conversion cannot take place independently of the circulation of surplus value, c′ – m – c.

In order for the exchange of C′ for C to take place the aggregate supply of commodities, ΣC′, must contain all use-values that are socially necessary. First of all, this ΣC′ must contain newly produced means of production (P_m) to replace the means of production or capital goods used up, or worn out, in the previous process of production. Secondly, it must include wage-goods (W_g) that are necessary to reproduce labour-power consumed in the previous production-process. That, however, is not all. Thirdly, ΣC′ must also include consumption-goods for capitalists or luxury goods (L_x) which must be made available during the next turnover-time of capital. It is true that this third portion is not converted into productive elements, ΣC. Yet the circulation-process of capital could not continue if capitalists and their associates were unable to live while capital turns over.

$$\Sigma C' = \left\{ \begin{array}{ll} P_m & \longrightarrow P_m \\ W_g & \ldots\ldots\ L_p \\ L_x & \longrightarrow c \end{array} \right\} = \Sigma C$$

Since the capitalists who advance money-capital, M, recover their proceeds, M′, only after a lapse of time, they are said to "wait". That, however, does not mean that they can wholly abstain from consumption in the meantime. No capitalist can advance M as capital unless he has enough *consumption-funds*, m, at the same time to sustain his life during the "waiting" period. The prior possession of m together with M enables the capitalist to operate his chrematistics. Therefore, as M is converted into C to open the production-process, the capitalist also spends his consumption-fund, m, to buy luxury goods, c. By the time C becomes C′ at the end of the production-process, c has been consumed and has disappeared from the market. The money, m, spent on luxury goods, c, however, remains there as means of circulation. Therefore, in order to convert C′ into M′ the market not only possesses M but also m. From this point of view, in other words, there can be no shortage of money in the market to realise surplus value:

$$M' \cdot \begin{cases} M - C \ldots . P \ldots . C' - M' \\ m - c \qquad\qquad\qquad (m) \end{cases}$$

* * *

It is assumed above, however, that surplus value contained in C′ is equal to the value of capitalists' consumption-goods, or luxury goods. That, in fact, is the definition of *simple reproduction*. The question is whether the assumption of simple reproduction can be maintained at all in a capitalist society. Suppose that the capitalists as a whole now consume $\bar{c}$ = \$10 million at present. If surplus value actually earned is less than this, and if they do not cut back their consumption level, the present scale of capitalist operation cannot be maintained. If surplus value earned is more than $\bar{c}$, and if the capitalists refuse to consume more, the remainder must be accumulated. Either way a simple reproduction is impossible. Simple reproduction requires that surplus value currently produced should be exactly equal to a previously determined consumption-level, $\bar{c}$, of the capitalist class. Such a rigid restriction cannot, in general, be imposed on the motion of capital.

Capital is a form of value augmentation. It pursues value augmentation for its own sake; it does not pursue the individual comfort of the capitalist. For capitalist chrematistics, consumption of surplus value is never the purpose, but rather a necessary evil. Therefore, there is nothing that deters the production of surplus value from going beyond that which is adequate and reasonable to keep the capitalists alive.

What must be stressed here is that surplus value, whether wholly consumed or not, drops out of the circulation-process of capital, as capitalists' income or revenue. The amount of money corresponding to surplus value is regularly released from the circulation-process of capital, and becomes freely disposable in the hands of the capitalists. Since, as personifications of capital, they do not pursue individual comfort and luxury, the part of income that is not strictly necessary for the maintenance of a given standard of living will be *saved* and added to *accumulation-funds*. Thus, surplus value, m, is divided into two parts. One part is added to the consumption-fund, and the other part to the accumulation-fund. If the turnover-time of capital is long, even the consumption-fund is not all immediately spent. The accumulation-fund is not meant to be spent immediately in any case. For it has to grow over many turnovers of capital into a sum large enough to be spent on a specific set of productive elements. Money kept idle for an extended period of time in the form of accumulation-funds is no longer simply

means of circulation. It is funds, or monetary saving, ready to be used as capital as soon as the chance to do so arrives.

5.3.2 The Supply of the Monetary Commodity

If surplus value contained in C′ is greater than $m = \bar{c}$ which the capitalist has already injected into the market through his own consumption expenditure, it appears as though the money to realise surplus value becomes short once again. To account for this situation, let us recall that the existing stock of money in capitalist society does not wholly consist of active money (or means of circulation), but also contains idle money which is "hoarded" away from the market. In a well developed society, however, "hoarding" does not mean an irrational accumulation, or "hiding and burying", of money. Instead, it means a temporary "holding" of idle money necessitated by the turnover of capital.

The circulation-process of capital generates many forms of idle funds, such as depreciation-funds, accumulation-funds, wage-funds, etc. Invariably, these become idle money because they cannot be immediately spent on commodities. On the other hand, the quantity of active money needed for the circulation of commodities primarily depends on the volume of trade, i.e. on the value of the aggregate-social supply of commodities, $\Sigma C'$. Therefore, given the existing stock of money in society, an increase in the volume of trade would drain the pool of idle funds.

In general, there are, in addition to changes in the velocity of circulation, many well known mechanisms contributing to the flexibility of the monetary system, such as, for instance, the ready inflow of specie from abroad and the conversion of non-monetary gold into monetary gold. None of these, however, can be relied upon permanently and at all times. If the volume of trade continues to increase, as it would under expanded reproduction, additional money needed for its circulation must be produced within the economy.

* * *

Since, even under a simple reproduction, circulating money tends to be abraded or lost, the gold-producing industry must maintain a certain scale of operation, which is large enough to make up for the abraded or lost gold. That, however, is automatically accomplished by the working of the law of value. The law of value, by its operation, tends to bring about an optimum allocation of society's productive labour.

If gold is produced more than is necessary to meet society's monetary

or non-monetary demand for it, the socially necessary labour for its production, or its value, must fall below the quantity of labour actually spent for its production. In other words, gold is overproduced when more than socially necessary labour is actually spent for its production. That misallocation of resources will be reflected in a general ascension of the market prices of commodities (other than gold) above their normal prices. The gold-producing sector, which must buy its productive elements from elsewhere, therefore, becomes less profitable, and its expansion will slow down relative to that of other sectors. If gold is underproduced, the reverse situation will occur.

The operation of the law of value will, therefore, guarantee that an appropriate quantity of gold tends to be produced. The above merely confirms the fact that gold, or the monetary metal, too is produced capitalistically just as any other commodity.

* * *

There is no change in principle to this mechanism if additional monetary gold is needed for accumulation, rather than merely to replenish the depletion of the existing stock due to abrasion and loss. Regardless of how the extra demand for money arises in society, the rising value of the monetary metal is reflected in a general fall in the market prices of commodities below their normal prices. These commodities, of course, include productive elements that the gold-producing sector purchases in the open market. Thus, in order to produce the same amount of gold as before, this sector need pay less than previously for the necessary elements of production. The production of gold becomes relatively more profitable, and so it expands until the socially necessary output of gold has flowed into the market.

The output of the gold-producing sector is already in the form of money, so that this sector does not depend on already existing money to sell its output. As soon as this expanding sector purchases productive elements, or consumption-goods for capitalists, there is a net injection of money into the market. It is the only sector which can purchase commodities without first selling its commodity-output for gold.

Thus, with the working of the law of value, the aggregate-social supply of commodities, $\Sigma C'$, can be counted upon to contain enough additional gold to ensure their circulation. There cannot be a permanent shortage of the monetary metal in capitalist society, any more than a permanent excess of it. The circulation-process of capital, whether in simple or in expanded reproduction, is in no way restricted by the production of gold, so long as gold too is produced as a commodity.

5.3.3 The Conversion of Surplus Value into Capital

As surplus value exceeds the value of capitalists' consumption-funds, $\bar{c}$, accumulation-funds are formed. If a large number of capitalists temporarily retain such monetary savings without spending them on commodities, a shortage of the means of circulation will develop.

Since that shortage has a deflationary effect, as already explained, the production of gold will be stimulated. In any case, there is nothing that obstructs the formation of accumulation-funds, if capitalists save with a view to building resources for investment in future.

Just as the accumulation of precious metals was a pre-condition of the capitalist mode of production, so is the saving of money which adds to accumulation-funds the pre-condition of new capital formation in capitalist society. In capitalist society, however, money is never "hoarded" for its own sake. Money is held back from the market only while its owner bides his time. That is to say, accumulation-funds are formed deliberately, in preparation for capital formation. When such funds reach an adequate magnitude for investment, they are automatically converted into capital.

* * *

In an agricultural society, the surplus product that is not currently consumed may take the form of productive elements from the beginning. For example, grain that is not consumed as food can be utilised immediately as seed. For an agricultural society to expand the scale of its reproduction, it suffices to devote more labour to the cultivation of a more extensive area of land so as to plant more seedlings. It is certainly not necessary for gold production to expand first in order to mediate the expanding reproduction of real things.

In capitalist society, by contrast, surplus value must always be realised in the form of money. Part of this monetised surplus value feeds into accumulation-funds, which will eventually be spent on commodities that are suitable for accumulation, i.e. on additional elements of production. Therefore, an expanded reproduction, in capitalist society, always presupposes the formation of accumulation-funds. The process of accumulating such investible funds, however, is by itself sufficient to stimulate the production of gold. For, as more money becomes idle, withdrawing from the sphere of circulation, active money falls short of the quantity necessary to circulate the present supply of commodities. Thus, gold production automatically expands in response. This expansion of the gold-producing sector occurs before accumulation-funds are actually spent on productive elements, i.e. before any real capital accumulation.

The production of the monetary metal is by itself a "productive" activity, since it transforms part of nature into a use-value. In another sense, however, it is also "unproductive", since this particular use-value is strictly commodity-economic, and cannot be consumed or enjoyed. In order to accumulate wealth, capitalist society must produce money which cannot be consumed or enjoyed as an ordinary use-value, by allocating a portion of society's productive resources, and by thus sacrificing, to that extent, the production of ordinary use-values.

From the point of view of capitalist rationality, it is imperative that the use of resources for the production of this purely commodity-economic wealth should be economised as far as possible. The credit system, which activates idle funds for "capitalist-social" utilisation as money-capital, is evidence of such an effort. (This subject will be treated exhaustively in Volume 2, Chapter 9.) In the last analysis, however, some prior increase in the production of gold cannot be avoided for capital accumulation, or for the conversion of surplus value into capital.

* * *

The gold-producing sector alone can expand without additional money-capital. It is not necessary, in other words, for this sector to set aside more accumulation-funds for expansion. For, when it has to expand, commodity-prices are already lower than normal, enabling it to purchase more productive elements than usual with the same outlay of money. Moreover, when its output increases, the gold-producing sector can spend additional gold to purchase more commodities, injecting more money into the system.

As the production of new gold replenishes the means of circulation, the accumulation-funds, which have been held idle in the meantime, reach a sufficient magnitude and can now be spent on additional productive elements. By the time real accumulation takes place, capitalist society already has in its possession enough money to circulate the increased volume of commodities.

The problem of accumulation, however, cannot be solved only from the point of view of money. For money cannot buy productive elements which do not already exist in the market. The actual conversion of surplus value into capital requires the prior presence of additional labour-power and means of production in the market. How does capitalist society generate additional elements of production as commodities? This question cannot be answered within the present confines of the circulation-process of capital. It will have to be dealt with, in the next chapter, as part of the reproduction-process of capital.

6 The Reproduction-Process of Capital

6.1 REPRODUCTION OF THE CAPITALIST PRODUCTION-RELATION

6.1.1 Production of Capital by Capital

"A society, regardless of its form, can no more cease to produce than it can cease to consume. When viewed as a connected whole and as flowing on with incessant renewal, every social process of production is a process of reproduction" (*Capital*, I, p. 531). In capitalist society, production continues because of the uninterrupted motion of capital. We cannot, however, simply or automatically assume the non-interruption of capitalist production. Instead, we must establish its commodity-economic necessity in the light of the circulation-process of capital, which was studied in the previous chapter. Among other theories elaborated in that chapter, the one on the "circulation of surplus value" is of particular relevance here. The fact that it is based on the circuit of commodity-capital alerted us to the need for a comprehensive theory of the reproduction-process of capital.

In this chapter, we specifically address the reproduction-process of the aggregate-social capital, that is to say, the reproduction of capitalist *society* as a whole. All societies reproduce themselves by reproducing their economic life, i.e. by reproducing goods, or use-values, of various kind in definite proportions. For instance, a feudal society perpetuates its hierarchical lord–vassal relation by reproducing agricultural and manufactured goods which are regularly distributed, in appropriate proportions, to its various classes. Indeed, the reproduction of use-values in human society is never exclusively a natural activity. It is a natural activity (a man–nature interface called "production") which is carried out under the rules and principles dictated or sanctioned by the particular form of social organisation. We may call this latter the "production-relation".

Thus, in capitalist society, goods are produced as commodities, i.e. as value, meaning indifferently to their use-values. When capitalist commodity production occurs "with incessant renewal", it reproduces

the "value relation" which defines the structure of the organisation of production in capitalist society, i.e. of the production-relation peculiar to capitalism.

We shall, therefore, examine first what the reproduction of capitalist production-relation involves (in the present Section 6.1), before investigating (in Section 6.2) how it relates with, and is supported by, the capitalist reproduction of goods, or use-values, as commodities. The first section addresses the production-process of the aggregate-social capital, prior to its disaggregation into sectors. The second section deals with the circular flow structure (the system of the inter-sectoral flows of produced goods) of capitalist society. When these two aspects are studied, they will then be synthesised (in Section 6.3) into the "actual process" of capital accumulation.

* * *

So far, both the production-process and the circulation-process of capital have been studied with reference to the activity of the representative capital, i.e. a representative sample of individual capital-units. We now focus our attention on the macro-behaviour of the aggregate-social capital, rather than on the micro-behaviour of the representative individual capital. In fact, the changeover took place in the discussion of the "circulation of surplus value" in the previous chapter. For that subject presupposed the circuit of commodity-capital, the only circuit capable of explicitly accounting for the social interaction of the motion of capital.

The circuit of commodity-capital requires that the capitalistically produced commodity (C′) should be exchanged, by the mediation of money, for its elements of production (C), and for whatever luxury consumption-goods (c) that capitalists may purchase from out of their surplus value incomes. However, for an individual capital to successfully complete the operation:

$$C' - M' \cdot \begin{cases} M - C \\ m - c, \end{cases}$$

the aggregate-social output, $\Sigma C'$, should have an appropriate composition of use-values. (Here, I use the Σ-sign before C and C′ when they pertain to the input and the output, respectively, of the aggregate-social capital rather than to the representative individual capital-unit.)

If this point is taken into consideration, the production-process of capital can no longer be adequately represented by P in C . . . P . . . C′, but only by that in ΣC . . . P . . . $\Sigma C'$. That is to say, P must be viewed

as the production-process, not of an individual capital, but of the aggregate-social capital, which transform all productive elements of society into a collection of diverse commodities to meet society's demand. On the basis of such P, the circulation-process of capital too becomes $\Sigma C' - M' \cdot M - [\Sigma C \ldots P \ldots] \Sigma C'$, or the exchange of the aggregate-social commodity-capital for itself, $\Sigma C' - M - \Sigma C'$.

Thus, there emerge two separate problems at this point. The first is the production-process of the aggregate-social capital, in which the exchange of $\Sigma C'$ for ΣC is taken for granted. The second is the exchange of the aggregate-social commodity-capital $\Sigma C'$ for itself, through the mediation of money, while the process of its production is held implicit. The first of these will be treated in the present section.

* * *

Regardless of the assignment of its individual component units, the aggregate-social capital must continually supply the market with the means of production (capital goods) and the articles of consumption (wage-goods and luxury goods), at the same time as it "also produces and reproduces the capitalist relation; on the one side the capitalist, on the other the wage-labourer" (*Capital*, I, p. 542).

In order to account for the reproduction of the capitalists and the workers as classes, it is enough to consider one gigantic capital which produces all use-values that society needs. This method makes the division of the economy into sectors unnecessary. The total output of the aggregate-social capital may, therefore, be represented by $C^* + V^* + S^*$. (In the rest of this section I will use the symbols C and c to denote "constant capital". Thus, C no longer refers, as previously, to "commodities" produced or circulated by capital, nor c to capitalists' consumption-fund.)

If the constant-capital component, C^*, of the total output is physically in the form of the means of production, and if the value-added component, $V^* + S^*$, is entirely in the form of the articles of consumption, a *simple reproduction* is said to occur. If any part of the surplus-value component, S^*, of the total output contains some means of production, an *expanded reproduction* is said to take place.

It cannot be said of a single capital that the constant-capital component (c) of its output always represents means of production, nor its value-added component ($v + s$) the articles of consumption even in the case of simple reproduction. To the total output of the aggregate-social capital, however, the above specification applies.

Table 6.1

	(c)	$(v + s)$	
Capital I	20	+ 10 =	30 value of steel
Capital II	10	+ 10 =	20 value of corn
+			
Aggregate-social capital	30 (C^*)	+ 20 = ($V^* + S^*$)	50 value of total output

Consider an imaginary capitalist economy with only two independent capitals. Let the first produce 15 units of steel (the means of production) with 10 units of steel and 10 hours of labour; and let the second produce 10 units of corn (the article of consumption) with 5 units of steel and 10 hours of labour. If the values of steel and corn are both equal to 2, the situation as in Table 6.1 obtains. For the first capital, both $c = 20$ and $v + s = 10$ represent the value of steel; and, for the second capital, both $c = 10$ and $v + s = 10$ represent the value of corn. For the aggregate-social capital, however, one can say that $C^* = 30$ represents the value of steel, and $V^* + S^* = 20$ the value of corn.

This, of course, is the case in simple reproduction in which the value of steel currently produced (= 30) is equal to the value of steel currently used up, C^*. Under an expanded reproduction the former must be larger than the latter. The excess must then be absorbed by $V^* + S^*$, and more specifically by S^*.

6.1.2 Simple Reproduction of Capitalist Society

The mechanism by which the capitalist production-relation is reproduced appears in the clearest light in the case of simple reproduction. In order to maintain the existing capitalist class, it is necessary that surplus labour should be appropriated in the form of surplus value, and that the latter should be sufficient for the consumption-fund of the capitalist class. In order to generate regular incomes for the capitalists every year, a given magnitude of capital must be invested in the continuing process of production, either as constant or as variable capital.

The labour-power that variable capital purchases functions as productive labour in the production-process of capital, transferring the old value of the means of production to the new product, while forming new value greater than the currently consumed value of labour-power.

Consequently, the continuity of the production-process requires that an appropriate quantity of labour-power should always be reproduced, and be made available as variable capital.

Capital cannot directly reproduce labour-power. Its reproduction must occur in the individual consumption of wage-goods by the workers. However, since capital produces all wage-goods as commodities and owns them, the workers must buy back these goods from the capitalists with the wages that are paid in return for the value of their labour-power. It is necessary that the value of the wage-goods required for the reproduction of labour-power should be equal to its value. For otherwise the continued supply of labour-power, currently engaged in the production-process of capital, cannot be guaranteed. The basket of wage-goods necessary for the reproduction of labour-power need not be specified once and for all in physiological, nutritional or medical terms. For it should reflect historical and cultural elements of society as well. What is important, however, is that the total wage-bill must equal the value, or the reproduction-cost, of labour-power currently consumed.

Wages are paid at the end of the contractual employment period, which is normally shorter than the turnover-time of capital. Therefore, the individual capitalist must advance wages, before he recovers them in the sales proceeds of his commodity. The aggregate-social capital, however, pays wages only when it has already produced wage-goods. If workers are paid money wages which they cannot immediately use to purchase wage-goods, the very reproduction of labour-power will be jeopardised. Therefore, the social production of wage-goods must be so timed as to coincide with the (say, week by week) payment of wages. If so, however, the money that the aggregate-social capital pays as wages will immediately return to it, in exchange for the sale of wage-goods. This money, in turn, can be re-invested as variable capital.

This "fool-proof" mechanism is ensured by the production of wage-goods as commodities. If the direct producers' articles of consumption are not produced as commodities, as in the case of the peasants under *corvée* services, such a mechanism does not apply. *Corvée* peasants produce during their necessary labour-time their own means of livelihood, which they do not have to buy back with wages. Since the lord cannot control the reproduction of their labour-power, the peasants do not automatically come forward to offer their surplus labour tomorrow. That is why the application of extra-economic compulsion becomes necessary.

The reason that the reproduction of variable capital is automatic without

the intervention of extra-economic power is that labour-power loses its value in the production-process of capital. That is to say, the use-value of labour-power cannot be consumed by its natural owner but only by capital. Therefore, the product of labour must, in the first instance, belong to capital as commodities. Having sold their labour-power, the wage-earners are obliged to "buy back" the product of their necessary labour.

* * *

By automatically restoring its variable part, the aggregate-social capital controls society's productive labour. Productive labour, however, not only forms new value, but also preserves and transfers old value from the means of production to the new product. Thus, constant capital too is automatically maintained by the reproduction of variable capital. If means of production are left outside the labour-process, they decay rapidly and lose their value together with their use-value. Constant capital has no power of its own to either maintain or reproduce itself. It must depend on the concrete-useful aspect of productive labour to do so.

Since C^*, under the present assumption, consists solely of means of production, the reproduction of constant capital signifies the transformation of old into new means of production. That is to say, as old capital goods are used up, new capital goods emerge. This transformation too, though it does not involve the formation of any new value, is accomplished by productive labour, specifically by its concrete-useful aspect. Externally, however, this process makes it appear as though capital, by itself, maintains its own value through time. Since the rôle of productive labour is not visible from the outside, the self-maintenance of capital is sometimes viewed as a mysterious phenomenon. Such a view is consistent with the simple observation of the operation of an individual capital, which somehow seems automatically to recover the value of constant capital in the form of money, and to reconvert it into necessary means of production.

From the point of view of the aggregate-social capital, however, the possibility of selling commodities for prices that will recover the consumed (used up) value of C^*, and the availability in the market of new means of production for the replacement of the old value of C^*, cannot be taken for granted. We shall learn that these are both the consequences of the reproduction of C^*, which is made possible by the concrete-useful character of productive labour, and that the supply of the latter in and appropriate quantity is, in turn, guaranteed by the reproduc-

tion of variable capital. The reproduction of constant capital, C^*, in other words, presupposes the reproduction of variable capital, V^*.

* * *

If, however, the capital-value, $C^* + V^*$, is maintained and reproduced, that already ensures the regular formation of the capitalists' income, S^*. In the case of a simple reproduction, S^* consists entirely of luxury goods, i.e. articles of consumption for capitalists. The class of capitalists, therefore, maintains itself simply by keeping the capital-value intact.

Even if the "original" capitalists did not live on surplus value produced by others, they soon end up doing so as the reproduction of capital proceeds. Suppose that the capitalists originally acquired 60 value units by their own labour, of which 40 units ($= 20C^* + 20V^*$) they advanced as capital, allowing the remainder for their first year's consumption. If $e = 100$ per cent and simple reproduction is assumed, the product value will be $60 = 20C^* + 20V^* + 20S^*$ annually. In three years, therefore, the consumption of $60 = 3 \times 20S^*$ by the capitalists equals what they originally possessed as the fruit of their own labour. This example suggests that the capitalists cannot avoid living on surplus value for long. Sooner or later they end up living on the avail of someone else's labour.

Since the capitalists and their associates do not perform productive labour, they can live only on the surplus labour of productive workers, which capital appropriates as surplus value. Productive workers, for their part, cannot reproduce themselves except as variable capital, i.e. without regularly "donating" the fruit of their surplus labour to the capitalist class. The two classes, the one that must sell labour-power and the other that can purchase it, are thus established and maintained. The separation of the two classes is based on the fact that the direct producers in capitalist society are totally deprived of the means of production, and each one of them has to sell his own labour-power as a commodity to capital, which alone has the right to consume its use-value.

6.1.3 The Possibility of Expanded Reproduction

So far only the simple reproduction of capital (variable and constant) and surplus value have been examined. However, surplus value forms a freely disposable income of the capitalist class, and so can be either consumed or saved. Since it is not possible for surplus value never to exceed the consumption-fund of the capitalists, there is always the

possibility of positive saving. Therefore, a formal possibility (or contingency as opposed to necessity) of accumulation always exists.

This possibility reflects the nature of capital as a form of value augmentation. Surplus value is not pursued to make capitalists' lives more comfortable or affluent. It is pursued for its own sake. The so-called abstinence theory errs in attributing the cause of saving to the frugality of the capitalist. It is not his personal fortitude, the Protestant ethic or any other virtue that makes him save. It is merely because he himself is a personification of the chrematistic form of capital. In other societies in which the production-process is not governed by capital, surplus products are often dissipated by the ostentatious consumption of those in power. That occurs not because the ruling class is less virtuous, but simply because it does not represent capital.

If savings out of surplus value, or accumulation-funds, reach a magnitude sufficient for real capital formation, surplus value is convertible into capital. Individually, a capitalist may have to wait for an extended period of time, before he can transform his savings into investment. For the aggregate-social capital, however, if any part of its income, S^*, is saved, it is invested somewhere. A mechanism which is, for the present, held implicit can be depended upon to channel capitalist-social savings into appropriate spheres of investment (see Volume 2, Chapter 9). The ratio, α, which refers to aggregate savings from the capitalists' income, S^*, may, therefore, be called either the *rate of accumulation* or the capitalists' *propensity to save.*

* * *

In order to actually transform aggregate savings (αS^*) into additional capital or investment (ΔK), however, the former, which is in the form of money, must find necessary elements of production, i.e. additional means of production and labour-power, in the market in physical form. There is no inherent difficulty for the aggregate-social capital to produce additional means of production. It simply means that S^* is not wholly produced in the form of luxury goods (consumption-goods for capitalists), but contains the required items of the means of production. The mere fact that the capitalists save αS^* indicates that the demand for luxury goods has declined by that amount, and other things must be produced in their place. The law of value will see to it, through the motion of prices, that S^* will have an appropriate mix of use-values, and specifically contain required additions to the means of production.

The difficulty, therefore, arises only in the provision of labour-power which is to be purchased as additional variable capital (ΔV^*). In some

cases the use-value of the existing V^* can be extended by an enhanced rate of surplus value. That, however, would not be an instance of accumulation; for, strictly speaking, accumulation should mean the conversion of surplus value into capital. There is, therefore, only one factor that permits the employment of more workers, even under a full-employment condition. That is the natural growth of the working population. The wage-rate adequate to reproduce the existing population of workers also guarantees the maintenance of normal family life to the working class. Depending on cultural factors, the normal family life implies a natural growth of the working-class population.

The increase in the population of workers cannot be absorbed unless the scale of reproduction expands proportionally. If, even with a natural growth in the working population, the scale of reproduction were rigidly held stationary, then the capitalist mode of production could not be said to govern the whole society. In historical capitalism an autonomous growth in the working population almost always led to an accelerated accumulation. For if the incremental population of direct producers had to live on a mode of production other than the capitalist one, capitalism would not yet have matured to the point where it could organise all of the society's economic life. Though this is possible in reality, it must be supposed in theory that capital accumulates at least as quickly as the working population naturally grows, so that it can organise all of society's economic life.

* * *

In order for capital to accumulate, i.e. to expand the scale of its reproduction, surplus value must be converted into capital. Thus, out of surplus value, springs new capital. This thesis follows from the free disposability of surplus value as capitalists' incomes. In order to set capital into motion, freely disposable funds must first be accumulated to an adequate magnitude. It does not matter how such funds originally arose in history. Once the capitalist mode of production is in progress, the only source of freely disposable funds convertible into capital is nothing other than monetised surplus value (i.e. surplus value realised in money). In this sense, the real source of additional capital is always surplus value.

An overwhelming proportion of the existing stock of capital must have arisen from surplus value. Suppose that originally \$12,000 were advanced as capital; and let $c/v = 3$, $e = 100$ per cent, $\alpha = 4/5$. This means that the rate of growth of capital stock ($g = \Delta K/K$) is 20 per cent, as shown in Table 6.2. In this case it can be shown that within

Table 6.2

K		C^*		V^*		S^*				ΔK
12,000	→	9,000 c	+	3,000 v	+	3,000 s	=	15,000	→	2,400
14,400	→	10,800 c	+	3,600 v	+	3,600 s	=	18,000	→	2,880
17,280	→	12,960 c	+	4,320 v	+	4,320 s	=	21,600	→	3,456
		. . . . .								

five years more than half of the existing capital value (K) has arisen from out of surplus value, and that in ten years the original advance of capital becomes less than $\frac{1}{6}$ of the existing capital value. Thus viewed, the original capital of \$12,000 is an instrument not only of appropriating the surplus value of \$3,000 in the first year, but also of appropriating $\$3{,}000(1 + 0.2)^n$ over $n \to \infty$ years.

If, in value terms, the growth rate of capital stock is 20 per cent, the accumulation of real wealth (in use-values) is much greater, if we allow for technical progress to take place in the meantime. The same value of capital can purchase more means of production and labour-power. The same value of consumption-fund $(1 - \alpha)S^*$ enables the capitalists to live in increasing luxury. Neither does the growth of the working population necessarily worsen the worker's standard of living, contrary to the assertion of the so-called wage-fund theory. All this, however, is predicated on the natural growth rate of 20 per cent of the working population. It is, of course, highly unlikely that the warranted rate of accumulation of capital agrees exactly with the natural rate of increase of the working population. The above theory, therefore, is still confined to the sphere of formal possibility (contingency).

6.2 THE REPRODUCTION-SCHEMES

6.2.1 The *Tableau Économique* of Capitalist Society

In the previous section we studied the reproducibility of capitalist society from the point of view of the production relation. We examined how the aggregate-social capital annually reproduces its constant and variable component, while generating surplus value as the income of the capitalist class. All along we assumed that the capitalistically produced commodities never failed to be circulated appropriately, and thus made the reproduction of the aggregate-social capital possible. Now we must face the basis of that assumption. That is to say, we must

study the reproducibility of capitalist society from the point of view of the circulation of commodities, presupposing the continued validity of the capitalist production relation. That study amounts to examining the circular flows of capitalist society in the special form of a *tableau économique* which we shall call the reproduction-scheme.

A reproduction-scheme treats the reproducibility of capitalist society merely as the exchange of $\Sigma c'$ for $\Sigma(C, c)$, i.e. of the aggregate-social commodity-capital for itself, taking the following two conditions for granted. They are: (i) the on-going production-process of the aggregate-social capital, $\Sigma C \ldots P \ldots \Sigma C'$, and (ii) the working of the law of value through the price mechanism. A reproduction-scheme, therefore, represents only one aspect of the reproduction-process of capital. Specifically, it holds labour-power implicit, though it treats explicitly the reproduction of wage-goods along with other commodities. In other words, the theory of the reproduction-scheme does not explain whether or not capitalism would survive fundamental disequilibrium between the reproduction of goods and the reproduction of labour-power. Since it is a circular-flow theory, it merely assumes an equilibrium in the market for commodities, and does not explain how that equilibrium is, in fact, arrived at.

As such, the scheme consists of two accounting (or definitional) identities and one inter-sectoral constraint, but contains no behaviour equation. Its general form is

$$\begin{cases} u_1 = c_1 + v_1 + s_1, \\ u_2 = c_2 + v_2 + s_2, \\ \quad c_2 \leqq v_1 + s_1, \qquad (*) \end{cases} \tag{1}$$

where the product value, u, is decomposed into its constant-capital component, c, variable-capital component, v, and surplus-value component, s, and where the subscripts 1 and 2 refer, respectively, to the first sector in which means of production are produced, and the second sector in which articles of consumption are produced. A numerical example is commonly written as

$$\begin{cases} \text{I. } 6000 = 4000c + 1000v + 1000s, \\ \text{II. } 3000 = 1500c + 750v + 750s, \\ \quad \text{II}c = 1500 < 2000 = \text{I}(v + s). \qquad (*) \end{cases} \tag{2}$$

In all cases, the equality sign (=) is used to express identity (≡) for notational simplicity.

The inter-sectoral constraint (*) means that the economy is *not* contracting the scale of its activity. Since $v_1 + s_1 = u_1 - c_1$, one may rewrite it as $c_2 \leqq u_1 - c_1$, or $c_1 + c_2 \leqq u_1$. In the numerical example (2), that comes to 4000 Ic + 1500 IIc < 6000 I. In this way, it is clear what the constraint states. It states that a reproducing economy cannot continue to consume more means of production than it currently produces. (In old Marxist writings, this constraint is frequently referred to as an "inter-sectoral equilibrium condition": but that is clearly a wrong usage of the term.) If each sector produces only one use-value, say, X of iron and Y of corn, the reproduction-scheme may be written as

$$\begin{cases} \lambda_x X_x + L_x = \lambda_x X, \\ \lambda_x X_y + L_y = \lambda_y Y, \\ \lambda_x X_y \leqq L_x, \qquad (*) \end{cases} \tag{3}$$

where X_i and L_i are the iron and labour productively consumed in the i-th sector (i = x, y). Then it is easily found that the constraint (*) is equivalent to $X_x + X_y \leqq X$, meaning that the iron used up never exceeds the iron produced.

* * *

The fact that the division of the reproduction-scheme into the two sectors reflects purely technical and supra-historic considerations indicates the absurdity of considering the two sectors as two competing capitalist units. The two sectors do not compete with each other in the way two capitalists do with each other in the market. This point must be clearly borne in mind in examining an expanded reproduction-scheme.

Expanded reproduction requires that the inter-sectoral constraint should be satisfied with a strong inequality, so that IIc < I($v + s$). Let s be divided into additional constant capital, c', additional variable capital, v', and consumption by capitalists, s', so that $s = c' + v' + s'$. Let $c'' = c + c'$ and $v'' = v + v'$. Then the scheme must be re-arranged to satisfy the equality IIc″ = I($v'' + s'$) in order to commence accumulation. Suppose that the above example (2) held at the end of the previous year. The rate of surplus value was e = 100 per cent and the value composition of capital was $k_1 = 4$ in the first sector, and $k_2 = 2$ in the second. The inter-sectoral constraint indicates that the first sector produces more means of production in net terms than can be absorbed

by the second sector, so that additional means of production of 500 value units are available for accumulation.

Suppose that the system intends to grow by 10 per cent ($g_1 = 0.1$). Then the capital of the first sector must be re-arranged to

$$(4000c + 400c')c'' + (1000v + 100v')v'',$$

and this implies that $s - (c' + v') = s' = 500$ is left for consumption in the first sector. Therefore, the rate of accumulation, or the propensity to save, is $\alpha_1 = 0.5$. Once this combination ($g_1 = 0.1$ and $\alpha_1 = 0.5$) is chosen, however, the second sector must assume a combination (g_2, α_2) adaptively. We have the relation

$$c_1' + c_2' = \alpha_1 s_1 \left(\frac{k_1}{1 + k_1}\right) + \alpha_2 s_2 \left(\frac{k_2}{1 + k_2}\right) \qquad (**)$$

which, under the present numerical example, comes to $\alpha_1 800 + \alpha_2 500$. Therefore, if $\alpha_1 = 0.5$, it must follow that $\alpha_2 = 0.2$. Also we can derive the relation

$$\frac{\alpha_i e}{1 + k_i} = g_i, \quad (i = 1, 2) \qquad (***)$$

which confirms the combination $\alpha_1 = 0.5$ and $g_1 = 0.1$. If $\alpha_2 = 0.2$ we have $g_2 = 0.067$, so that capital of the second sector must be re-arranged to,

$$(1500c + 100c')c'' + (750v + 50v')v''.$$

Consequently, the re-arrangement of (2) turns out to be

$$\begin{cases} \text{I. } 6000 = 4400c'' + 1100v'' + 500s' \\ \text{II. } 3000 = 1600c'' + 800v'' + 600s', \\ \qquad\quad \text{II}c'' = 1600 = \text{I}(v'' + s'), \end{cases}$$

and it enables accumulation.

* * *

During this year, while $s_1' + s_2' = 1100$ is consumed, the scheme expands by the year end to

$$\begin{cases} \text{I } (+10.0\%).\ 6600 = 4400c + 1100v + 1100s, \\ \text{II } (+\ 6.7\%).\ 3200 = 1600c + 800v + 800s, \\ \text{IIc} = 1600 < 2200 = \text{I}(v + s), \end{cases} \tag{4a}$$

since the rate of surplus value is $e = 100$ per cent. Now, this scheme can be re-arranged to grow at 10 per cent in both sectors. From (**) and (***) it can be easily confirmed that $\alpha_1 = 0.5$ and $\alpha_2 = 0.3$ are consistent with $g_1 = g_2 = 0.1$ in this case. Repeating the same procedure, we arrive at the following by the end of the next year and of the successive years:

$$\begin{cases} \text{I } (+10\%).\ 7260 = 4840c + 1210v + 1210s, \\ \text{II } (+10\%).\ 3520 + 1760c + 880v + 880s, \\ \text{IIc} = 1760 < 2420 = \text{I}(v + s), \end{cases} \tag{4b}$$

$$\begin{cases} \text{I } (+10\%).\ 7886 = 5324c + 1331v + 1331s, \\ \text{II } (+10\%).\ 3872 = 1936c + 968v + 968s, \\ \text{IIc} = 1936 < 2662 = \text{I}(v + s), \end{cases} \tag{4c}$$

etc. Thus, with the exception of the first year, the scheme can grow with the uniform rate of 10 per cent in both sectors.

Since $c' = cg$, $v' = vg$ and $s = c' + v' + s'$, it is clear that $s' > 0$ implies $s / (c + v) > g$. Therefore, in the present example $g_1 < 0.2$ must be the case. With this restriction, however, any positive growth rate for the first sector can be chosen initially, and the corresponding growth path of the system can be determined. For example, $g_1 = 0.0875$ entails $\alpha_1 = 0.4375$, $g_2 = 0.1$ and $\alpha_2 = 0.3$. Then the scheme at the end of this year will be

$$\begin{cases} \text{I } (+8.75\%).\ 6525 = 4350c + 1087.5v + 1087.5s, \\ \text{II } (+10\%).\ 3300 = 1650c + 825v + 825s, \\ \text{IIc} = 1650 < 2175 = \text{I}(v + s), \end{cases} \tag{2''}$$

and, from the following year onward, it will grow at the uniform rate of 8.75 per cent in both sectors. It can be shown easily from $\text{IIc}'' = \text{I}(v'' + s')$ that only in the first year do we have $g_1 \neq g_2$ in general, and that $g_1 = g_2$ will be the case thereafter (M. Morishima, *Marx's*

Economics (Cambridge University Press, London, 1973), pp. 120–2).

Sometimes, the above theory is criticised as implying an "unnatural investment function which contradicts the equalisation of profit-rates" (ibid., p. 122). This criticism, however, is based on a misunderstanding. The mere fact that an arbitrary g_1 can be chosen from a set of infinitely many possibilities to determine the corresponding balanced growth path of the system indicates the irrelevance of an "investment function" as a behaviour equation. The above theory specifies only the material constraint under which capital accumulation may take place. It does not tell us which of the many possible growth paths constitutes the preferred capitalist choice. Only in the context of actual capital accumulation does such a problem of choice arise, and not in the context of the reproduction-schemes. Nor does the above theory contradict the equalisation of profit rates. Along any feasible balanced growth path there exists a set of prices that makes all sectors of the economy equally profitable. If that were not the case, a theory of the circular flows (reproduction-schemes) which assumes (as the present one does) the full working of the law of value would not be possible.

6.2.2 The Problem of the Circulating Medium

A reproduction-scheme is a circular flow model, in which the flow of commodities from one sector to another always presupposes a counter-flow of money as the means of circulation. It is, therefore, necessary for us to find out how money mediates the circulation of commodities in each reproduction-scheme.

Let us first consider the case of simple reproduction. For purposes of illustration, it is convenient to obtain a simple reproduction-scheme by "truncating" our familiar example (2), that is to say, by removing appropriate numbers of value units, $\bar{s}_1$ and $\bar{s}_2$, from s_1 and s_2. There are, of course, many different ways of truncating an expanded reproduction-scheme into a simple one. Since the following argument is not affected in any particular way, however, let us arbitrarily take away $\bar{s}_1 = 500$ from s_1 and $\bar{s}_2 = 0$ from s_2. Then we have the following. (In this truncated scheme we shall not worry about the rate of surplus value being different in the two sectors).

$$\begin{cases} \text{I. } 5500 = 4000c + 1000v + 500s, \\ \text{II. } 3000 = 1500c + 750v + 750s, \\ \quad \text{II}c = 1500 = \text{I}(v + s). \end{cases} \tag{5}$$

It is customary to examine the problem in three parts: (i) the internal circulation of money in Ic; (ii) the internal circulation of money in II(v + s); and (iii) the inter-sectoral circulation of money to mediate the exchange of IIc for I(v + s).

For definiteness we assume that all goods are produced and circulated within a year. All goods emerge finished at the end of September, and are completely circulated by the year end. In the case of simple reproduction, every act of selling commodities is followed by the act of purchasing an equal amount of money value during the circulation-period (i.e. between 1 October and 31 December). Thus, the means of circulation paid out from any part of the system always returns to the point of origin in the same period. All value units are expressed in millions of dollars, and we assume that the dollar prices are proportional to values.

(i) 4000Ic. To circulate commodities of this much money value, the quantity of money $M_1 = \mu_1 4000$, where μ_1 is the reciprocal of the velocity of circulation, is needed. If $\mu_1 = 0.2$, we need $M_1 = 800$. It does not matter who pays these \$800 million first, since all capitalists should have some money-capital which has not been used as of 30 September. Thus, any part of $M_1 = 800$, once spent, will change hands five times before it returns to wherever it originated.

(ii) 750IIv + 750IIs. Wage-goods worth 750IIv are produced and consumed in the same second sector. For this transaction $M_2^v = \mu_2^v 750$ is needed. Since all wages are paid on 30 September, the capitalists of sector II must pay \$750 million on that day, and the workers whose labour-power has already been consumed spend this money during the last quarter of the year to buy wage-goods of the same money value from the capitalists of the same sector. Therefore, $\mu_2^v = 1$, so that $M_2^v = 750$.

For the circulation of 750IIs, the system needs $M_2^s = \mu_2^s 750$. All capitalists of the second sector have some consumption-funds ready on 1 October. If $\mu_2^s = 0.3$, \$225 million must be spent by some capitalists first. Then this money circulates $3\frac{1}{3}$ times to complete the transaction.

(iii) 1500IIc = 1000Iv + 500Is. The quantity of money necessary to circulate 1500IIc, 1000Iv and 500Is will be denoted by M_3^c, M_3^v and M_3^s, respectively.

First, M_3^v must be spent entirely by the capitalists of the first sector on 30 September out of their wage-funds. Then this money will be spent by the workers of that sector on wage-goods, giving the capitalists of the second sector the wherewithal to purchase some means of production from the first sector. When 1000IIc are bought, however,

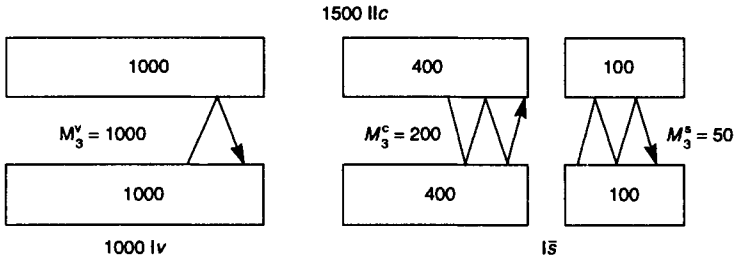


Figure 6.1

M_3^v returns to the capitalists of the first sector to restore their wage-funds, and circulate no further. Hence, $M_3^v = 1000$ circulates goods worth \$2000 million, and $\mu_3^v = 0.5$, i.e. $M_3^v = \mu_3^v 2000$.

There remains the exchange of 500I*s* for 500II*c*. In this case, there are two sources of money: M_3^c and M_3^s. Suppose that the capitalists of the second sector spend \$200 million to buy 200II*c*, and the capitalists of the first sector return these \$200 million to buy 200I*s*. If this operation is repeated twice, the capitalists of the second sector buy 400II*c* and the capitalists of the first sector 400Is, altogether worth \$800 million, with M_3^c of \$200 million which are used four times as means of purchase. Hence, $\mu_3^c = 0.25$.

Still to be dealt with is the exchange of 100II*c* for 100I*s*. The capitalists of the first sector must spend some M_3^s out of their consumption funds to mediate this transaction. Suppose that they spend \$50 million twice, and the capitalists of the second sector return them twice. Then $M_3^s = 50 = \mu_3^s 200$, and $\mu_3^s = 0.25$. It has been assumed that in the exchange of 500II*c* for 500I*s*, the exchange of 400II*c* for 400I*s* was accomplished by money issuing from the second sector, and the exchange of 100II*c* for 100I*s* was taken care of by money issuing from the first sector. This assumption will be written as $\theta_{II} = 0.8$, $\theta_I = 1 - \theta_{II} = 0.2$.

Thus, the total money necessary to circulate commodities worth \$8,500 million is \$3,025 million with the average μ of 0.378.

$$\left\{\begin{array}{rrcrcrcl} & (1850) & & (800) & & (1000) & & (50) \\ \text{I.} & 5500 & = & 4000c & + & 1000v & + & 500s, \\ \text{II.} & 3000 & = & 1500c & + & 750v & + & 750s. \\ & (1175) & & (200) & & (750) & & (225) \end{array}\right. \qquad (5')$$

This calculation assumes $\mu_1 = 0.2$, $\mu_2^v = 1$, $\mu_2^s = 0.3$, $\mu_3^v = 0.5$, $\mu_3^c = \mu_3^s = 0.25$ and $\theta_I = 0.2$.

* * *

Even under the condition of simple reproduction, gold coins in circulation tend to be abraded or lost. Therefore, the production of new money to make up for the depleted stock of gold must be explained in the scheme. Although gold is produced in the first sector, it must be distinguished from means of production proper. When monetary gold is produced, however, it is set aside from the reproduction system because it cannot be consumed either directly or productively. In this sense it is *faux frais* to society, as has been pointed out. Yet, its production constitutes a crucial step towards real accumulation.

Suppose that m_1 and n_1 are the production of gold to make up for that which is abraded in the first and the second sector, respectively. Then we have

$$\begin{cases} u_1 = c_1 + v_1 + s_1'' + m_1 + n_1, \\ u_2 = c_2 + v_2 + s_2' + m_2, \\ c_2 = v_1 + s_1'', \qquad m_2 = n_1. \end{cases} \tag{6}$$

Here, $s_1'' = s_1 - m_1 - n_1$ represents the surplus value embodied in means of production proper; and m_2 represents value embodied in consumption-goods for the capitalists of the first sector. Thus, the capitalists of the first sector consume $s_1' = s_1'' + m_2 = s_1'' + n_1$ but not m_1. The capitalists of the second sector consume s_2' but not $m_2 = n_1$. The production of monetary gold $m_1 + n_1$, therefore, causes a deduction from the consumption of surplus value in both sectors. That means

$$c_2 \,(= v_1 + s_1'') < v_1 + s_1, \tag{7}$$

or that the condition of expanded reproduction is already satisfied. Here, the surplus value actually produced, $s_1 + s_2$, is already more than is sufficient for the consumption of the capitalists, and the system can afford the luxury of producing "inconsumable" money, $m_1 + n_1$.

Consider the scheme,

$$\left\{\begin{array}{rrcrcrcrl} & (1850) & & (800) & & (1000) & & (50) & m_1+n_1 \\ \text{I.} & 5500 & + 20 = & 4000c & + & 1000v & + & 500s'' & + 20, \\ \text{II.} & 3000 & = & 1500c & + & 750v & + & 740s' & + 10, \\ & (1172) & & (200) & & (750) & & (222) & m_2 \end{array}\right. \qquad (5'')$$

which includes $m_1 + n_1 = 20$ ($m_2 = n_1 = 10$) in s_1. Then $s_1'' = s_1 - m_1 - n_1 = 500$ is embodied in the means of production, and $s_1' = s_1'' + n_1 = 510$ may be exchanged for articles of consumption. Also $s_2' = s_2 - m_2 = s_2 - n_1 = 740$ may be consumed by the capitalists of the second sector. What they do not consume, i.e. m_2 will be transferred to the first sector in exchange for the new gold n_1. With regard to the production of non-monetary commodities, this scheme is exactly the same as (5'). Of the existing means of circulation of $3,022 million, however, $20 million are currently abraded and are made good by the production of the same amount of new gold. If we take the gold production into account, the inter-sectoral constraint is

$$\text{II}c = 1500 < 1520 = \text{I}(v + s),$$

which is as in (7).

The assumption so far has been that $m_1 + n_1$ is produced strictly to make up for the abraded monetary gold. Such an assumption, however, is by no means necessary. If capitalists contemplate accumulation and make monetary savings, a corresponding amount of money disappears from the sphere of active circulation as if it had been abraded. That should stimulate the production of $m_1 + n_1$, even if there is in fact no abrasion of coins. In that case m_1 and m_2 will form accumulation-funds in the two sectors awaiting opportunities for real investment.

The first condition for the accumulation of capital, therefore, is the production of monetary gold which may be kept outside the reproduction-scheme for some time, pending its growth into an adequate magnitude. For accumulation to be really possible, however, additional means of production and labour-power must be there to be mobilised. Let us assume that the extra-supply of money $m_1' + n_1'$ which is needed to circulate additional commodities is currently produced, rather than drawn from the previously accumulated pool of gold. Then we have

$$\begin{cases} u_1 = c_1 + v_1 + c_1' + v_1' + s_1'' + m_1' + n_1', \\ u_2 = c_2 + v_2 + c_2' + v_2' + s_2' + m_2', \\ c_2 < v_1 + s_1' + (c_1' + v_1' + m_1'). \end{cases} \tag{8}$$

This must be re-arranged to

$$\begin{cases} u_1 = c_1'' + v_1'' + s_1'' + m_1' + n_1', \\ u_2 = c_2'' + v_2'' + s_2' + m_2', \\ c_2'' = v_1'' + s_1'', \qquad m_2' = n_1', \end{cases} \tag{8''}$$

to begin accumulation.

For numerical illustration let us take (2) as our example. The truncated form of (2) is (5), and we have already calculated in (5′) the money needed to circulate all components of the scheme. That much money can, therefore, be assumed to exist prior to accumulation. The question then is how the remaining $\bar{s}_1 = 500$ and $\bar{s}_2 = 0$ may be circulated in such a way as to re-arrange (2) properly for accumulation.

* * *

Let us approach this problem as usual in three parts. (i) First, consider the circulation of c_1''. Since the circulation of c_1 is already settled, we only need to account for the circulation of the difference c_1'. It is, however, obvious that $\mu_1 c_1'$ must come from m_1'. (ii) Secondly, consider the circulation of $v_2'' + s_2'$. Since the circulation of $v_2 + (s_2 - \bar{s}_2)$ is already accounted for, there remains only $v_2' + (s_2' - s_2 + \bar{s}_2)$ to consider. For the circulation of v_2' we clearly need $\mu_2^v v_2'$ out of m_2'. Now, $s_2' - s_2 + \bar{s}_2 \equiv \bar{s}_2 - (c_2' + v_2' + m_2')$. Therefore, $\mu_2^s (s_2' - s_2 + \bar{s}_2) \equiv -\mu_2^s (c_2' + v_2' + m_2' - \bar{s}_2)$ must also be paid out of m_2'. (iii) Finally, consider the exchange of c_2'' for $v_1'' + s_1''$. In simple reproduction the exchange of c_2 for $v_1 + (s_1 + \bar{s}_1)$ is already accomplished. Thus, only the exchange of c_2' for $v_1' + (s_1'' - s_1 + \bar{s}_1)$ remains to be looked after. It is clear that $\mu_3^v v_1'$ should come from the first sector. The remaining exchange $c_2' - v_1'$ for $s_1'' - s_1 + \bar{s}_1$ shall be so arranged that $\theta_I (s_1'' - s_1 + \bar{s}_1) \times 2$ is circulated by money originating in m_1' and $\theta_{II} (s_1'' - s_1 + \bar{s}_1) \times 2$ is circulated by money originating in m_2'.

The above is stated more concisely as

$$\begin{cases} m'_1 = \mu_1 c'_1 + \mu_3^v \nu'_1 \times 2 \\ \qquad + \mu_3^s \theta_I \, (s''_1 - s_1 + \bar{s}_1) \times 2, \\ n'_1 = m'_2 = \mu_3^c \theta_{II} \, (s''_1 - s_1 + s_1) \times 2 + \mu_2^v \nu'_2 \\ \qquad - \mu_2^s \, (c'_2 + \nu'_2 + m'_2 - \bar{s}_2). \end{cases} \tag{9}$$

If we recall our previous assumptions: $\mu_1 = 0.2$, $\mu_2^s = 0.3$, $\mu_3^v = 0.5$, $\mu_3^c = \mu_3^s = 0.25$, $\mu_2^v = 1$, $\theta_I = 0.2$, and consider $c'_2 = \nu'_1 + (s''_1 - s_1 + \bar{s}_1)$, $c'_1/\nu'_1 = c_1/\nu_1 = 4$ and $c'_2/\nu'_2 = c_2/\nu_2 = 2$, we may write both m'_1 and m'_2 as expressions of c'_1 and s''_1 only. That is,

$$\begin{cases} m'_1 = 0.45c'_1 + 0.1s''_1 - 50, \\ 1.3m'_2 = 0.0125c'_1 + 0.45s''_1 - 225. \end{cases}$$

If we further take into consideration the fact that $\alpha_1 s_1 = c'_1 + \nu'_1 + m'_1$ and $(1 - \alpha_1)\, s_1 = s''_1 + n'_1$, and assume a particular number for α_1, we get two equations in s''_1 and c'_1 which we can solve to find all the values we need.

If $\alpha_1 = 0.5$, the two equations come to

$$\begin{cases} 550 = 1.7c'_1 + 0.1s''_1, \\ 875 = 0.0125c'_1 + 1.75\, c''_1. \end{cases}$$

Solving them, and from other relations, we obtain

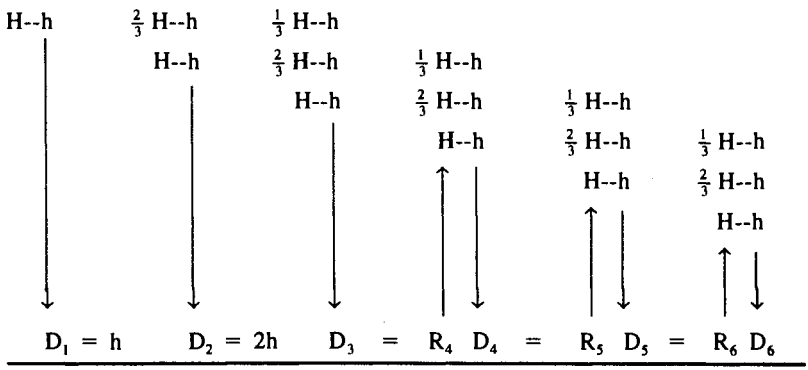
$$\begin{aligned} s''_1 &= 497.90,\ c'_1 = 294.24,\ \nu_1 = 73.56,\ m'_1 = 132.20, \\ s'_2 &= 640.71,\ c'_2 = \ 71.46,\ \nu'_2 = 35.73,\ m'_2 = \ 2.10, \end{aligned}$$

and, in this light, we can now re-arrange (2) to

$$\begin{array}{lllll} (1982.20) & (858.85) & (1073.56) & (49.79) & (m_1) \qquad (n_1) \\ \text{I. } 6000 = & 4294.24c'' + & 1073.56v'' + & 497.90s'' + & 132.20 + 2.10, \\ \text{II. } 3000 = & 1571.46c'' + & 785.73v'' + & 640.72s' + & 2.10. \\ (1177.10) & (199.16) & (785.73) & (192.21) & (m'_2) \end{array} \tag{10}$$

The quantity of money necessary for the circulation of each value component is calculated with the same μ's and θ's as before. In comparison with (5′) above it can be seen that the quantity of money that the first sector requires ($1,982.20 million) is greater than in the case of simple reproduction ($1,850 million) by exactly m_1 = $132.20 million;

Table 6.3



and the quantity of money that the second sector now requires ($1,177.10 million) is greater than in the case of simple reproduction ($1,175 million) by exactly m_2 = $2.10 million.

If e = 100 per cent is maintained, (10) will produce s_1 = 1073.56 and s_2 = 785.73 by the end of this year, satisfying the condition of expanded reproduction.

$$\begin{cases} \text{I. } 6441.36 = 4294.24c + 1073.56v + 1073.56s, \\ \text{II. } 3142.92 = 1571.46c + 785.73v + 785.73s. \\ \text{IIc} = 1571.46 < 2147.12 = \text{I}\,(v + s). \end{cases} \tag{11}$$

This scheme can now be truncated at $s_1 - \bar{s}_1$ = 497.90 (= s_1'' of the previous year) and $s_2 - \bar{s}_2$ = 640.71 (= s_2'' of the previous year). Then the truncated system already possesses its necessary means of circulation ($3,159.3 million). The additional money required for the circulation of $\bar{s}_1$ = 575.66 and $\bar{s}_2$ = 145.02 can now be calculated in the same way as before. That is to say, the reproduction-scheme always generates, from within itself, the necessary means of circulation.

6.2.3 The Problem of Fixed Capital

So far, fixed capital has been neglected. Although the presence of fixed capital can be sorted out quite easily in simple reproduction, it causes complicated problems in the expanded reproduction-schemes. Indeed,

Table 6.4

0th year	*1st year*	*2nd year*	*3rd year*
Accumulating firm ⇒	H------h	$\frac{2}{3}$ H-------h	$\frac{1}{3}$ H---h
	↑ ↓	H-------h	$\frac{2}{3}$ H---h
		↑ ↓	H---h
			↑ ↓
D_0 =	R_1 D_1 =	R_2 D_2 =	R_3 $D_3 = R_4$
↑	↑	↑	
$\frac{1}{3}$ H----h			
$\frac{2}{3}$ H----h	$\frac{1}{3}$ H---h		Decumulating
H----h	$\frac{2}{3}$ H---h	$\frac{1}{3}$ H-------h	⇐ firm

it is the presence of fixed capital that takes the theory of the schemes to its limit. Let us investigate in the following how that might be.

For definiteness it will be assumed that fixed capital is represented by standard machines, each of which lasts for 3 years only. The value of the machine is denoted by H, one-third of which $h = \frac{1}{3} H$ is transferred to the new product every year. This amount also constitutes the annual addition to the depreciation-fund. Assume no price fluctuation and consider a single firm which invests one machine every year. Table 6.3 shows what happens to the firm in the first six years.

On the left-hand side of each column, which represents a year, is the existing value structure of fixed capital. On the right-hand side is indicated the annual addition to the depreciation-fund, D_i, of the i-th year. In the fourth year the replacement, R, of the worn-out machine begins. The total depreciation-fund accumulated up to the third year is $D_1 + D_2 + D_3 = 6h$, but the replacement cost, $R_4 = H$, is equal to $D_3 = 3h$. The remainder, $D^* = D_1 + D_2 = 3h$, does not seem to serve any useful purpose, although its significance will be discussed later. For the moment, it suffices to note that D^* arises only when capital is accumulated "from scratch". Therefore, if a condition of simple reproduction *in society* is assumed, each time one firm accumulates capital there must be another which is decumulating by a corresponding amount. The two firms taken together must contribute $3h$ to D_1 and D_2 which serve as R_1 and R_2 in the accumulating firm. This is shown in Table 6.4.

The present analysis can be easily generalised, and summarised by the statement that under simple reproduction (of the scheme) the net formation of depreciation-fund, $\bar{D}$, in society at the end of any year, t, is always equal to the social requirement of funds for the replacement, $\bar{R}$, of worn-out equipment at the beginning of year $t + 1$. If society as a whole maintains a stationary fixed capital structure such as $(\frac{1}{3}\bar{H}, \frac{2}{3}\bar{H}, \bar{H})$, only $\bar{H}$ has to be produced and circulated in the same way as circulating capital. (Here, I use the bars on top of symbols, when I refer to society rather than to an individual firm. However, I shall omit them, in what follows, whenever reference to society rather than to an individual firm is obvious.)

Consider the following reproduction-scheme.

$$\left\{\begin{aligned} \text{I. } 5500 &= (900h + 3100z)c + 1000v + 500s, \\ \text{II. } 3000 &= \quad 1500c \quad + 750v + 750s, \\ \text{II}c &= 1500 = \text{I}(v + s), \\ H &= 2700, \end{aligned}\right. \tag{12}$$

where h is the value of fixed capital, and z that of circulating constant capital, currently transferred from the mean of production to the product. We may assume that each machine is of one value unit, so that $900h$ may be viewed as representing 900 machines. We also assume, for simplicity, that no fixed capital is used in sector II, but that in the first sector there exists the stock of capital, $H = 2700$, consisting of 900 two-year-old machines (of which 600 value units are already in the depreciation-fund), 900 one-year-old machines (of which 300 value units are in the depreciation-fund) and 900 new machines.

As before, the circulation of commodities and the counter-flow of money must be considered in three phases. However, since the circulation of $v_2 + s_2$ and the exchange of c_2 for $v_1 + s_1$ do not involve any fixed capital, only the internal circulation of $c_1 = h_1 + z_1$ in the first sector need be examined; and even there the circulation of z_1 is already settled.

The first sector possesses 2,700 machines, each of which embodies one value unit. Of these 2,700 machines, 900 are annually worn out and must be reproduced. In order to circulate the 900 newly produced machines, the first sector must possess as much money as $M_1^h = \mu_1^h$ 900, quite separately from $M_1^z = \mu_1^z z_1$ which has already been accounted for as $M_1 = \mu_1 c_1$. The purchase price of the 900 new machines, which

Table 6.5

1st year	*2nd year*	*3rd year*	*4th year*	*5th year*	*6th year*
H----h_1	$\frac{2}{3}H_1$--h_1	$\frac{1}{3}H_1$--h_1			
	H_2--h_2	$\frac{2}{3}H_2$--h_2	$\frac{1}{3}H_2$--h_2		
		H_3----h_3	$\frac{2}{3}H_3$--h_3	$\frac{1}{3}H_3$--h_3	
			H_4----h_4	$\frac{2}{3}H_4$--h_4	$\frac{1}{3}H_4$--h_4
				H_5--h_5	$\frac{2}{3}H_5$--h_5
					H_6--h_6
D_1	D_2	D_3	$> R_4$ D_4	$> R_5$ D_5	$> R_6$ D_6
			$= H_1$	$= H_2$	$= H_3$

is equal to the replacement expenditure R, can be obtained only when the same 900 new machines are already sold and the depreciation-fund, D, of the same magnitude is formed. The question is, which capitalist can buy the first machine before selling his own? Clearly, some capitalists must possess initial funds, quite separately from the current $D = R$.

It is this money that must be found in $D^* = \{\frac{1}{2}t(t+1) - t\}h$, i.e. in the depreciation-fund accumulated up to the t-th year when, finally, the relation $D_t = R_{t+1}$ is established. In the present case, it is assumed that $t = 3$. Therefore, $D^* = 6h - 3h = 3h$. Even though society is currently in a state of simple reproduction and satisfies the relation $D_t = R_{t+1}$, the present scale of its operation must have resulted from past accumulation, during which it must have acquired D^*. This D^* can be used to purchase $900h$, since $D^* > H$ if $t > 3$. In fact, not all of D^* is needed. Once a few machines are sold for M_1^h, it can circulate $1/\mu_1^h$ times to complete the circulation of all machines. The unused part of D^* can always be converted into loan-capital as will be seen later.

* * *

To investigate a case of expanding reproduction, let us first consider a single firm which invests in one machine every year, and suppose also that the machine grows a little in size and value annually: $H_t < H_{t+1}$. If we further assume that the durability of the machine is exactly 3 years, we see in Table 6.5 what will happen to the firm in the first six years. At time t, the machine value invested three years ago must be

replaced: $R_t = H_{t-3}$. But, in each year, the depreciation-fund formed in the previous year is greater than the replacement need: $D_{t-1} > R_t$, and the value of the machine currently purchased is even greater than the depreciation-fund available, $H_t > D_{t-1}$, for any year after the third, $t \geqq 3$.

If we assume, in particular, that $H_t = H_0(1 + g)^t$ with some constant rate $g > 0$, we have

$$D_t = \frac{H_0(1 + g)^{t-2}(3 + 3g + g^2)}{3}$$

$$R_{t+1} = H_0(1+g)^{t-2}$$

so that

$$\frac{R_{t-1}}{D_t} = \frac{3g}{(1 + g)^3 - 1}$$

$$\lim_{g \to 0} \frac{R_{t-1}}{D_t} = 1$$

This relation is the same as the formula derived by Domar for the general case, where the durability of fixed capital 3 is replaced by n (E.D. Domar, *Essays in the Theory of Economic Growth* (Oxford University Press, New York, 1957) p. 161).

In Table 6.5 the age composition of fixed capital after the third year is always $(\frac{1}{3}H_{t-2}, \frac{2}{3}H_{t-1}, H_t)$ where $H_{t-2} < H_{t-1} < H_t$. The replacement value, $R_{t+1} = H_{t-2}$, is always smaller than depreciation $D_t = \frac{1}{3}(H_{t-2} + H_{t-1} + H_t)$. Only under simple reproduction is depreciation equal to $H_{t-2} = H_{t-1} = H_t$.

The same argument holds if the age composition of capital is expressed in terms of the larger or smaller machine sizes, or in terms of the greater or lesser number of machines of the same size. For example, let us suppose that the replacement value of the standard machine is always equal to one, and that the number of machines (rather than the size of the machine) employed varies from time to time, always assuming that the standard machine transfers one-third of its value to the new product annually. Then there are three cases to distinguish from one another.

Case I ($D_t = R_{t+1}$)

Capital structure		*Depreciation*
900	2-year-old machines = R_{t+1}	300
900	1-year-old machines	300
900	New machines	300
2700		$D_t = 900$

In this case the structure of capital will be called "simple".

Case II ($D_t < R_{t+1}$)

Capital structure	*Depreciation*
1050 2-year-old machines = R_{t+1}	350
900 1-year-old machines	300
900 New machines	300
2850	D_t = 950

In this case the structure of capital will be called "backward-weighted".

Case III ($D_t > R_{t+1}$)

Capital structure	*Depreciation*
900 2-year-old machines = R_{t+1}	300
900 1-year-old machines	300
1050 New machines	350
2850	D_t = 950

In this case the structure of capital will be described as "forward-weighted".

It is clear that a simple reproduction is consistent only with the "simple" age composition (or age structure) of fixed capital. It is also obvious that a "forward-weighted" age structure arises with accumulation, and a "backward-weighted" one with a contracting reproduction. The reason why a simple reproduction-scheme presents no problem with fixed capital is that its age composition remains simple. Since an expanded reproduction-scheme always involves a forward-weighted structure, a certain complicated problem arises, which will be studied next.

* * *

Suppose that the following scheme represents the state of reproduction as of 30 September last year.

$$\begin{cases} \text{I. } 6000 = (900h + 3100z)c + 1000v + 1000s, \\ \text{II. } 3000 = 1500c + 750v + 750s, \\ \text{II}c = 1500c < 2000 = \text{I}(v + s), \\ H = 2700. \end{cases} \tag{13}$$

Truncate this scheme to (12) by removing $\bar{s}_1 = 500$ from s_1, and $\bar{s}_2 = 0$ from s_2. Replace $\mu_1 = 0.2$ by $\mu_1^h = 0.25$ and $\mu_1^z = 0.2$, but otherwise apply the same μ's and θ's as before. Then the quantity of money

necessary to circulate all components of (12) can be calculated as follows.

$$\begin{array}{lccccc} & (1895) & (225) & (620) & (1000) & (50) \\ \text{I.} & 5500 = & (900h + 3100z)c & + & 1000v & + 500s, \\ \text{II.} & 3000 = & 1500c & + & 750v & + 750s. \\ & (1175) & (200) & & (750) & (225) \end{array} \qquad (12')$$

Now let us suppose that $s_1 - \bar{s}_1 = 500$ contains new machines of a value of 150. Provided that enough money is generated in the system to circulate them, as well as to circulate 900 machines to replace the two-year-old machines which will not be available this year, the stock of machines will increase to $H = 2850$. It can be shown (i) that such money can be found; (ii) that (13) can be re-arranged to commence accumulation this year at the rate of 5.56 per cent; and (iii) that one-third of the 150 new machines, if installed last year, will be depreciating by the end of September this year.

Let $h_1' = 50$, $z_1' = 172.2$, $v_1' = 55.6$. These imply that (13) will be growing at the rate of 5.56 per cent this year. However, let $\alpha_1 1000 = 150 + z_1' + v_1' + m_1'$ and $(1 - \alpha_1)s_1 = s_1'' + n_1'$. Make the substitution $\mu_1 c_1' = \mu_1^h h_1' + \mu_1^z z_1'$ in (9) to determine m_1' and $m_2' = n_1'$. Then we get the following numbers:

$$\begin{aligned} \alpha_1 = 0.412,\ s_1'' = 563.98,\ m_1' = 133.94,\ m_2' = 24.28, \\ s_2' = 546.35,\ c_2' = 49.58,\ v_2' = 59.79. \end{aligned}$$

These numbers now enable the re-arrangement of (13) as

$$\begin{array}{lccccccc} & (2003.9) & (251.5) & (654.4) & (1055.6) & (56.4) & (m_1') & (n_1') \\ \text{I.} & 6000 = & (950h'' + 3272.2z'')c'' & + & 1055.6v'' & + 5645s'' & + 133.94 & + 24.28, \\ \text{II.} & 3000 = & 1619.58c'' & + & 809.79v'' & + 546.35s' & + 24.28. & \\ & (1199.3) & (225.6) & & (809.79) & (163.91) & (m_2') & \end{array} \qquad (13')$$

In comparison with (12'), we find that the second sector now needs \$1,199.3 million instead of \$1,175 million for the circulation of its components, and the difference, \$24.3 million, is being newly produced in the first sector as n_1. The first sector now requires \$2,003.9 million instead of \$1,895 million. The difference, \$108.9 million, can

be paid out of the newly produced $m_1' = 133.9$. That leaves a surplus of \$25 million, which was contained in $s_1 - \bar{s}_1 = 500$. The money to circulate the remainder, 50 machines which are depreciating this year, is already included in the money that circulates h''.

If the rate of surplus value continues to be $e = 1$, the scheme will become, by the end of September this year, the following:

$$\left\{\begin{array}{l} \text{I } (+5.56\%) \,.\, 633.4 = (950h + 3272.2z)c + 1055.6v + 1055.6s, \\ \text{II } (+7.97\%) \,.\, 3239.16 = 1619.58c \quad + 809.79v + 809.79s, \\ \qquad \text{II}c = 1619.58 < 2111.2 = \text{I}(v + s), \\ \qquad H = 2850. \end{array}\right. \tag{14}$$

In this scheme, however, $950h$ means two things. On the one hand, it means that one-third of the existing $H = 2850$ has transferred that much value to the new product. On the other, it also means that 950 machines are being reproduced to replace two-year-old machines that are wearing out (quite apart from any more new machines that may be included in s_1 for the purpose of further accumulation). If so, the problem is that there are, in fact, only 900 two-year-old machines which are wearing out this year. The 150 machines installed last year have depreciated and lost one-third of their value. They are still only one-year-old and no fraction of them need as yet be replaced with new machines. In the meantime, we have already ensured that there is no shortage of money to circulate the extra 50 machines. These extra machines, therefore, will presumably be bought and installed somewhere during the last quarter of this year, and the stock of machines by the year end will be $H = 2900$, instead of $H = 2850$ which was the case at the beginning of this year.

That, however, is quite strange, since no conversion of surplus value into capital has as yet taken place this year. (We have not even ascertained how many new machines for accumulation are included in $s_1 = 1055.6$ of the first sector.) Yet prior to any consideration regarding the disposition of surplus value for accumulation, the stock of machines would increase by 50! Since accumulation did occur last year, we can see that the age composition of capital changed from "simple" to "forward-weighted," i.e. from Case I to Case III above. That, of course, is not strange. What is strange is that this year, quite apart from any further accumulation, i.e. conversion of surplus value into capital (which may yet to take place), the stock of capital increases to 2,900, with the following age composition:

Case III′ ($S_t > R_{t+1}$)

Capital structure	*Depreciation*
900 2-year-old machines = R_{t+1}	300
1050 1-year-old machines	350
950 New machines	317
2900	D_t = 967

The fact that 150 new machines were added to the stock last year entails the addition of 50 more this year automatically, i.e. strictly as an after-effect of a once-and-for-all accumulation in the previous year.

The reason for this phenomenon is that the accumulation last year has changed not only the number of machines but also the age structure of capital, from "simple" to "forward-weighted". If indeed the 150 machines added to the stock last year consisted of 50 second-hand, two-year-old machines, 50 second-hand, one-year-old machines, and 50 new machines, the age structure would not have changed. In that case, no problem would have occurred, since $D_t = R_{t+1} = 950$ would hold, with no surplus or deficit machines. In the present case (Case II above), the inequality $900 = R_{t+1} < D_t = 950$ of last year gives rise to 50 surplus machines.

However, if these surplus machines are added to the stock (Case III′ above) this year, then the inequality $900 = R_{t+1} < D_t = 967$ will give rise to 67 surplus machines again next year, even if no other new machines are found in this year's surplus value. Let us assume that, from this year onward, there is no genuine accumulation, but that D_t is always invested regardless of R_{t+1}. Then we shall have $R_{t+1} < D_t$ in some years and $R_{t+1} > D_t$ in some others; but the number of machines in surplus and in deficit will gradually decline and in six to seven years the age structure of capital will revert to "simple" with $975 = R_{t+1} = D_t$. Therefore, 75 surplus machines are given to the capitalists permanently and "free of charge", for having accumulated 150 machines in one year.

What should we make of this strange phenomenon? Does this mean that "capital" too has value-productivity, so that the labour theory of value turns out to be one-sided after all? Or does it constitute a fundamental cause of the instability of capitalism? To my mind, it is neither. It seems to me that the complication arises from the very nature of fixed capital, which always has a two-fold character. On the one hand, it is man-made means of production which wears out regularly and must be reproduced. On the other, it approaches natural means of production as its durability becomes greater, so that it need not be

replaced every year, or even over many years. Thus, if 150 machines accumulated in one year transfer one-third of their value to the product, that product takes the form of 50 new machines which are not needed to replace worn-out machines. It is as if 150 machines could, without losing their value, create 50 more machines free of cost, i.e. like the "gratuitous service" of natural means of production. It is as if they participate in the production-process of capital as use-values only, and not as value-objects, that is to say, like "good weather".

Marx himself appears to have been aware of this problem (*Capital*, I, p. 569). However, the idea comes out more clearly in K. Wicksell who claimed: "Goods of greater durability cannot be treated as capital in the narrower sense, but, once they are there, must be placed in the same category as landed property itself" (*Value, Capital and Rent* (Allen & Unwin, London, 1954), p. 119).

In the reproduction-schemes, in which the reproducibility of capitalist society must be studied from the point of view of the circuit of commodity-capital, fixed capital can be treated only insofar as it renders no gratuitous service, its age composition remaining "simple". It is not the purpose of the schemes to explain every concrete detail pertaining to the capitalist economy. The purpose is well served when the reproducibility of all socially demanded goods as commodities is confirmed. The special problem of fixed capital that has arisen reveals the abstract nature of the schemes and their limitations. We must now go beyond the schemes to see how the problem of fixed capital may be solved in the actual process of capital accumulation.

6.3 THE ACTUAL PROCESS OF CAPITAL ACCUMULATION

6.3.1 The Organic Composition of Capital

The expansion of the capitalist production-relation has so far been studied as depending on the natural growth of the working population. Even though the law of value sees to it that additional means of production, additional wage-goods, and additional monetary gold can all be produced whenever capital prepares for accumulation, the one crucial condition for it has not yet been confirmed. That is the supply of additional labour-power over and above that which the natural growth of the working population entails. Unless this supply is assured, the accumulation of capital cannot become "actual (*wirklich*)". It is by

introducing *innovation* in the technical method of production that capital tries to solve this problem.

An individual capitalist is, in principle, driven to innovate his method of production by the pursuit of extra surplus value. He cannot, however, pursue innovation without restrictions at all times. It can be shown that innovations tend to occur *in a cluster* during a particular phase of the recurring business cycles, i.e. of the cyclical accumulation-process of capital. The reason is that a technical method of production is usually embodied in fixed capital. If an improvement in the technical method of production has to do only with circulating constant capital, as in the use of better-quality raw materials or fuel, for instance, it will be immediately adopted by all capitalists. (Such non-economic restrictions as patent, licence, etc., will be ignored in the present context.)

Suppose that some better-quality motor oil is discovered and marketed as a new commodity. If its use substantially improves the operation of motors, all capitalists would promptly purchase it as a commodity, even if it costs significantly more than others, since the additional cost may well be compensated by increased efficiency. In such a case, extra surplus value hardly ever arises; for it is virtually costless for all capitalists immediately to adopt the use of the new motor oil. It will be otherwise when technical progress involves a physical alteration of fixed capital.

Fixed capital which embodies a particular technology must be depreciated over a lengthy span of time. A typical industrial plant may, for instance, take ten years or so before being fully depreciated. No capitalist enterprise can abandon the existing plant in the first few years of its operation, even if a more efficient method of production has been discovered, and is perhaps already adopted by some new firms. A large part of capital value advanced has not yet been recovered in the form of money, and hence cannot be simply discarded. Only when the sacrifice is small relative to the advantage of the new method, will the capitalist be prepared to abandon the unrecovered value of old fixed capital.

There are two reasons why the adoption of a new method becomes easier in the phase of depression that follows a crisis. *First*, many of the existing plants have by this time depreciated much of their value in the previous prosperity phase, and are left with a relatively small undepreciated portion of their capital value. *Secondly*, the disruption and contraction of the social reproduction-process occurring in this phase destroy both the value and the use-value of the presently advanced capital, be it in the form of commodities or in that of the means of

production. For these reasons the undepreciated value of the existing machine becomes virtually worthless in the phase of depression in any case. In particular, if the plant can be used only at half its capacity, the cost of maintaining the idling part can easily become prohibitive.

In order to show that the accumulation-process of capital periodically materialises the condition most suitable for a society-wide renovation of the plants, it is necessary to introduce the concept of the *organic composition* of capital, and to distinguish the two phases of capital accumulation: the one that involves no change in the organic composition and the other that involves a rise in it. The two phases may be called the "widening" phase (or extensive accumulation) and the "deepening" phase (or intensive accumulation), respectively.

* * *

As Marx says, the most important factor that relates the accumulation of capital with the working class is the composition of capital (*Capital*, I, p. 574). The *value composition* of capital c/v insofar as it reflects the *technical composition* of capital is called the *organic composition*. The technical composition, however, is not a directly measurable ratio. It refers vaguely to the state of technology, or to the "roundaboutness" of the method of production. Since the means of production as a whole is a medley of various items, it is not possible to say how much labour is needed to operate a particular item of the means of production, taken separately. The closest approximation would be the ratio of living labour $(v + s)$ to dead, or stored-up, labour (c). In the production of cotton yarn, for example, the quantity of spinning labour may be contrasted to all forms of labour already embodied in raw cotton, spinning machines, etc., provided that all these forms of labour are reduced to homogeneous abstract labour. Since,

$$k^* \equiv \frac{c}{v} \equiv (1 + e)T, \qquad T \equiv \frac{c}{v + s},$$

we may define T to be the technical composition of capital. Thus, if the value composition of capital, c/v, is viewed as depending on T rather than on e, we may call it the organic composition of capital, $k^*(\bar{e}, T)$.

The organic composition may also be defined with respect to the aggregate-social capital, in which case we must assume not only a given rate of surplus value but also a given structure of social demand. For example, let c/v in

agriculture be 1 and that in non-agriculture be 2. Then the organic composition of the aggregate-social capital varies between 1 and 2, depending on how "agricultural" or "industrial" the society is.

If fixed capital is involved, the organic composition, C/v, which allows for the whole value of fixed capital and the organic composition, c/v, which allows only for the currently transferred value of fixed capital must be distinguished. Let H stand for the whole value of fixed capital, and h for its current depreciation. Further, if z stands for the value of circulating capital, we have

$$k = \frac{H + z}{v} = \frac{C}{v} \quad \text{and} \quad k^* = \frac{h + z}{v} = \frac{c}{v}.$$

If γ and n are defined by $H = \gamma z = nh$, we also have

$$k = \left[\frac{(\gamma + 1)n}{\gamma + n}\right] k^*,$$

so that k and k^* change by the same proportion, only when the stock-to-flow ratios γ and n are held constant.

These coefficients, however, cannot always be held constant in the actual process of capital accumulation. In the phase of stagnation considerable excess capacity occurs usually, and in prosperous times the existing capacity is operated more extensively and depreciated more quickly. Fixed capital, H, does not usually increase or decrease together with output. Therefore, extensive accumulation, which does not involve a rise in the organic composition of capital, can only imply the constancy of k^*, but not of k. Marx says that "by constant capital advanced for the production of value we always mean, unless the context is repugnant thereto, the value of the means of production actually consumed in the process, and that value alone" (*Capital*, I, p. 205). If, however, k^* is constant, while both γ and n fall in a business upswing, then k is bound to fall in the course of extensive accumulation.

Such a phenomenon cannot be studied in the abstract context of the reproduction-schemes which, in any case, must assume the constancy of g and n. That confirms our earlier conclusion that the problems of fixed capital cannot be adequately dealt with within the context of the reproduction-schemes.

* * *

An industrial plant which typically lasts for ten years or so cannot be replaced as it is worn out. Only depreciation-funds can be accumulated for its eventual renewal. The value of the plant is, therefore, unilaterally transferred to the product, and there is no need for the capital-good sector annually to reproduce the worn-out portion of plants and equipment. From the point of view of annual reproduction, in other words, the plant of a given size may be taken as if it were a natural gift, even though we must continually add to its depreciation-fund. The capital-good sector can, therefore, concentrate on the production of circulating constant capital so as to enable the scale of reproduction to "widen". During the prosperity phase, new investments in circulating constant capital, rather than in fixed capital, sets the pattern of expansion. Only in the depression phase does intensive accumulation occur which then changes the technical method of production.

Marx, however, does not take the alternation of "widening" and "deepening" to be a cyclical phenomenon. He rather considers the widening to be typical of capital accumulation in the early period of capitalist development and the deepening to be more characteristic of its advanced historical phase. For instance, he says, "The accumulation of capital, though originally appearing as its quantitative extension only, is effected under a progressive qualitative change in its composition" (ibid., p. 589), once capitalism reaches a certain stage of its development. Because of this view, he further believes that "the labouring population produces, along with the accumulation of capital produced by it, the means by which itself is made relatively superfluous, is turned into a relative surplus population; and it does this to an always increasing extent" (ibid., p. 591). In other words, the law of population peculiar to capitalism represents, according to Marx, a unilateral formation of relative surplus population.

If, however, capitalism always raised the organic composition of capital (in the sense of k^*), and therefore generated a relative surplus population continuously, it would not be possible for capitalism to organise a whole society according to its own principles. There would then be an increasing mass of capitalistically unemployable direct producers at all times. Moreover, if productive workers were always available at or near a subsistence wage, there would hardly be any reason why capitalist accumulation should involve innovation of the existing technology, and go through a cyclical process. It does not make good economic sense to say that capital introduces technical progress and raises its organic composition, only for the joy of producing an ever-increasing

mass of capitalistically unemployable workers.

What we have to show instead is that there is a limit to any period of extensive accumulation, and that, once the limit is reached, an intensive accumulation, which raises the organic composition of capital, becomes unavoidable. In the following subsection we shall restate the theory of capital accumulation in this way, and reinterpret the law of population peculiar to capitalism in a more defensible manner.

6.3.2 The Cyclical Accumulation of Capital

The accumulation of capital means a conversion of surplus value into capital. This conversion, however, cannot be effected unless additional means of production are already available in a suitable form, i.e. in a form capable of integrating additional labour-power into variable capital. First, consider "widening" or extensive accumulation, presupposing the existence of fixed capital that embodies a particular technology. Write the rate of accumulation or the aggregate propensity to save as follows.

$$\alpha = \frac{\Delta C + \Delta V}{S} = \frac{(1 + k^*)\,\Delta V}{S} = (1 + k^*)\,\alpha_v$$

where C, V and S are, respectively the constant-capital component, variable-capital component and surplus-value component of the output of the aggregate-social capital. Then we have

$$\alpha_v = \frac{\alpha}{1 + k^*} = \frac{\Delta V}{S}. \tag{1}$$

The coefficient α_v, which indicates the ratio of additional variable capital to surplus value, falls for the same α, if k^* rises, although, in the course of extensive accumulation, k^* will be taken to remain constant. The desired rate of accumulation of (variable) capital is then written as

$$\frac{\Delta V}{V} = \frac{\Delta V}{S} \cdot \frac{S}{V} = \alpha_v e. \tag{2}$$

To this desired rate $\alpha_v e$ will be contrasted the natural rate of growth of the working population, written as g_n.

In general the two rates diverge from each other, i.e. $\alpha_v e$ is either

greater or smaller than g_n. If $\alpha_\nu e < g_n$, however, the unemployment of productive workers would keep increasing and the capitalist mode of production would never be able to organise the whole society under its principles. Therefore, it must be understood that $\alpha_\nu e > g_n$ in reality. If that is the case, then the demand for labour-power increases more rapidly than its supply, and wages must tend to rise while the rate of surplus value tends to fall. A fall in e means that S declines relative to V, but does not necessarily mean a fall in the absolute magnitude of S. Capital continues to accumulate so long as ΔS obtainable from ΔV is still positive. To see the limit of accumulation, let us introduce the dynamic relation

$$\Delta e = -\beta\,(\alpha_\nu e - g_n), \tag{3}$$

where $\beta > 0$ is some speed of adjustment.

From the definition of e we have

$$\Delta e = \frac{\Delta S \cdot V - S \cdot \Delta V}{V^2} = \frac{\Delta S}{V} - \alpha_\nu e^2 \tag{4}$$

Putting (3) and (4) together, we obtain the relation

$$\frac{\Delta S}{V} = \alpha_\nu e^2 - \alpha_\nu \beta e + \beta g_n \tag{5}$$

which is a quadratic equation in e possessing real roots, if and only if

$$\alpha_\nu \beta - 4g_n \geqq 0 \quad \text{or} \quad \beta \geqq \frac{4g_n}{\alpha_\nu}. \tag{6}$$

The satisfaction of (6) is interpreted to mean that the capitalist system is sufficiently flexible. In other words, we assume that the speed of adjustment, β, in (3) is sufficiently large so as to satisfy (6) with a strong inequality, and hence that the rate of surplus value is significantly affected by the gap between the demand for and the supply of labour-power.

It is obvious that capital accumulation is impossible if $\Delta S/V < 0$. Moreover, the slope of the parabola must be positive for accumulation to be possible, since (assuming $\Delta S/S$ to be independent of e)

$$\frac{d}{de}\left(\frac{\Delta S}{V}\right) = \frac{d}{de}\left(e\,\frac{\Delta S}{S}\right)$$

$$= \frac{\Delta S}{S} + e\,\frac{d}{de}\left(\frac{\Delta S}{S}\right) = \frac{\Delta S}{S} < 0$$

$$\text{and } \Delta S > 0$$

would imply that $S < 0$, which is out of the question. On the other hand, given the technology, there is always an upper limit to the production of absolute surplus value, so that $e^{0} = \max e$ exists. The path of accumulation must, therefore, follow the parabola on (e_{1}^{*}, e^{0}). This interval we shall call the feasible range of e.

* * *

If the length of the working day and the intensity of labour are more or less given, changes in the rate of surplus value will reflect the number of hours of labour devoted to the production of wage-goods. Therefore, (e_{1}^{*}, e^{0}) corresponds to a feasible range of real wage-rate $(w_{\min}, w_{\max})$. When a new plant embodying a particular technology is introduced in the recovery phase of business cycles, there will be an abundant supply of labour-power, and real wages will be rather close to $w_{\min}$, to which a high rate of surplus value, close to e^{0}, corresponds. As accumulation proceeds, gradually absorbing the existing supply of labour-power, the rate of surplus value will fall in response to the rising trend of wages as the increment of surplus value ΔS per worker declines.

In Figure 6.2 a point such as q moves along the parabola steadily approaching e_{1}^{*}. Once this critical point is reached, the value augmentation becomes completely aimless, and no further accumulation can take place.

This condition is known as the state of and "excess of capital". It is not necessary to imagine that all capitalist firms simultaneously reach the state of an excess of capital. If some firms in various important industries find themselves unable to make new investments, a chain reaction is set off, disrupting the normal operation of society's reproduction-process. A cumulative contraction of business imposes hardships on those firms which must leave a significant portion of their plant idle. Business bankruptcies will be widespread, but stronger firms will survive. This is the period of *centralisation* which involves the annexation of weaker capitals by the stronger. Thus, the winners of the competition expand their scale of operation more than is made possible by the mere *concentration* of capital through ordinary accumulation.

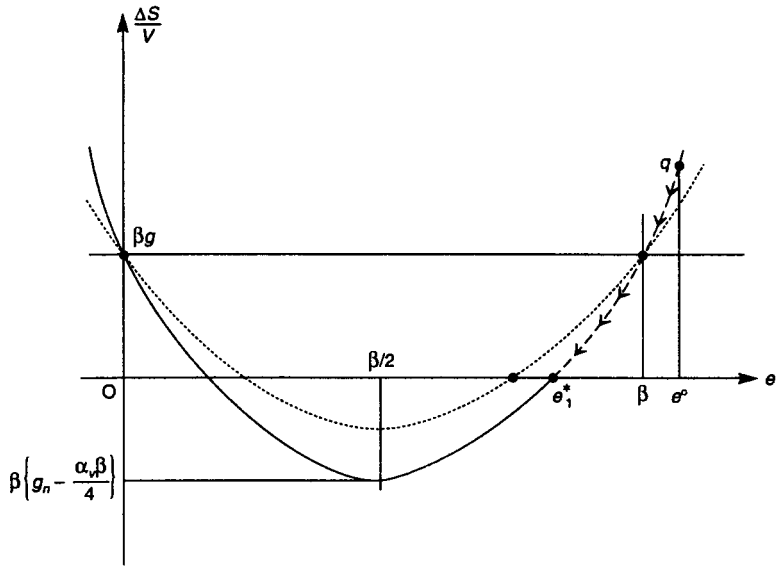


Figure 6.2

Unlike the concentration of capital, centralisation often involves contingent factors. Although some instances of centralisation occur in every depression period, the extent to which capital is in fact "centralised" cannot be logically determined. Moreover, capital which is once centralised may later be split into parts by "the division of property within capitalist families" (*Capital*, I, p. 586). Therefore, it is unwarranted to expect that every centralisation of capital necessarily leads to monopoly.

Investments in new plants tend to take place in this phase of the business cycle, and they tend to raise the organic composition of capital. Fixed capital which embodies a new technology is introduced. An absolute reduction in the demand for labour may not occur, but the proportion of variable capital to constant capital normally falls. For the technology that suits the need of capital at this juncture is the one which saves the input of labour-power relative to the means of production.

* * *

If technical progress raises the organic composition of capital in the sense of k^*, while the propensity to save remains constant, then the ratio $\alpha_v = \Delta V/S$, necessarily falls. Therefore, the rate of change of

the demand for labour-power, $\Delta V/V = \alpha_v e$, will be smaller than previously for any given rate of surplus value. That reduces the speed with which additional surplus value per worker, $\Delta S/V$, declines with a fall in the rate of surplus value.

For example, let α_v fall from 0.08 to 0.06, when $g_n = 0.05$. Suppose that $\beta = 4$, which satisfies (6) for both values of α_v. Then the lowest feasible rate of surplus value $e^*_\dagger$ falls from 3.225 to 2.816. The new parabola, like the dotted one in Figure 6.2, is more mildly curved than the old, and positioned above it between $e = 0$ and $e = \beta$, but reaching its minimum at $e = \beta/2$ as before. Thus, if β is unchanged, the critical rate of surplus value, $e^*_\dagger$, at which capital accumulation ceases is lower than previously.

There is, however, no reason why β should remain constant. If β rises, the new parabola bodily shifts to the right and generally increases the steepness of its slope, its minimum point moving below and to the right of the original position with unchanged β. Thus, the fall of $e^*_\dagger$ is not as drastic as it would be in the absence of a rise in β. If β rises too much, the possibility cannot be excluded for $e^*_\dagger$ to increase rather than to decrease.

A rise in β, however, is not a necessary consequence of technical progress. Although β as a measure of market sensitivity can always improve with the development of capitalism, it does not invariably advance because the organic composition of capital (k^*) rises. It is, therefore, reasonable to allow only for such a rise in β as would not cancel the fall of $e^*_\dagger$ when a lower α_v is adopted. If, for example, $\alpha_v = 0.06$ and $g_n = 0.05$, then β must not rise to and above 4.3437.

With this restriction on the speed of adjustment, β, it can now be stated that $e^*_\dagger$ falls and w_{max} rises every time the capitalist method of production improves. Every new technology that the aggregate-social capital adopts has a steadily improving maximum beyond which the real wage cannot rise.

6.3.3 The Value of Labour-Power

The theory of cyclical accumulation stated above enables us to reinterpret the law of relative surplus population peculiar to capitalism, and establishes the substantive meaning of the value of labour-power.

Marx says: "Every special historic mode of production has its own special law of population, historically valid within its limits alone. An abstract law of population exists for plants and animals only, and only insofar as man has not interfered with them" (*Capital*, I, p. 592). The

economic law of population that Marx has in mind clearly has little to do with an explanation of the natural growth rate of the working population (g_n). The latter is determined by biological, cultural and sociological factors, and must be taken to be given from the point of view of economic theory. The economic law of population has to do with the relationship between the exogenously given supply of labour-power and its employment in the reproduction-process of society.

In many societies the scale of reproduction cannot be expanded more rapidly than the rate at which population grows naturally, inasmuch as technical progress occurs there only by chance. It is otherwise in capitalist society. For the growth rate of its reproduction-process regularly exceeds the natural growth rate of its population, calling into operation the uniquely commodity-economic mechanism which compels capital to introduce new methods of production, and thereby to generate a *relative surplus population.* The law of relative surplus population peculiar to capitalism refers to this mechanism.

Because it cannot directly produce labour-power, capital must maintain a supply pool of this commodity in the form of a relative surplus population in order to continue accumulation. The "industrial reserve army" is another name for this supply pool of labour-power. The water level of the pool, however, cannot be maintained constant. As the actual process of accumulation alternates between "widening" and "deepening", the pool of relative surplus population is drained and replenished accordingly. Capital is not in the habit of generating absolute surplus population, i.e. surplus population which it can never employ.

So long as the supply of labour-power is plentiful, capital has no commodity-economic incentive to explore a new technology. Only when the supply of existing labour-power is about to be exhausted under the presently given technology do real wages rise sharply and that depresses profits. It is under this condition of "the excess of capital" that technical progress occurs and the law of relative surplus population enforces itself. For only then is capital pushed to a commodity-economic stalemate, and is thus compelled to form a relative surplus population.

Technical changes may occur during the prosperity phase as well. However, they cannot then constitute a general trend because a high profitability is guaranteed even with the existing technology. During a depression, in which capitalist competition intensifies, the only way for progressive firms to survive and win in competition is to bring down the cost-price below the social norm by innovation. The pursuit of extra surplus value becomes imperative for survival. As the new value of the commodity falls in consequence, those who lag behind are obliged to follow suit.

Labour-power is not a capitalistically produced commodity, so that the ordinary process of capitalist supply adjustment does not apply to it. If the demand for labour-power exceeds its supply, wages, of course, will rise. That, however, does not guarantee a greater supply of labour-power. The market does not determine a "natural" or "equilibrium" wage-rate, since labour-power is not a product of capital unlike other commodities. Since the market does not and cannot control rising wages, an "excess of capital" ensues. And, once caught in it, the only way out is for capital to resort to innovations.

* * *

Even though the value of wage-goods for workers' consumption can be determined in the market, what assortment of wage-goods is deemed "necessary and sufficient" for the reproduction of labour-power poses another question, which has not been answered. For this reason it is often asserted that the living standard of the worker is rigidly fixed at some "biological or physiological" subsistence level. However, *subsistence* also allows for historical, cultural and sociological factors; and thus the concept becomes rather vague. In the following, I would let the "historical" factor depend, at least in part, on the particular productive technology which the aggregate-social capital has adopted for the present course of accumulation.

In the course of accumulation, given the technological base upon which the capitalist production-relation is founded, there is a lower limit below which the rate of surplus value cannot fall, without rendering further accumulation of capital meaningless. There is also an upper limit beyond which the rate of surplus value cannot rise, without rendering the reproduction of labour-power impossible. The feasible range (e^*_1, e^0) of the rate of surplus value is a well-defined concept. For, given the length of the working-day and the intensity of labour, the rate of surplus value exactly determines the length of labour-time necessary for the reproduction of labour-power. Therefore, the determination of the real wage or living standard of the workers, amounts to identifying a normal rate of surplus value, $\bar{e}$, that belongs to the interval (e^*_1, e^0). So long as this normal $\bar{e}$ represents the rate of surplus value prevailing in the period of so-called "average activity", it does not matter what formula is devised to select $\bar{e}$ from (e^*_1, e^0). For example,

$$\bar{e} = \frac{e^0 + e^*_1}{2}$$

would be as good as any other.

Once $\bar{e}$ is selected, the value of labour-power per period is defined by

$$\bar{v} = \frac{t}{1 + \bar{e}}$$

where t denotes the length of the working-day, whose social average we may assume to be known.

Furthermore, let

$$w = a(\theta)v, \qquad a'(\theta) > 0,$$

where w is the index of the physical size of the basket of wage-goods which an average worker purchases with his wages, and $a(\theta)$ is the average productivity of labour, depending on the technical parameter θ. Then the relation between real wages and the rate of surplus value can be stated by

$$w = \frac{a(\theta) \cdot t}{1 + e},$$

which can be graphed as a one-parameter family of hyperbolas, each depending on θ.

In Figure 6.3 only two such hyperbolas are shown on which the feasible range (e_1^*, e^o) of the rate of surplus value and the corresponding feasible range (w_{min}, w_{max}) of real wages are marked by $\theta_1\theta_1'$ and $\theta_2\theta_2'$. The path of cyclical accumulation is as from θ_1 to θ_1', and then from θ_2 to θ_2', etc. On $\theta_1\theta_1'$, however, there is a point $\bar{\theta}_1$, which indicates a level of "average activity", and similarly a point $\bar{\theta}_2$ on $\theta_2\theta_2'$.

A point such as $\bar{\theta}_1$ is of great importance. For it represents the normal rate of surplus value, $\bar{e}(\theta_1)$, the average standard of living of the worker, $\bar{w}(\theta_1)$, and the value of labour-power, $\bar{v}(\theta_1)$, given the technology θ_1 which the aggregate-social capital has adopted. If a consistent method is applied in selecting the point $\bar{\theta}_i$ on $\theta_i\theta_i'$ for all i, it is highly unlikely that $\bar{w}'(\theta) < 0$ should result. In other words, the so-called doctrine of absolute impoverishment does not seem to have a general validity.

* * *

Thus, regardless of how $\bar{w}(\theta)$ is selected, the amount of labour socially necessary to produce the basket of wage-goods of that size can be regarded as constituting the value of labour-power, $\bar{v}(\theta)$. The value

of labour-power is "historically" determined, but not in a wholly impressionistic and vague sense. Here, "historically" means "in correspondence with the particular level of technology that capital has adopted at a given moment of history". That, however, is another way of saying that the value of labour-power cannot be wholly determined outside the capitalist system. It is determined, at least in part, in the process of the working of the law of relative surplus population.

By virtue of this fact, the only open-endedness of the law of value which governs the motion of capital is now closed. For as long as labour-power remains a commodity, the value of which is well defined, the law of value will see to it that the capitalist mode of production operates safely as the process of value formation and augmentation. The law of population, therefore, supplements the law of value by defining the value of labour-power, i.e. by establishing the ability of the capitalist mode of production always to contain labour-power in the form of a commodity.

One important consequence of the law of population is that no productive worker remains permanently unemployed under capitalism, a point which is often overlooked. If indeed the unemployment of productive workers exists, the cyclical phase of average activity is not yet reached, and wages have not yet risen beyond $\bar{w}(\theta)$. Consequently, an excess of capital cannot occur. Nor is a society-wide technical innovation necessary, when the reservoir of labour-power can still feed the "extensive" accumulation of capital. In the cyclical phase of average activity, capitalism always achieves the full employment of productive workers.

That is why, in the period of "precipitancy", well past the phase of average activity, capitalism in fact mobilises even those who would be "unemployable" in other conditions. As for productive workers, they receive wages well beyond the value of their labour-power, and labour-power becomes increasingly uncontrollable as a commodity. This *fundamental disequilibrium*, however, is allowed to develop only up to the point at which the excess of capital enforces a restructuring of capitalism. In the ensuing period of depression a large number of productive workers will find themselves unemployed. They will, however, have earned enough wages in the period of "precipitancy" to survive the hard days of depression, unless the depression is inordinately protracted due to contingent factors.

Thus, in the cyclical course of capital accumulation, wages sometimes fall below the value of labour-power and sometimes rise above it. The value of labour-power is revealed by the level of wages that

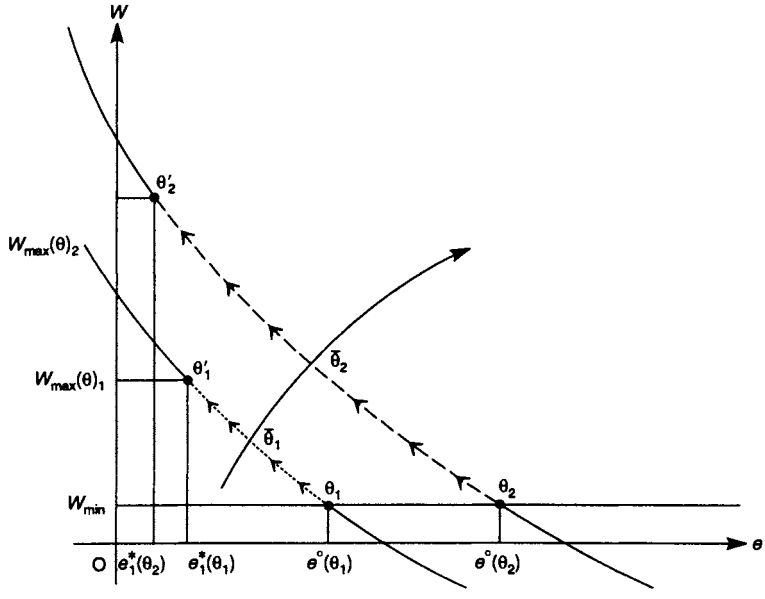


Figure 6.3

prevails in the period of average activity, and depends on a particular complex of industrial technology. If wages rise too far above the value of labour-power the existing technology no longer permits extensive accumulation to continue, and a society-wide reorganisation of productive methods is forced upon capital.

There is, however, no theoretical reason to believe that capital is unable to meet this challenge. On the contrary, it is the demonstrated ability of capital to resort, at this point, to "intensive" accumulation that explains the extraordinary resilience of the capitalist mode of production. The structural flexibility of capitalism which allows it to incorporate more and more advanced technology in production, when it conforms to its aim of chrematistics, is that which establishes the historical significance of this uniquely commodity-economic institution. If indeed such flexibility were absent, capitalism would not have lasted much more than a decade or so, since it would have been unable to overcome the inevitable excess of capital.

Select Bibliography

BÖHM-BAWERK, Eugen von, *Karl Marx and the Close of His System*, Augustus M. Kelly, Clifton, 1975.

BORTKIEWICZ, L. von, "Value and Price in the Marxian System," *International Economic Papers*, no. 2, 1952.

DOMAR, E.D., *Essays in the Theory of Economic Growth*, Oxford University Press, New York, 1957.

MARX, K., *Capital: A Critique of Political Economy*, International Publishers, New York. Volume 1, 1987; Volume 2, 1984; Volume 3, 1984.

MARX, K., *The Grundrisse: Introduction to the Critique of Political Economy*, Vintage, New York, 1973.

MARX, K., *A Contribution to the Critique of Political Economy*, Progress, Moscow, 1970.

MARX, K., *Theories of Surplus Value*, Part I, Progress, Moscow, undated.

MARX, K., *Theories of Surplus Value*, Part II, Progress Publishers, Moscow, 1968.

MORISHIMA, M., *Marx's Economics: A Dual Theory of Value and Growth*, Cambridge University Press, London, 1973.

PALMER, R.R. and Colton, J., *A History of the Modern World*, 3rd edn, Alfred A. Knopf, New York, 1965.

RICARDO, D., *On the Principles of Political Economy and Taxation*, Cambridge University Press, London, 1953.

ROBBINS, L., *An Essay on the Nature and Significance of Economic Science*, Macmillan & Co. Ltd., London, 1952.

SEKINE, T.T., *The Dialectic of Capital: A Study of the Inner Logic of Capitalism*, Vol. 1, Yushindo Press, Tokyo, 1984, republished by Toshindo Press, Tokyo, 1986.

SMITH, A., *An Inquiry into the Nature and Causes of the Wealth of Nations*, Clarendon Press, Oxford, 1976.

SMITH, A.K., *Creating a World Economy: Merchant Capital, Colonialism, and World Trade, 1400–1825*, Westview, Boulder, 1991.

WALRAS, L., *Elements of Pure Economics*, Augustus M. Kelly, Clifton, 1960.

WICKSELL, K., *Lectures on Political Economy*, Routledge & Kegan Paul, London, 1961.

WICKSELL, K., *Value, Capital and Rent*, Allen & Unwin, London, 1954.