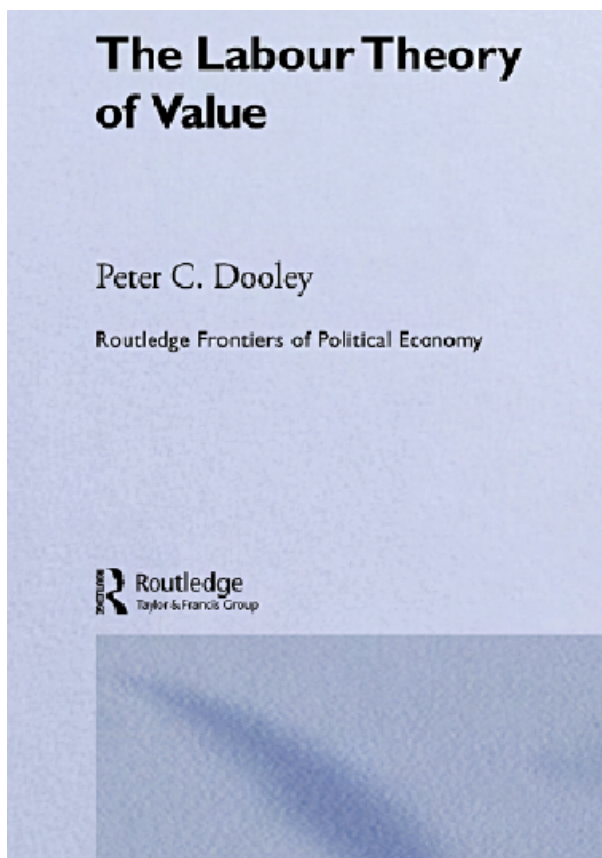


The Labour Theory of Value

Peter C. Dooley



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Contents

<i>List of illustrations</i>	xii
<i>Preface</i>	xiii
<i>Acknowledgements</i>	xiv
1 Introduction	1
2 Sir William Petty: the father of political economy	17
3 John Locke: the classical perspective	34
4 Richard Cantillon	51
5 François Quesnay	64
6 Francis Hutcheson: Adam Smith's professor	80
7 David Hume: Adam Smith's best friend	95
8 Adam Smith and the labour theory of value	109
9 David Ricardo	136
10 Karl Marx: the exploitation of labour	162
11 Classical relics in neoclassical thought	185
12 Concluding points	199
<i>Notes</i>	205
<i>Bibliography</i>	228
<i>Index</i>	243

Illustrations

Figures

11.1	Marginal product of labour	192
11.2	Indifference curve diagram for Ricardian rent	194

Tables

2.1	National Income and Product Account for England and Wales, 1665	21
2.2	National Wealth Account for England and Wales, 1665	21
5.1	The <i>Tableau Économique</i>	73
9.1	Diminishing returns, rent and wages	149
9.2	Wages, rent and profit for a farm initially on the margin	155
9.3	Comparative advantage	158
10.1	Rates of surplus value and profits before values are transformed	175
10.2	Rates of surplus value before and rates of profit after values are transformed	176

Preface

It is the purpose of this book to examine the history of ideas that led to the labour theory of value. While David Ricardo and Karl Marx trace their theories back to Adam Smith, he published a compendium of the thoughts of his predecessors, both ancient and modern. His early and rude state of society has its analogue in the discussion of the origin of civil society by Plato and Aristotle and the state of nature by Hobbes and Locke. The distinctions between the origin, measure and regulation of value can also be found in Aristotle, who attributed the origin of value to the usefulness or utility of commodities. Hobbes broke with the Aristotelian tradition of the scholastic doctors and the universities when he declared that land and labour were the original source of all commodities.

This concept became a production theory of value in the hands of Petty, Locke and Cantillon, who argued that labour produces commodities from the materials found in nature, that even today commodities can be resolved into land and labour. Locke counted up all the labour necessary to produce the bread we eat. Commodities today consist of past labour for Petty, a storehouse of labour for Hume, labour stored up for Smith, accumulated labour for Ricardo and crystalized labour for Marx. They include the labour of past times in the value of commodities today.

Quesnay made land the focus of his theory, while Smith explained the origin, measure and regulation of the value of his beaver and deer by the labour needed to catch and kill them, but this theory only applied in the primitive age of hunters and gatherers. In civil society, where land has been appropriated and capital accumulated, he maintained that the price of most commodities consisted of three component parts: wages, profit and rent. Ricardo adopted Smith's labour theory and tried to prove that labour is the foundation of exchangeable value in civil society. Marx followed Ricardo.

This book offers a new interpretation of the labour theory of value based on the concept of past labour and on the distinction between the origin, measure and regulation of value. It is not a rehabilitation of the labour theory of value. It is not an encyclopaedia of past authors. It is not a commentary on modern commentaries. It does not ask what we derived from classical economics that is valid today. It asks, where did the classical economists get their ideas?

1

Introduction

The metaphysical setting

The labour theory of value grew out of the ideas of the natural law philosophers of the seventeenth and eighteenth centuries: Grotius, Pufendorf, Hobbes, Locke, Quesnay, Hutcheson and Adam Smith, among others. They shared a common research agenda, which can be traced back to antiquity. They began their analysis of humanity and society by looking back to that original state of things which came before civil society. They painted various pictures of this hypothetical society, sometimes called a state of nature. Different philosophers described it somewhat differently. Adam Smith (1976 [1776]:65) called it “that early and rude state of society which precedes both the accumulation of stock and the appropriation of land.” In such a society, labour sacrifice is the only cost of production; and labour is the sole active agent of production. Labour produces commodities out of the things found in nature. Land is not only a gift of nature that costs nothing to produce, but it is also so abundant that it is free to anyone who appropriates it. Since land is free, it bears no rent; and since capital does not exist, neither does profit. “In this state of things,” Adam Smith (1976 [1776]:65) declared, “the whole produce of labour belongs to the labourer.”

In a world where isolated individuals dwell in a state of nature without the companionship, cooperation and protection of friends or family, life would be, as Thomas Hobbes (1968 [1651]:186) so famously put it, “solitary, poore, nasty, brutish, and short.” The first communities, whether based on the family or the village, enriched the social and economic welfare of mankind. They provided care in infancy, in sickness and in old age. They defended society against robber bands and wild beasts. They developed social customs and enjoyed the pleasures of communal life. Through the specialization and cooperation of labour, they also produced a greater abundance of commodities than was possible when each labourer worked alone.

The division of labour gave rise to the institutions of the market, money, property, justice and the state. The isolated individual living in a state of nature is both miserably poor and necessarily self-sufficient. Isolation makes trade impossible, money useless, ownership indisputable, justice irrelevant and the state superfluous. Property and justice become social issues as soon as the specialization of labour produces an abundance of commodities. Francis Hutcheson (1989 [1758]:71) explained how labourers will gladly toil to obtain “the conveniences and elegancies of life” rather than subsist on the products of uncultivated nature. They trade their leisure time for the material pleasures of life, but they could have no incentive to work unless they had the right of property in the fruits of their labour. Hutcheson endorsed the theory of property rights introduced by John Locke (1988 [1690]:288), who maintained that a labourer is entitled to whatever “he hath mixed

his *Labour* with.” The existence of property requires a system of justice that defines the laws of ownership. As society progresses, the state arises to enforce the rule of law.

The labour theory of value is a production theory of value. In primitive society, labourers convert the free gifts of nature into commodities, so that the whole value of commodities is due to labour alone. Labour is the origin of value. When labourers first specialized in production, they produced surpluses of their particular commodities that accumulated beyond their immediate needs. These surpluses are capital goods to their producers, by definition, because they are produced and not consumed. Since, according to the classical view, they were produced by labour, they may be said to embody labour. If these first capital goods are then used in the production of new commodities, metaphorically speaking, the new commodities embody part of the labour contained in the first capital goods. Capital goods transfer the labour embodied in them to new commodities as they are used up in production. Thus, Sir William Petty (1963 [1664]: 110) wrote that commodities were the “effect of former or past labour.” David Hume (1964 [1752]:III, 302) called commodities “a kind of *store-house* of labour.” Adam Smith (1976 [1776]:330) said they were “a certain quantity of labour stocked and stored up to be employed, if necessary, upon some other occasion.” This line of reasoning lies at the heart of the labour theory of value presented by Karl Marx (1961–62 [1867–94]:1, 38), who claimed that a useful article “has value only because human labour in the abstract has been embodied and materialized in it.” This theory leads to the proposition that, in civil society, the whole value of all commodities is produced by labour alone, because land is a free gift of nature that is not produced and because capital goods are simply accumulated labour.

Since everyone desires a great variety of different commodities, labourers barter one surplus product for another. This requires a market where one commodity can be traded for another. In Adam Smith’s (1976 [1776]: 65) well-known example of the beaver and the deer, one beaver exchanges for two deer, because “it usually costs twice the labour to kill a beaver which it does to kill a deer.” Labour regulates the relative value of the beaver and deer. Trading one commodity for another by barter is, however, often inconvenient. This inconvenience leads to the invention of money. By convention, people come to accept one commodity in exchange for all other commodities. Starting with this idea, authorities from Aristotle to Adam Smith defined money as some thing people agree to accept in exchange. Money is not only a medium of exchange and a store of value, but also a measure of value.

As society progresses, the increasing abundance of commodities leads to the growth of population, as T.R.Malthus explained in his *Essay on Population*. David Hume and Adam Smith, among others, had previously made the same point. As population grows, land is appropriated. Whoever first occupies the land, according to Hugo Grotius and Samuel von Pufendorf, claims title to it, but some people are left without any. This unequal division of land creates different social classes based on property, as John Locke and Richard Cantillon later explained, so that rent arises as a distinct category of income. Farmers who accumulate capital or who borrow capital from others can rent land from its owners. People without land and without access to capital must work as labourers. This hypothetical history of mankind accounts for the origin of the three social classes in classical economics: landlords, capitalists and labourers. They receive three distinct

categories of income: the rent of land, the profit or interest of capital, and the wages of labour.

The labour theory of value could convincingly account for the value of commodities in that original state of things which preceded the appropriation of land and the accumulation of stock. Labour was the only scarce factor of production and labour sacrifice was the only cost of production. The labour spent producing a commodity from the free gifts of nature also gave a credible justification for property in that commodity. Taking the fruit of someone else's labour would be robbery. In this situation, the labour theory of property rights is in harmony with the labour theory of value.

In civil society, however, the price of most commodities is divided between the labourer, the capitalist and the landlord; and it is paid out as wages, profit and rent. "In this state of things," Adam Smith (1976 [1776]: 67) wrote, "the whole produce of labour does not always belong to the labourer." The labour theory of property rights is no longer in harmony with economic reality. When he came to explain the regulation of value in civil society, Adam Smith abandoned the labour theory of value. He taught, instead, that prices naturally tend to equal the cost of production, which divides into wages, profit and rent. David Ricardo tried valiantly to maintain the labour theory of market prices, but his logic led him to a cost of production theory that included wages and profit, though he managed to get rid of rent. Karl Marx remained convinced that labour produces the whole value of all commodities, but that labour does not receive that whole value. Capitalists exploit propertyless labourers by paying subsistence wages and by expropriating surplus value as profits. Marx also undertook to show how labour values are transformed into market prices, a demonstration which is still the subject of controversy.

The origin of property, markets, justice and the state

The state of nature provided a theatre for philosophers to present their ideas on ethics, politics, justice, economics, psychology, sociology and the condition of mankind in general. In earlier times, moral philosophy encompassed all of these subjects. They had not yet become separate areas of specialization, but were all interrelated. Cicero (1967:100) put it well when he called philosophy "the knowledge of all things human and divine and the causes which lie behind them." The modern world inherited this approach from classical antiquity, which, along with the Bible, gave scholars of the sixteenth, seventeenth and eighteenth centuries their most fundamental literature. Universities required Greek and Latin for matriculation. Adam Smith and his predecessors were thoroughly grounded in the classics. While Cicero may have been their favourite classical author, Plato and, to a greater extent, Aristotle influenced the economic thought of the modern world.¹

Plato (c. 427–347 BC) was more interested in politics than economics, perhaps because he had witnessed the growth of wealth and commerce in the Hellenic world and with it the defeat of Athens and the disintegration of Athenian society. He lived through the tyranny which followed the conquest of Athens by Sparta and he saw the democracy which replaced it condemn his teacher, Socrates, to death. He sought an ideal society where justice would prevail.

The inquiry into the origin of justice and injustice in his *Republic* began with an economic analysis of the origin of a community or village. "Society originates," wrote Plato (1955:102), "because the individual is not self-sufficient, but has many needs which he can't supply himself." Food is the first need of mankind, shelter second and clothing third. The farmer and the builder require tools made by craftsmen of various kinds. Shepherds produce wool for the weaver. Cowherds furnish leather to the shoemaker. A self-sufficient village would, therefore, contain many different types of labourers.

Since no two people are born alike, they are best fit for different trades. "Quantity and quality," according to Plato (1955:103), "are more easily produced when a man specializes appropriately on a single job for which he is naturally fitted." The division of labour increases production, first, because people specialize in those occupations for which they possess natural aptitudes. Differences in innate abilities cannot very well explain the economic prosperity of civil society, however, because those differences exist in all societies. Second, Plato, like Adam Smith,² emphasized that the skill of labourers improves when they devote their lives to particular trades. This cannot go far in a small village. A high degree of specialization requires a large market, a market which extends to foreign trade. Third, labourers must be available to perform their tasks at the right time. Thus, the division of labour explains not only the origin of society, but also the growth in the output of each labourer and of the whole community.

Specialization makes coordination necessary. Each labourer produces an abundance of one commodity, but wants a variety of different commodities. This leads to buying and selling, the establishment of markets and the introduction of tokens to serve as money, the medium of exchange. Retailers arise in local markets as a distinct social class. A different class of merchants engages in importing and exporting. They, in turn, hire specialists in foreign trade and shipping. A simple village contains a variety of workers, but they produce only plain and simple food, clothing, shelter and the other necessities of life. It is, therefore, called a city of pigs.

Civilized societies are more populous, have many more types of specialized labourers, enjoy greater luxuries and have a higher standard of living. As a society progresses and population grows, it will eventually confront neighbouring societies, which eventually leads to war. Just as shoemakers must practice their craft to become proficient, so too soldiers must devote their lives to the tools of their trade. A well-trained army is the first requisite of a city state. It could not survive without one. These soldiers come from the guardian class in Plato's *Republic*. The guardian class forms the political elite of his ideal state, which would be ruled by a philosopher king.

In his ideal state, life would be closely regulated. The men and women of the guardian class would be equal, but they could not marry. They would not live in families; instead, they would be subject to a programme of selective breeding. Population would be held constant as a matter of state policy. In his *Laws*, Plato (1970:209) recommended the rule of primogeniture to check the growth of population. An optimal population would be 5,040 people, which Plato (1970:205) recommended on the numerological grounds that it "has the largest number of consecutive divisors," that is, 1 through 10. The guardians would be housed, fed and educated at the expense of the community, but, wrote Plato (1955:162), they "shall have no property beyond the barest essentials." His notion of communism is perhaps closer to a Spartan mess hall than a workers' soviet. If the aristocratic guardians owned property, they would be tempted to prey upon the

community. He saw the great inequality of property as evidence of great injustice. His ideal state would also limit inequalities of wealth among the lower classes of farmers, tradesmen and merchants. Excessive wealth, Plato (1970:192) thought, produces “enmity and feuds in private and public life, while a deficiency almost invariably leads to slavery.”

Economic theory and economic policy were of secondary importance to Plato’s analysis of the ideal state. His primary purpose was ethical: to demonstrate that the ideal state should be built on the four cardinal virtues of wisdom, courage, discipline and justice. While few people today may have much sympathy for the authoritarian political structure of Plato’s ideal state, his hypothetical sketch of the origin of society became part of the common heritage of western economic thought. National defence and the administration of justice became the traditional duties of the state. His economic analysis included such issues as the diversity of wants, the division of labour, the necessity of exchange, the invention of money and the inequality of wealth which leading economists have discussed for over two thousand years.

Aristotle (c. 384–322 BC) was a student of Plato; and, like Plato, he began his study of society with the origin of the state. In his *Politics*, he argued that the first community was the family, because it is necessary for the propagation of the species. It arose naturally from the passion between the sexes. Families grew into villages and villages combined to form cities. The subsistence of the family required the proper management of the household economy. In order to survive, the household needed property in the instruments of production, whether these objects were inanimate like a ship or animate like a slave. Slavery was a matter of fact in the ancient world. Aristotle thought slavery was just when it arose from the natural inferiority of the slave, as in the case of a person fit only for manual labour. In Athenian society, slaves had no power; women had very little. They were both subordinate to the master of the household.

Good management of the household consisted in knowing how to employ the different instruments of production. In the beginning, most families lived on farms and subsisted off their land, while shepherds, fishermen and hunters also earned their living from nature. They bartered the surplus product of their commodities for other things which they needed for their subsistence. “This barter,” Aristotle (1912:16) explained in his *Politics*, “introduced the use of money.” Money was originally some thing of value which traders mutually agreed to accept as a medium of exchange. In his *Ethics*, Aristotle (1953:153) defined money “as a sort of pledge or guarantee that a prospective exchange of commodities will in fact take place if the necessity arises, though in the meantime the necessity is not immediate.” Thus, money must be a store of value as well as a medium of exchange; and since it makes different commodities commensurable when they are exchanged for money, it is also a measure of value. At first, some standard commodity was accepted as currency by general agreement; but, after a time, coins were introduced as money and stamped to show their value. His three functions of money are still taught today: the medium of exchange, the store of value and the measure of value.

The acquisition of those things which are necessary for the happiness of life was the original and natural use of money. Money is necessary to obtain the means of subsistence for the family and to provide for the necessities of state. These needs are limited. The acquisition of riches, in contrast, is unlimited, because wealth can be accumulated without end. Money-making as an end in itself is justly censurable. It is unnatural. “It has

not its origin in nature,” Aristotle (1912:19) wrote, “but by it men gain from each other.”³ The distinction between the limited and natural use of things as articles of consumption for the household and their unlimited and unnatural use as articles of commerce correspond to Adam Smith’s distinction between value in use and value in exchange. The household buys shoes for their use value; the retailer sells shoes for their exchange value.

Usury, or charging interest for money, is the most detestable use of money, according to Aristotle. It breeds money from money, even though money is naturally barren. It does not yield fruit like an orchard or grain like a field. The natural use of money is as a medium of exchange. Aristotle’s objection to usury was adopted by the Church, which supported the doctrine in one form or another into modern times. Such was the force of this traditional view that even Adam Smith, the great advocate of laissezfaire, proposed that the state should impose a ceiling on the rate of interest.⁴

Aristotle did not present a complete theory of value. He was no doubt more interested in justice than economics, but he did recognize the essential fact that equal values are given in exchange: for every seller there must a buyer be. His theory of exchange is stated in terms of the demand for the produce of labour, not the labour cost of production. When a farmer exchanges food with a shoemaker for a pair of shoes, the value of the food given in exchange equals the value of the shoes;⁵ otherwise, a voluntary exchange is not possible. Both traders want to satisfy their own needs.

There can be no true exchange or association if the things exchanged are not somehow reduced to equal value. To repeat what I said before, there must be one standard by which all commodities are to be measured. This standard is in fact demand; in every situation of the kind demand is the unifying factor. For if people should have different wants from what they do have, or no wants at all, there would be a different kind of exchange or none at all.

(Aristotle 1953:152–3)

This is an embryonic theory of reciprocal demand, as presented formally much later by W.S.Jevons (1957 [1871]) in his *Theory of Political Economy*, by Léon Walras (1954 [1874–77]) in his *Elements of Pure Economics* and by Alfred Marshall (1949 [1879]) in his *Pure Theory of Foreign Trade*. It is based on consumer wants and is a predecessor of the subjective value theory or utility theory.⁶ The idea that utility is the origin of value became part of the Aristotelian tradition of the scholastic doctors in the Middle Ages and it survived into modern times.

Aristotle rejected Plato’s ideal of a state based on common property, but he shared his misgivings about great wealth and severe poverty. In his *Politics*, he considered how property should be regulated after the formation of his most perfect state. He thought that both private property and common property had their place. Private property is often practically necessary, because, as Aristotle (1912:33) put it, “those who labour hard and have but a small proportion of the produce, will certainly complain of those who take a large share of it and do little for that.” He noted how disputes arose in new colonies, where property rights were neither fairly nor firmly established. Private property would prompt people to look after their own affairs and apply their labour to improve their property and to establish cities that enjoyed good morals and the equal protection of the

laws. “It will then be,” Aristotle (1912:33) thought, “that from the principle of virtue they will mutually perform good offices to each other according to the proverb, ‘All things are common amongst friends’.” Private property is best for production, but the virtue of sharing is best in consumption: self-love tempered by benevolence, as Francis Hutcheson later put it.⁷ The legislator should aim to bring citizens to this happy condition.

In his *History of Economic Analysis*, J.A.Schumpeter rightly claimed that Aristotle laid the foundation for classical economics.

Aristotle based his economic analysis squarely upon wants and their satisfactions. Starting from the economy of self-sufficient households, he then introduced division of labor, barter, and, as a means of overcoming the difficulties of direct barter, money...This—presumably the extract from a large literature that has been lost—constitutes the Greek bequest, so far as economic theory is concerned. We shall follow its fortunes right to A.Smith’s *Wealth of Nations*, the first five chapters of which are but developments of the same line of reasoning.

(Schumpeter 1954:60)

Smith first learned his Aristotle from Francis Hutcheson, his professor of moral philosophy at Glasgow, whose teachings had a more immediate and stronger influence on him than Aristotle in the original.

This book will jump from Plato and Aristotle to the natural law philosophers of the seventeenth century, especially Grotius, Pufendorf and Locke.⁸ This omits the vast literature by Roman authorities like Seneca and Cicero as well as scholastic doctors like St Thomas Aquinas and Leonard Lessius. While Grotius and Pufendorf read and cited Church scholars, Hutcheson, Hume and Adam Smith looked to classical rather than Church authorities.⁹ Barry Gordon (1975:244) has observed that the excellent economic analysis of the schoolmen “was lost.” This may have been due to the Protestant Reformation, the Counter-Reformation and the religious wars of the seventeenth century, which discredited the authority of religion and the Church. Furthermore, since Hutcheson, Hume and Smith were raised as Protestants, though they became nonconformists, it is not surprising that they did not follow the teachings of the Church of Rome.

Hugo Grotius (1583–1645), also known as Huigh de Groot, was a man of many talents.¹⁰ He wrote Latin poetry at the age of eight, entered the University of Leyden at twelve, received a Doctor of Laws from the University of Orléans in France at fifteen and was admitted to the bar at seventeen. He practised law at The Hague, represented the Dutch East India Company, was named the Latin historiographer of Holland and became legal council to Prince Maurits van Nassau, which led to his career as a politician. His dissent from the Calvinist doctrine of predestination landed him in jail with a sentence for life, but, with the aid of his wife, he escaped and fled to Paris. He spent most of the last decade of his life as the Swedish ambassador to France in Paris, where he worked to end the Thirty Years War. He was a poet, playwright, linguist, historian, lawyer, economist, philosopher, theologian, politician and diplomat as well as the father of international law.

Two publications by Grotius contain notable contributions to economic literature. *Mare liberum* (or *The Freedom of the Seas*) was published in 1608. It had been chapter

12 in a longer book, which had been written in 1604, *De iure praedae commentarius* (or *Commentary of the Law of Prize and Booty*), but which went unpublished until a manuscript of it was discovered in the nineteenth century. *Mare liberum* reflected the commercial rivalry that existed between England, Spain, Portugal, Holland, France and other European countries that were trying to monopolize trade and establish colonies abroad. The attempt by the Portuguese to exclude the Dutch from sailing to and trading in the East Indies prompted Grotius to write on the freedom of the seas. As a mercantile power, the Dutch needed access to foreign markets. *De iure belli ac pacis* (or *The Rights of War and Peace*), which appeared in 1625, was also based on material in *De iure praedae*. It asks, what is a just war? It reflected the butchery of the Thirty Years War, which began in 1618 and did not end until 1648. "Throughout the Christian world," Grotius (1964 [1625]:I, 20) wrote, "I have observed a lack of restraint in relation to war, such as even barbarous races should be ashamed of." An accomplished legal scholar, he was thoroughly familiar with ancient philosophy, Roman law and Church jurists as well as contemporary commercial practise.¹¹ The references to banks, insurance, partnerships, shares, loans, creditors, debtors, wages, profits and rent reflect the advanced state of the Dutch economy of the day.

Grotius traced the origin of society back to primitive times. Sometimes he referred to the biblical stories of creation and the flood:

Soon after the creation of the world, and a second time after the Flood, God conferred upon the human race a general right over things of a lower nature.

(Grotius 1964 [1625]:II, 186)

Sometimes he referred to classical mythology:

In the primitive law of nations, which is sometimes called Natural Law, and which the poets sometimes portray as having existed in a Golden Age, and sometimes in the reign of Saturn or of Justice, there was no particular right. As Cicero says: "But nothing is by nature private property."

(Grotius 1916 [1608]:23)

In this primitive society, Grotius explained, people lived together sociably and subsisted on the spontaneous produce of the earth. The abundance of nature made property rights unnecessary. People could seize and consume whatever they came upon. This was the original state of nature, where, Grotius (1964 [1625]:I, 54) argued, "the first one taking possession would have the right to use things not claimed and consume them up to the limit of his needs." To rob the first occupier would be a manifest injustice. Grotius (1964 [1625]:II, 186) found an analogy to the right of first occupancy in Cicero: "Although the theatre is a public place, yet it is correct to say that the seat which a man has taken belongs to him." The natural sociability of mankind maintained peace and good order in the state of nature.

But this primeval condition did not last long. "With the increase in the number of men as well as flocks," Grotius (1964 [1625]:II, 189) related how "lands everywhere began to be divided." The idea of private property was first attached to moveable things and then

to immovable things. “Things became subject to private ownership,” Grotius (1964 [1625]:II, 189) wrote, “by a kind of agreement, either expressed, as by a division, or implied, as by occupation.”

Some things, of course, like the sea and the air, could not be made private property. In some countries, wild beasts, fishes and birds were subject to the rule of capture, or first occupancy, but civil law could justly make them the property of the landlord. Thus, property rights are not absolute rights, but vary from nation to nation. In contrast, “the law of nature,” Grotius (1964 [1625]:I, 40) argued, “is unchangeable—even in the sense that it cannot be changed by God.” Since the preservation of life comes from the original law of nature, in cases of extreme necessity a person may take and use the private property of someone else. “The primitive right of user revives,” Grotius (1964 [1625]:II, 193) believed, “as if community of ownership had remained.” Under extreme necessity, the natural law of self-preservation is superior to the civil law on property.

Civil society arises as people seek more elegant conveniences and luxuries than can be found in a state of nature, as Grotius explained in a passage that was later paraphrased by Francis Hutcheson (1989 [1758]: 71–2) in his *Observations on “The Fable of the Bees”*. The primitive condition of common ownership was abandoned, because

men were not content to feed on the spontaneous products of the earth, to dwell in caves, to have the body either naked or clothed with the bark of trees or skins of wild animals, but to choose a more refined mode of life; this gave rise to industry, which some applied to one thing, others to another.

(Grotius 1964 [1625]:II, 189)

The division of labour increased output beyond what was possible in a state of nature, because of inventions or technical progress. “Men... turned their thoughts to various kinds of knowledge,” wrote Grotius (1964 [1625]:II, 188), as he continued with the story in Genesis, “the symbol for which was the tree of knowledge of good and evil.” They sought out many inventions and devised new means of enjoyment. Adam Smith gave inventions as the third reason why the division of labour increases output.

Grotius considered whether making a new commodity was grounds for claiming property in it, as Paulus the Lawyer had claimed. This question anticipated the labour theory of property rights presented by John Locke in his *Two Treatises of Government*. Grotius concluded, however, that in nature

nothing is produced except from matter which previously existed. If, then, the material belonged to us, the ownership of that which is produced will continue, even though a new form is presented. If the material belonged to no one, in that case acquisition will be classed under the head of acquisition by occupation. On the other hand, if the material used was the property of another, the thing produced naturally does not belong to us alone.

(Grotius 1964 [1625]:II, 206)

For Grotius, the explicit or implicit agreement of mankind made first occupancy alone sufficient grounds for claiming property in any thing. Labour merely established the right of first occupancy for things that did not belong to anyone. In contrast, Locke (1988 [1690]:289) gave primacy to the labour originally employed upon the things of nature: “The *labour* that was mine, removing them out of the common state they were in, hath *fixed* my *Property* in them.”¹²

His theories of barter, money and price were mainly based on an appeal to the authority of classical authors. Grotius (1964 [1604]:257) quoted Aristotle to explain that in very ancient times as soon as things became private property, barter arose naturally, “because men had more than enough of some things and less than enough of others.” Grotius (1964 [1625]:II, 351) also quoted Seneca to explain that “The price of everything depends on the circumstances. Though you have praised those things highly, they are worth only as much as they can be sold for.” To this Grotius (1964 [1625]:II, 351–2) added the authority of Paulus the Lawyer, who said, the prices of things are fixed “by common estimation, that is,...the value which all put upon them.” He appealed somewhat more to reason than to authority where he wrote

with respect to the current price, account is ordinarily taken of the labours and expenditure of the dealers. The price, again, is wont to change suddenly according to the abundance or scarcity of buyers, of money, and of commodities.

(Grotius 1964 [1625]:II, 352)

This is an elementary supply and demand theory of price determination, which he qualified by recognizing that the prices of some commodities are fixed by law and that other commodities are monopolized. He explained the regulation of the wages of labour, the interest on money and the rent of land by the same principles.

Grotius refers to Aristotle’s *Ethics* in his treatment of the functions of money, though his analysis does not match that of his ancient master. He parted company with him on the question of usury. Aristotle had claimed that money is by its nature barren or unproductive and, therefore, charging interest on money was unjust. Grotius rejected this argument on the grounds that it was specious, because it confused the use and profits of a thing with the thing itself. A house is not fruitful, but the use of it is worth its rent. Money may be barren in the same sense, but, since a profit can be made by the use of it, interest on money is just and in accordance with natural law. In Holland, he explained, that rate of interest was eight per cent on ordinary loans, but a rate of twelve per cent would be reasonable and just if the hazard was sufficiently great.

In *Mare liberum*, Grotius justified freedom of trade on the principles of natural liberty and natural law. By freedom of trade, he meant the right of one nation to trade with another nation without obstruction by a third nation. At issue was the right of Holland to trade in the East Indies without the interference of Portugal. By natural law, he meant the primitive law of nations that came before the establishment of civil society and civil law. The natural liberty of mankind obtained in the primitive state of nature, in which no one held power over anyone else. According to natural law, therefore, no sovereign state is subject to the legal control of another nation. Civil law could restrain the natural liberty

of individuals within a nation, but, since freedom of the seas is outside of the jurisdiction of any country, freedom of trade comes under natural law, not civil law.

Therefore freedom of trade is based on a primitive right of nations which has a natural and permanent cause; and so that right cannot be destroyed, or at all events it may not be destroyed except by the consent of all nations. For surely no one nation may justly oppose in any way two nations that desire to enter into a contract with each other.

(Grotius 1916 [1608]:63–4)

For Grotius, the idea of free trade and natural liberty applied fully to independent nations, but not to individual people, whereas, by the time these ideas reached Adam Smith, they were being extended to the people.¹³ Grotius was hardly an advocate of laissez-faire, however, because he thought granting monopoly privileges were sometimes justifiable and certainly not contrary to natural law. Perhaps he had the Dutch East India Company or the Bank of Amsterdam in mind.

Samuel Pufendorf (1632–94) was born in the village of Flöha in Saxony.¹⁴ He attended the University of Leipzig and later Jena, where he studied theology, jurisprudence, natural law and mathematics. Upon graduation, he found employment as tutor to the family of the Swedish minister, Coyet, who represented Sweden in Denmark. This brought Pufendorf to Copenhagen, where he soon found himself in jail when war broke out between Denmark and Sweden. While in prison and without access to a library, he wrote his first book, *Elementorum jurisprudentiae universalis libri duo*, which was published in 1660 soon after his release. It developed his ideas on natural law along the lines introduced by Hobbes and by Grotius; and it contained an early discussion of his notions on economics: the origin of property, inventions, value, money and usury. The success of this book led to his appointment as professor of natural and international law at the University of Heidelberg.

A few years later, the King of Sweden appointed him professor of jurisprudence at the University of Lund, where he wrote his most famous book *De jure naturae et gentium*. This scholarly tome cited over four hundred authorities: Greek and Roman philosophers, historians and poets; the Roman law; the books of the Bible; the Church fathers; medieval and early modern scholastic doctors as well as many of his contemporaries.¹⁵ An abridgement of it, *De officio hominis et civis*, was published the following year. Gershom Carmichael, who was Francis Hutcheson's professor of moral philosophy, published a commentary on it that was used as a textbook at the University of Glasgow in Adam Smith's student days, so Smith was well acquainted with the ideas of Pufendorf as well as Grotius. At the invitation of the Great Elector of Brandenburg, Pufendorf spent his last days in Berlin where he was made Baron von Pufendorf.

Pufendorf followed the long-established tradition in philosophy by beginning his analysis of the human condition in a state of nature, which he defined in economic terms as the absence of all inventions and institutions necessary for a comfortable life.

Such a condition must be regarded as most miserable, whether you imagine man to have come from the beyond as a babe, or as a man already endowed with his full stature and strength. As an infant he must certainly

have perished, unless by some miracle an animal had given the poor babe nourishment from its own body, but this association with brutes would certainly have given their foster-child much of their own savagery. Were he a full-grown man, we would have to imagine him naked, able to make only inarticulate sounds, devoid of all knowledge and customs of men, in constant fear, “amazed at the changing light of this earth,” as Manilius describes him.

(Pufendorf 1934 [1672]:155)

People would live like animals until by experience and by ingenuity they learned the simplest arts, which may take generations to invent and perfect. This was the state of natural liberty in which people had the right to preserve their lives by whatever means necessary and to use and enjoy whatever they may discover, provided they did no injury to others. In this condition, Pufendorf (1934 [1672]:158) wrote, “every man is considered equal to every other man, since neither is the subject of the other.”

This is not a Hobbesian state of war by all against all, but a state of sociability as depicted by Grotius. Right reason leads all people to recognize that their own welfare depends upon the friendly attitude of one to another. Peace is founded on the following natural laws:

A man shall not harm one who is not injuring him; he shall allow every one to enjoy his own possessions; he shall faithfully perform whatever has been agreed upon; and he shall willingly advance the interests of others, so far as he is not bound by more pressing obligations.

(Pufendorf 1934 [1672]:172)

While people are motivated by self-love and self-preservation, everyone stands in need of the united efforts of others. It is not possible for individuals to live well and comfortably without the cooperation and assistance of other people. Inventions and useful discoveries lifted mankind out of their original and necessitous state of nature. Like Grotius, he emphasized innovations as the cause of prosperity. After citing Virgil, Lucretius, Cicero and Seneca, among others, Pufendorf (1934 [1672]:349) remarked that “the ancients admitted many men to the council of the gods, because they had made the life of man more advanced by useful inventions or beneficent institutions.” Thus, Pufendorf made innovation the key to economic progress, though he wrote a century before the Industrial Revolution, three centuries before the hegemony of science.

Pufendorf followed Grotius on the origin of property rights. In the original community of mankind, the right to property has been called negative rather than positive, because, Pufendorf (1934 [1672]:537) explained, “all things lay open to all men, and belonged no more to one than to another.” The first convention of society concerned the appropriation of the useful things of nature. In the beginning, everyone could assemble together in one place, as Grotius had explained, and make a general agreement to allocate the things of nature first by division, as in Genesis. Thereafter, appropriation took place by first occupancy.

Pufendorf based his theory of market prices on Aristotle and Grotius, but he went beyond them by distinguishing between the daily or temporary price and the common or natural price. He followed Aristotle where he made utility the origin of value:

The foundation of price in itself is the aptitude of a thing or action, by which it can either mediately or immediately contribute something to the necessity of human life, or to making it more advantageous and pleasant.
(Pufendorf 1934 [1672]:676)

Thus, he continued, “things of no use are said to be of no value.” The reciprocal demand for things is the basis of exchange. If traders do not need anything or if they want to keep their own goods rather than trade them for other goods, exchange is not possible. Thus, the usefulness of things does not regulate their value. In his shorter *De officio*, Pufendorf (1927 [1673]:71) wrote that, on the one hand, “love of display and luxury have placed enormous prices on many things with which human life could very comfortably dispense, for instance pearls and jewels,” while, on the other hand, “we rather see men hold in lowest esteem the things with which human life cannot dispense.” This is the paradox of value made famous by Adam Smith.

The market price of things on any given day is regulated by the demand of the buyers and the quantity available for sale. His day is similar to the Marshallian temporary or market period.

Things of daily use and such as concern primarily food, clothing, and arms, experience the greatest rise in price when scarcity of them is joined with necessity, such as is seen in times of famine, and in sieges, and delayed voyages, when hunger and thirst must be appeased and life preserved at any price.

(Pufendorf 1934 [1672]:683)

A lack of buyers depresses the price, while a scarcity of commodities raises their price. Pufendorf (1934 [1672]:677) quotes Aristotle’s argument that voluntary trades require equal values to be given in exchange and that society is bound together by the reciprocal demand for different commodities.

The “common” or “natural” price of things, according to Pufendorf (1934 [1672]:686), depends on “the general valuation and judgement of men, with the further consent of those who are the parties to the bargain.” Price is a matter of supply and demand, where supply is governed by the costs that are necessary to bring a commodity to market. This is similar to the Marshallian cost of production in the long period. Cost includes, according to Pufendorf (1934 [1672]:683–9), “workmanship,” “the abundance or scarcity of workmen,” “the price of labours,” which depends on “the dexterity required in them, their usefulness, necessity, the scarcity of workers, their renown or position, their freedom to work when they choose,” “the labour and expense which merchants undergo in importing and handling their wares,” “the difficulty, length, and peril of the way, as well as a different value of money and goods in different places,” and “any loss ensuing, or forgoing of profit, which befalls the seller by virtue of such sale.” The profit forgone is

evidently a necessary cost of business. Thus, he was groping toward the idea that the supply price tends to equal the cost of production including a normal profit.

Pufendorf cited and quoted Aristotle on the definition and functions of money. He also cited Jean Bodin to explain how the value of money depends on the quantity of it and how, because of the importation of gold and silver from America, it had fallen in value in the previous two centuries. Pufendorf (1934 [1672]:696) thought that money should be a stable measure of value, but, as a practical matter, recommended that the value of money itself could be found by comparing it with “those things which are most necessary for life.”

Now land meets this end best of all, since from it comes, mediately or immediately, most of the things by which human life is sustained. And since its products are sufficiently fixed by a full year compensating for a lean one, these are understood to have a fairly stable price, on which the prices of everything else, which has so far not received a valuation from the luxury or foolishness of men, are based.

(Pufendorf 1934 [1672]:696)

His idea that land should serve as a measure of value is based on the claim that the essential foodstuffs are relatively stable in value over long periods of time, a claim later advanced by John Locke, Francis Hutcheson and Adam Smith, all of whom had read Pufendorf.¹⁶

Like Grotius, he criticized Aristotle’s objection to usury and noted how easy it was to escape the prohibition of charging interest on money.

Thus let us suppose that Gaius is given money to buy a farm. Seius wants the same farm but has no money. At his request Gaius purchases the farm and then rents it to Seius. No one denies the justice of such a contract. But if Gaius should lend Seius the money to buy the same farm, and the latter should pay as much in rent as he would give in interest on the loan, there appears no wrong in such a transaction. Nay, the latter contract is more to the advantage of Seius than the former, since by it he has secured the ownership of the farm.

(Pufendorf 1934 [1672]:759)

Provided the lender does not unjustly oppress the poor, interest is not contrary to either natural or divine law. While money may be considered barren in so far as it does not reproduce itself in kind, like seeds sown on the soil; yet, it bears fruit when it is invested for a profit. “Therefore,” Pufendorf (1934 [1672]:757) concluded, “usury is listed not among natural but among civil fruits.”

For Pufendorf, the natural liberty of mankind existed only in a state of nature. It did not apply to civil laws that restricted trade or granted preferences to particular individuals. While he thought monopolies may be odious, they were not contrary to natural law. They may even be beneficial. “Thus,” Pufendorf (1934 [1672]:738) observed, “in most of the states of Europe, a man who wishes to open a store or produce some commodity must fulfil certain conditions, for it is not enough for him to know the

mere art of the trade.” A monopoly grant by the state to a single citizen or a guild of merchants may, continued Pufendorf (1934 [1672]:739), “by their wealth be of more assistance to the state in time of need than separate individuals.” He only approved of monopolies established by the state, but not those established by private individuals.

If a man would dare to clear for himself the way to a monopoly, apart from any such pact with the proper owner of the commodity, and to prevent by force or secret machinations others from coming to that place, in order that all other men would have to purchase it of him, it is clear that he both sins against the law of humanity, and malevolently infringes upon the liberty of the rest of mankind.

(Pufendorf 1934 [1672]:738)

A monopoly established by private citizens would invade the natural liberty of mankind and violated natural law, because monopoly enjoys the privilege of force. Private citizens have no right to use force. The use of force is the prerogative of the state, which was originally established to defend society against the evils of other people. This is a legal argument. The “obvious and simple system of natural liberty” in the *Wealth of Nations* is supported by an economic argument, but it requires an exact administration of justice. Adam Smith wanted all preferences and restrictions by the state removed in order to improve the economic welfare of mankind.

To the classical school and beyond

Plato and Aristotle began their analysis of society by looking back to the beginning of civilization. This became the standard method of analysis in the social sciences, which remained within the scope of moral philosophy until the nineteenth century. Grotius and Pufendorf adopted this ancient methodology. It is hypothetical history as well as metaphysical philosophy in the sense that it is not based on empirical evidence. They assumed that, in the state of nature, labour gathered the spontaneous produce of the earth to feed and clothe mankind. They then logically deduced how specialization gave rise to barter, money, prices, property, justice and the state, all of which they presented in so convincing a manner that it was followed in form, if not in detail, by Hobbes, Locke, Quesnay, Hutcheson, Hume and Adam Smith.

Neither Grotius nor Pufendorf had a labour theory of value. They followed Aristotle, who made demand or utility the origin of value. However, the labour theory of value is only a small logical step from a state of nature, where land and labour are the only factors of production. It was from this perspective that Hobbes wrote that all commodities were originally derived from land and labour. Sir William Petty, his young friend, turned this concept into a theory of the origin and measure of value based on land and labour. If land is a free gift of nature, it is logical to claim, as Petty did, that capital goods are simply “past labour.” Chapter 2 treats Petty.

John Locke came close to a labour theory of the origin of value when he explained how nearly all the value of commodities today is due to labour. He thought that the value of a commodity includes the labour that was immediately necessary to produce it plus all

the labour that went into the materials, supplies, machinery, buildings and other capital goods that were used up producing it; and so on back to the state of nature. This is a retrospective view of value like a pure labour theory of value. Locke concluded, however, that labour constituted no more than 99 per cent of the value of commodities, because even the free gifts of nature were worth something. He had a land-plus-labour theory of the origin value, like Petty.

The state of nature gave Locke his theory of property rights. Whatever a man removed from the state of nature and mixed his labour with became his private property. Property requires a system of justice, which explains the origin of the state. The Lockean theory of property rights became the starting point for the ethical foundation of the labour theory of value. It influenced the moral philosophy of liberals and Marxists, both of whom held that workers are morally entitled to the fruits of their labour. Hutcheson, Quesnay, Hume and Adam Smith all had similar theories of property rights. Chapter 3 treats Locke.

Petty and Locke stand at the head of two distinct, though related, lines of thought that lead to Adam Smith. One strain goes by way of Cantillon to Quesnay. This is the French origin of Smith's ideas. Authorities who stress this lineage often focus on the role of the social surplus in the economic analysis of the French economists. Gianni Vaggi (1987:192), for example, concluded his work on Quesnay by stating that "his doubts, his questions, and even his wrong answers, set the agenda for later economists and justify his reputation as the founder of the theory of surplus."¹⁷ The other line of thought leads to Hutcheson and Hume. Authorities who give the highest priority to this source of his ideas look to the influence of British philosophers. James Bonar (1893:146) noted that Smith did not live in a vacuum in Britain: "His friend Hume, following up Locke and Petty and many pamphleteers, had done good preparatory work; and Hutcheson's lectures at Glasgow, to say nothing of his *Moral Philosophy* (1747) had probably an influence on Adam Smith's ways of thinking."¹⁸ Chapters 4 through 7 discuss Cantillon, Quesnay, Hutcheson and Hume.

Smith began the *Wealth of Nations* by stating that all production is due to labour. In primitive society, he explained that labour was the origin, measure and regulator of value, but he had a different theory of the regulation of value in exchange for civil society. Ricardo and Marx tried in vain to explain the value of commodities in civil society by the labour embodied in them. Chapters 8 through 10 treat Smith, Ricardo and Marx. Chapter 11 shows that early neoclassical economics still contained some classical relics, such as the origin of value. Chapter 12 is a conclusion.

2

Sir William Petty

The father of political economy

A brief life of Sir William Petty

Sir William Petty (1623–87) was born in Romsey, a market town in Hampshire, where his father was a clothier of modest means.¹ At school he learned Latin and a little Greek before signing on an English merchantman as a cabin boy at the age of thirteen. After a short time at sea, he broke his leg, so his Captain put him ashore near Caen in France. He turned this misfortune into a blessing with the help of his knowledge of Latin. It gained him admission to a Jesuit college in Caen, where he mastered Latin and learned Greek and French, as well as the more practical branches of mathematics, such as arithmetic, geometry and astronomy. This rigorous education stood him in good stead for the rest of his life.

After returning home and spending time in the navy, he went back to the continent to study medicine at Utrecht, Leyden and Amsterdam, which were among the leading centres in Europe. With a ready eye for money, he supported himself and his younger brother all this time by such ventures as presented themselves: working, trading, gambling, whatever. In Paris, as a young medical student, he worked with Thomas Hobbes on anatomy. Together they studied the treatise by Vesalius, and Petty assisted Hobbes with the diagrams in his *Optics*. They became lifelong friends. He completed his medical education at Oxford, where he became professor of anatomy in 1651 at the age of twenty-seven. He gained notoriety as a physician by resuscitating Ann Green, whose body had been brought to him for dissection after she had been hanged for murdering her illegitimate child. While still a professor of anatomy at Oxford, he was appointed reader in music at Gresham College in London. During this period, Petty met Robert Boyle, Dr Wilkins, John Wallis, Christopher Wren and other members of the “Invisible College,” which would become the Royal Society of London. They met in Petty’s rooms while they were in Oxford. When Charles II later established the Royal Society, Petty was one of its original members.

In 1652, in spite of the promising academic career before him, Petty accepted the position of physician to Lieutenant General Fleetwood and the Commonwealth Army of Occupation in Ireland, where he was destined to make a great fortune. The country lay in ruins after a decade of war, which began with the rebellion of 1641 and ended with the reconquest by the New Model Army of Cromwell. The war had originally been financed by adventurers from England, who had not been repaid, and by the soldiers of the army, who were owed their wages. The government planned to pay the adventurers and the soldiers with land from forfeited estates. Petty obtained the contract to survey the territory, known as the Down Survey, so that the lands could be allocated. By dividing

the occupation of surveyor into separate tasks and by training soldiers to do the work, a practical example of the division of labour, he completed the survey in a little over a year. Maps were drawn from the survey, and the value of all lands and buildings were recorded. With the large sum of money he earned from the survey, Petty was uniquely positioned to purchase tens of thousands of acres at depressed prices. Claims and lawsuits over this land plagued him for the rest of his life. By the time of the death of Oliver Cromwell, he had risen to be Commissioner for Army Lands, Clerk of the Council and Private Secretary to Henry Cromwell, Oliver's son, who had become Lord Lieutenant of Ireland.

While Petty attracted more than his share of controversies and enemies, he knew and was well-regarded by the political and intellectual elite of his day: the Royal Society, the Cromwells, the Stuarts as well as the literary society of the Restoration. Samuel Pepys (1897–1900:IV, 23–4), Secretary to the Admiralty, recorded in his *Diary* that Sir William Petty was “one of the most rational men that ever I heard speak with a tongue, having all his notions the most distinct and clear.” John Evelyn (1901:II, 101) wrote a biographical sketch of Petty in his *Diary*, saying “there is not a better Latin poet living” and, “if I were a Prince, I should make him my second Counsellor, at least.” John Aubrey (1898:I, 43) wrote a biography of Petty, whom he called “my singular friend.”

After the fall of the Cromwells and the restoration of the Stuarts, Petty did not gain another high office. He addressed his first tract on economics, *A Treatise of Taxes and Contributions* (1963 [1662]), to the Duke of Ormond, Lord Lieutenant of Ireland, perhaps in the hopes of gaining favour, but without success. He addressed other tracts to Charles II with the same result. He did, however, have access to court, where he sought funding for his projects, such as his invention of a double-bottomed boat. Both Charles II and James II took pleasure in his company and enjoyed his ingenious discourse. Charles II knighted him. Shortly before he fled the country, James II granted the Petty family an even more extraordinary favour. Petty had married Elizabeth Fenton, who was the widow of Sir Maurice Fenton and the daughter of Sir Hardress Waller. Sir Hardress had been an ardent supporter of Cromwell. He was not only a Major General in the New Model Army, but he also signed the execution warrant for Charles I, the father of Charles II and James II. Nonetheless, James II elevated Petty's widow, Elizabeth, to the Irish peerage as Baroness Shelburne and his eldest son as Lord Shelburne.²

Petty's most enduring accomplishment may be the great fortune and, therefore, position that he left to his family. Both of his sons died without issue, so the estate passed to his daughter Anne. She married Thomas Fitzmaurice, the 21st Lord of Kerry, whose ancestors came to Ireland with the Norman conquest. To honour Petty, their descendants went by the name of Petty Fitzmaurice, sometimes simply Petty. They came to hold the English titles of Lord Shelburne and the Marquis of Lansdowne. The Hon. Thomas Petty Fitzmaurice was a gentleman boarder in the residence of Adam Smith at the University of Glasgow from 1759 to 1762. His older brother, William Petty by name, the second Earl Shelburne, was later Prime Minister. Henry Petty Fitzmaurice, the third Marquis of Lansdowne, was Chancellor of the Exchequer in David Ricardo's day and a close friend of Ricardo. The Ricardo estate at Gatcombe Park was close enough to the Petty Fitzmaurice estate at Bowood for occasional visits. In the middle of the nineteenth century, Karl Marx (1904 [1859]:60n) noted that “William Petty was not only the father

of English Political Economy, but also the ancestor of Henry Petty, alias Marquis of Lansdowne, the nestor of English Whigs.”

His method

Petty began with the scientific methodology of Francis Bacon. In his first publication,³ *The Advice of W.P. to Mr. Samuel Hartlib, for the Advancement of some particular Parts of Learning*, he proposed a programme for the study of the applied arts and sciences along the general lines proposed by Bacon for science.⁴ Samuel Hartlib was one of his lifelong friends. Petty wanted a history of trades compiled to reveal all the mysteries of manufacturing in order to aid inventors.⁵ Like Bacon, Petty reacted against the metaphysics of Aristotle and the schoolmen. As a medical doctor, who served as professor of anatomy at Oxford, he approached economics from the natural science point of view. Petty stressed the need for careful observation in his *Political Anatomy of Ireland*.

SIR Francis Bacon, in his *Advancement of Learning*, hath made a judicious Parallel in many particulars, between the Body Natural, and Body Politick, and between the Arts of preserving both in Health and Strength: And it is as reasonable, that as Anatomy is the best foundation of one, so also of the other; and that to practice upon the Politick, without knowing the Symmetry, Fabrick, and Proportion of it, is as casual as the practice of Old-women and Emphyricks.

(Petty 1963 [1672]:129)

Accurate description was only a first step, however. Bacon wanted to base science not only on careful observation of the facts of nature, but also on experimentation and inductive logic.

In contrast, Petty used facts about society to construct arithmetical illustrations rather than conduct laboratory experiments. His logic was mainly deductive rather than inductive. He explained his methodology in *Political Arithmetick*:

The Method I take to do this, is not yet very usual; for instead of using only comparative and superlative Words, and intellectual Arguments, I have taken the course (as a Specimen of the Political Arithmetick I have long aimed at) to express my self in Terms of *Number, Weight, or Measure*; to use only Arguments of Sense, and to consider only such Causes, as have visible Foundations in Nature; leaving those that depend upon the mutable Minds, Opinions, Appetites, and Passions of particular Men, to the Consideration of others.

(Petty 1963 [1676]:244)

Charles D’Avenant (1967 [1698]:I, 128) accurately described Petty’s new method of political arithmetic as “the art of reasoning by figures, upon things relating to government.” His data were based upon “Observations or Positions expressed by

Number, Weight, and Measure” which Petty (1963 [1676]:244–5) put forth as “suppositions” for the sake of argument, not as verified statistics. They were hypothetical matters of fact. His theory came from “such Causes, as have visible Foundations in Nature.” He had theoretical notions, right or wrong, and factual suppositions, true or false, on which he based his policy recommendations to the government.

What Petty meant by the “visible Foundations of Nature” is not clear, because he used the term “nature” in a variety of different ways. Sometimes he had an economic hypothesis in mind: “the natural fall of Interest, is the effect of the increase of Mony” (Petty 1963 [1676]:304). Sometimes he meant an equilibrium condition: “the natural Value of the Land” (Petty 1963 [1672]:180). Sometimes he was thinking of natural rights: “Tricks and Words destroy natural Right and Property” (Petty 1963 [1672]:202). Sometimes he referred to natural law: “they are against the Laws of Nature” (Petty 1963 [1682b]:445). His use of the word natural seems to be mainly a rhetorical device. His theoretical notions were more clearly, if not convincingly, stated.

Social accounting

Petty made frequent use of social accounting in his writings. Social accounting requires two things: first, the collection or estimation of economic statistics; second, the conceptual or theoretical framework to organize the statistics. The statistics alone may be considered merely miscellaneous facts, which is why Tjalling Koopmans (1947) accused A.F. Burns and W.C. Mitchell (1947) of “Measurement without Theory” in his review of their *Measuring Business Cycle*. Petty was not guilty of this charge. Petty’s numbers were sometimes dicey, but, as D’Avenant (1967 [1698]) noted, he was writing before much essential official data were public. Petty’s social accounting framework was remarkably sound in principle. His best work was the National Income and Product Account (Table 2.1) and the corresponding National Wealth Account for England and Wales for 1665, which appeared in *Verbum Sapienti*.

Verbum Sapienti was written to advise the Crown on the state of the economy and, more particularly, the tax base at the time of the Second Dutch War of 1665–67. The object was to finance army and navy operations. The same motive prompted the construction of the National Income Accounts in Britain, Canada and the United States during World War II. The chief difficulty with Petty’s accounts is his failure to state fully and clearly the principles on which they were based. This is a common fault among economists. How many different interpretations of the Marshallian demand curve exist? Marshall’s theory must be inferred, so too must the theory behind Petty’s accounts.

First, the National Product takes account of only consumption. This is not unusual. Adam Smith (1976 [1776]:660) said “Consumption is the sole end and purpose of all production.” Neoclassical marginal utility theorists count only current and expected consumption as production, since this is the output that enters the utility function. As Marshall (1961 [1890]: 63) said, a worker “really only produces utilities.” Second, the absence of investment implies that Petty was modelling a stationary state, where net new investment is zero, so future consumption per year equals current consumption. His measure of output is the net national product. He certainly did not ignore the previously accumulated stock of capital, as Table 2.2 shows. Third, where the foreign trade account

is balanced, net exports are also zero. Fourth, he reckoned government purchases at about £1.3 million to be financed off of the Crown estates, the stock (in this case, land and capital) and the people. If these funds are spent on consumption by the servants of the Crown, they are already accounted for in consumption. Fifth, the proceeds from the sale of the National Product are distributed as wages, profit and rent. In *Verbum Sapienti*, Petty (1963 [1665]:108) separated the rent of land from the “yield”, that is, profit, of “Money and other personal Estates.” In *Political Arithmetick*, Petty (1963 [1676]:307) referred

Table 2.1 National Income and Product Account for England and Wales, 1665 (in millions)

Rent	£8	Consumption	£40
Profit	£7		
Wages	£25		
National Income	£40	Net National Product	£40

Source: Petty (1963 [1665]).

Table 2.2 National Wealth Account for England and Wales, 1665 (in millions)

Land	£144	Net Worth	£666 ² / ₃
Stock:			
Houses	30		
Shipping	3		
Cattle	36		
Coin	6		
Moveables	31		
Labour	416 ² / ₃		
National Wealth	£666 ² / ₃	Net Worth	£666 ² / ₃

Source: Petty (1963 [1665]).

to “the Rents, and Profits of their Land, and Stock.” Thus, he saw that stock, a synonym capital, yields profits just as land yields rent.

Corresponding to wages, profit and rent are three factors of production: labour, capital and land, to which Petty often referred. For example, “Taxes in England are not Levied upon the expence,” Petty (1963 [1676]: 301) complained, “not upon Lands, Stock, and Labour, but chiefly upon Land alone.” The items listed under the heading of Stock in the National Wealth Account are clearly capital goods: they are things produced that are not consumed. In *Verbum Sapienti*, Petty (1963 [1665]:105–8) directly estimated the values of various kinds of capital goods, including housing, as shown in Table 2.2. He then calculated the “yield” on these capital goods at a higher rate of interest than the rent of land.⁶ He often referred to capital as stock, but occasionally Petty (1963 [1676]:251–2) used the more modern word capital: “The Hollanders Capital in the *East-India* Company, is worth above Three Millions.” The value of land and labour equals the discounted present value of rent and wages at various rates of interest.⁷ If foreign borrowing and

lending was negligible, net foreign investment would be near zero; and since domestic lending and borrowing cancel out, financial asset against liability, net worth is the only claim on the national assets.

Petty identified three factors of production and three corresponding sources of income, but he typically used words in their everyday sense. In the popular sense, rent is whatever is paid for the use of land, including capital improvements. In his *Political Arithmetic*, Petty (1963 [1676]:305-6) estimated the average wage “between the highest and the lowest” at £7 per annum, so that he did not treat labour as a homogeneous mass. Nor was this a subsistence wage, for he thought labourers could bear a ten per cent tax by reducing their expenses by a twentieth and increasing their work by a twentieth.⁸ Petty’s popular concepts of wages, profit and rent are closer to the concepts of classical economics, however, than to the concepts of modern national income accounts, which are defined according to the availability of modern data, not theoretical subtleties. The proceeds from the sale of the (net) national product is distributed as income to the factors of production.

Petty is the true father of social accounting. Antoin E. Murphy has even traced the treatment of the circular flow of income by Richard Cantillon to Sir William Petty, who wrote:

If there be 1000 men in a Territory, and if 100 of these can raise necessary food and raiment for the whole 1000. If 200 more make as much commodities, as other Nations will give either their commodities or money for, and if 400 more be employed in the ornaments, pleasure, and magnificence of the whole; if there be 200 Governours, Divines, Lawyers, Physicians, Merchants, and Retailers, making in all 900 the question is, since there is food enough for this supernumerary 100 also, how they should come by it?

(Petty 1963 [1662]:30)

Cantillon (1931 [1755]:87–93) presented a similar analysis. Murphy (1986:260) concluded that “It was Cantillon’s analysis which no doubt inspired Quesnay to encapsulate the process in the *tableau économique*” Schumpeter (1954:217–23) argued that Cantillon is the link between Petty and Quesnay. The zig-zag *Tableau Économique* is sort of a sequential income and expenditure table, whereas the later *Analyse du Tableau Économique* by Quesnay measures the national income and product for a single year. Petty’s National Income Account in Table 2.1 measures the flow of income and output for one year and his National Wealth Account in Table 2.2 is a balance sheet constructed as at the end of the year like their modern equivalents.

Petty saw that the price of commodities equals their cost of production, which consists of wages, profit and rent, but he did not develop a well-articulated theory of the regulation of value, that is, a theory of price determination. His discussion of the natural and political price of things in his *Treatise of Taxes* and his distinction between the intrinsic and extrinsic value in his *Dialogue of Diamonds* does not go beyond an elementary cost theory of price. He focused instead on the origin of value and the measure of value.

The origin of value: land and labour

Petty's theory of the origin of value came from his old friend Thomas Hobbes, who claimed in the *Leviathan* that all commodities come from land and labour.

As for the Plenty of Matter, it is a thing Limited by Nature, to those commodities, which from (the two breasts of our common Mother) Land, and Sea, God usually either freely giveth, or for labour selleth to mankind.

(Hobbes 1968 [1651]:295)

Thus, Hobbes traced the physical origin of commodities back to a state of nature in which all the material things on earth were originally free gifts of God that cost labour only the trouble of gathering them. This suggests a theory of value where commodities are exchanged. The state of nature precedes the accumulation of capital. In civil society, Hobbes explained that the commonwealth or state determines the rules of property.

Petty (1963 [1662]:68) accepted Hobbes's theory of the origin of commodities: "Labour is the Father and active principle of Wealth, as Lands are the Mother." Wealth signifies value. Petty passed this theory on to Richard Cantillon (1931 [1755]:3), who repeated the aphorism in the first sentences of his *Essai*: "The Land is the Source or Matter from whence all Wealth is produced. Labour is the work which produces it." Thus, Hobbes and Petty introduced the materialist fallacy into English political economy by tracing all commodities back to the physical things provided by nature.

The significance of this doctrine is twofold. First, it claims that value comes from production, so that it is a production theory of value. Land and labour are the cause, source or origin of value. Second, it breaks with the Aristotelian tradition—followed by the scholastic doctors, Hugo Grotius, Samuel Pufendorf and others—that utility, usefulness or demand is the origin of value. By making land and labour the origin of value, Petty took a step toward a pure labour theory of value, which maintains that labour is the sole value-creating substance.

The next step toward a labour theory of value is the notion that the value of commodities produced today incorporates the value of the commodities used up producing them, and that those commodities embody past labour, and so on back in time. Petty had this sequence in mind in his discussion of taxation:

It seems reasonable, that what we call the Wealth, Stock, or Provision of the Nation, being the effect of the former or past labour, should not be conceived to differ from efficiencies in being, but should be rated alike, and contribute alike to the common necessities: And then of all and every summ to be raised, the Land and Stock must pay 3 parts; and the People considered without any Estate at all, 5 more; the whole into 8 divided.

(Petty 1963 [1665]:110)

That is, taxes should be levied on land, capital and labour. Petty (1963 [1665]:114) repeated this notion a little later when he objected to taxes "Laying the whole Burthen on the past Effects, and neglecting the present Efficiencies." He left this notion for John

Locke to explain more eloquently and unambiguously in his discussion of the labour embodied in the bread we eat. This retrospective accounting for the past labour embodied in commodities was repeated uncritically by Adam Smith, David Ricardo and Karl Marx.⁹ Today, Petty's notion of "past labour" may be better understood in terms of Piero Sraffa's (1960) book, *The Production of Commodities by Means of Commodities*.

Productive and unproductive labour

The concept of "past labour" entails the same materialist fallacy that lies behind Adam Smith's distinction between productive and unproductive labour. Productive labour adds value to physical commodities that survives the period of production. They embody "past labour." In contrast, the value of unproductive labour vanishes in the instance of its performance. This is not the same as the distinction between the production of goods and the production of services, because some services add value to physical commodities, as, for example, transportation services add value to commodities. The concept of productive labour entails a materialist fallacy because of the importance it attributes to physical things in economics.

Petty distinguishes between productive and unproductive labour in his discussion of the supposed superiority of durable over perishable commodities. As a mercantilist, he recommends state intervention to tax the consumption of unnecessary perishable goods.

Suppose that Money by way of Tax, be taken from one who spendeth the same in superfluous eating and drinking; and delivered to another who employeth the same, in improving of *Land*; in *Fishing*, in working of *Mines*, in *Manufacture*, &c. It is manifest, that such Tax is an advantage to the State whereof the said different Persons are Members: Nay, if Money be taken from him, who spendeth the same as aforesaid upon *eating* and *drinking*, or any other perishing Commodity; and the same transferr'd to one that bestoweth it on *Cloaths*; I say, that even in this case, the Commonwealth hath some little advantage; because *Cloaths* do not altogether perish so soon as *Meats* and *Drinks*: But if the same be spent in *Furniture of Houses*, the advantage is yet a little more; if in *Building of Houses*, yet more; if in improving of *Lands*; working of *Mines*, *Fishing*, &c. yet more; but most of all, in bringing Gold and Silver into the Country: Because those things are not only not perishable, but are esteemed for Wealth at all times, and every where.

(Petty 1963 [1676]:269)

Unproductive labourers for Petty includes people who

do nothing at all, but *eat* and *drink*, *sing*, *play*, and *dance*; nay to such as study the *Metaphysicks*, or other needless *Speculation*; or else employ themselves in any other way, which produce no material thing, or things of real use and value in the Commonwealth.

(Petty 1963 [1676]:270)

Thus, productive labour makes material things that survive the period of production; unproductive labour supplies commodities that soon perish. Petty ranks the usefulness of labour to the nation by the durability of the commodity produced: the greater the durability, the more advantageous to the commonwealth. The suggestion that it would be advantageous to tax producers of less durable goods and to transfer the funds to the producers of more durable goods makes Petty a mercantilist, according to Adam Smith, whose broad definition of mercantilism was a system of preference or restraint. Petty also advocated a customs duty on imports, especially finished consumer goods and luxuries.¹⁰ His comment on gold and silver smacks of bullionism. The fact that gold and silver do not readily wear out was of great importance to John Locke. The fallacious idea that wealth consists of gold and silver was Smith's narrow definition of mercantilism. This is contrary to Petty's theory of national wealth, which, in a thoroughly modern way, counts the present value of the services of land, physical capital goods and labour as wealth.

While the degree of durability goes beyond Smith's definition of productive and unproductive labour, Smith also distinguished between expenditures according to their degree of durability, in the same chapter.

The revenue of an individual may be spent, either in things which are consumed immediately, and in which one day's expence can neither alleviate nor support that of another; or it may be spent on things more durable, which can therefore be accumulated, and in which every day's expence may, as he chuses, either alleviate or support and heighten the effect of that of the following day.

(Smith 1976 [1776]:346)

Smith then continued in the same vein as Petty, using the same examples and reaching the same welfare conclusion that durable commodities are more favourable to the wealth of nations than perishable commodities.

As the one mode of expenditure is more favourable than the other to the opulence of the individual, so is it likewise to that of a nation. The houses, the furniture, the cloathing of the rich, in a little time, become useful to the inferior and middling ranks of the people.

(Smith 1976 [1776]:347)

Smith is so close to Petty that it is hard to believe that it is a coincidence.¹¹ The conjectural welfare benefits of durable commodities for the individual and the nation seem out of place in a book that advocated liberty for the individual and a policy of *laissez-faire* for the nation.

While Smith did not cite Petty and while his tracts are not listed by Mizuta (1967) as being in the library of Smith, he was familiar with Petty's ideas. *Political Arithmetick* was published by Robert and Andrew Foulis in Glasgow in 1751, the year Smith was appointed Professor. According to Ian Ross (1995:140), Smith was "warmly interested" in the Foulis Press. On several occasions, Smith corresponded with Petty's great-grandson, also named William Petty, and compared the work of the great-grandson to the ideas of the great-grandfather. Even though Smith (1976 [1776]:534) said he had "no

great faith in political arithmetic,” he appears to have been influenced, directly or indirectly, by Petty’s concepts, theories and policies.

It is always possible, of course, that Smith adopted the doctrine of durability from Richard Cantillon. Smith (1976 [1776]:85) cited Cantillon once, while Cantillon (1931 [1755]) cited and followed Petty on several points. On the doctrine of durability, Cantillon is close to Petty:

If the 25 persons in a hundred of whom we have spoken were employed to produce permanent commodities, to draw from the Mines Iron, Lead, Tin, Copper, etc. and work them up into Tools and Instruments for the use of Man, bowls, plates and other useful objects much more durable than earthenware, the State will not only appear to be the richer for it but will be so in reality.

(Cantillon 1931 [1755]:89)

Hence, a filiation of ideas runs indirectly from Petty to Cantillon and from Cantillon to Smith, if not directly from Petty to Smith, perhaps even from Hume to Smith.¹² The French physiocrats and François Quesnay were not the first to write on productive and unproductive labour, and Smith did not follow their definitions. For Quesnay, agricultural labourers are productive, because land yields a surplus product; for Smith, manufacturing labourers are productive, because they make physical commodities that survive the period of production.¹³

Two measures of value: land and labour

In his *Treatise of Taxes and Contribution*, Petty sought a measure of value that was independent from the fluctuating values of gold and silver. He adopted a concept that was consistent with his theory that land and labour were the origin of value.

All things ought to be valued by two natural Denominations, which is Land and Labour; that is, we ought to say, a Ship or garment is worth such a measure of Land, with such another measure of Labour; foras-much as both Ships and Garments were the creatures of Lands and mens Labours there upon; This being true, we should be glad to finde out a natural Par between Land and Labour, so as we might express the value by either of them alone as well or better then by both, and as we reduce pence into pounds.

(Petty 1963 [1662]:44–5)

Since value comes from two sources, Petty thought that it should be measured in two ways: by land and by labour. The claim that both land and labour create the value of ships and garments is a theory of the origin of value, a theory which explains what makes things valuable. The two natural denominations of value also connote a theory of the measure of value, a theory which explains how to compare the value of things. The two measures of value follow logically from the double origin of value.

In his *Political Anatomy of Ireland*, Petty (1963 [1672]:181) returned to his theory of measurement, which he called “the most important Consideration in Political Oeonomies, viz. how to make a *Par* and *Equation* between Lands and Labour, so as to express the Value of any thing by either alone.” He illustrated this with the parable of the calf. The calf is fattened in a field without the assistance of labour. The increase in the weight of the calf is the rent of land. Thus, land is a source of value without any labour. Petty then asked how much food a man could grow on the same field. The wages of the workman consist of the excess value of the harvest over the increase in the value of the calf. Thus, both land and labour produce value, separately and independently. The two products could, therefore, be measured and compared. “The days food of an adult Man, at a Medium, and not the days labour,” Petty (1963 [1672]:181) wrote, “is the common measure of value,” where he understood food to be “the easiest-gotten food of the respective Countries of the World.”

Richard Cantillon adopted Petty’s par between land and labour, though he was critical of Petty’s reasoning. Since he thought that land and labour were the origin of value, he was driven by logic to measure values by land and by labour. Petty’s measure of value is not at all rigorous, but it did influence later economists. The daily food of the labourer is Petty’s proxy for common measure of value. John Locke later used grain as his measure of value, and Smith treated it as an approximate measure.

Land and rent

Many authorities have found places where Petty seems to explain the prices of commodities by the labour embodied in them.¹⁴ They often point to the parable of a man trading silver from Peru for corn in England, where Petty (1963 [1662]:50) appears to define the natural price of commodities by the labour embodied in them: “If a man can bring to *London* an ounce of Silver out of the Earth of *Peru*, in the same time that he can produce a bushel of Corn, then one is the natural price of the other.” This statement was made, however, in the context of trying to measure the value of rent paid in corn by its value in money.

In his *Treatise of Taxes*, he explained the mysterious nature of rent with a hypothetical illustration. First he asked, what determines the rent of land in terms of corn?

Suppose a man could with his own hands plant a certain scope of Land with Corn, that is, could Digg, or Plough, Harrow, Weed, Reap, Carry home, Thresh, and Winnow so much as the Husbandry of this Land requires; and had withal Seed wherewith to sowe the same. I say, that when this man hath subducted his seed out of the proceed of his Harvest, and also, what himself hath both eaten and given to others in exchange for Clothes, and other Natural necessities; that the remainder of Corn is the natural and true Rent of the Land for that year

(Petty 1963 [1662]:43)

This is the rent of land in the popular sense, since it includes the profit on capital goods: the plough, harrow, and so on. It is a residual or surplus in the accounting sense. Second he asked, “how much English money this Corn or Rent is worth?”

I answer, so much as the money, which another single man can save, within the same time, over and above his expence, if he employed himself wholly to produce and make it; viz. Let another man go travel into a Countrey where is Silver, there Dig it, Refine it, bring it to the same place where the other man planted his Corn; Coyne it, &c. the same person, all the while of his working for Silver, gathering also food for his necessary livelihood, and procuring himself covering, &c. I say, the Silver of the one, must be esteemed of equal value with the Corn of the other: the one being perhaps twenty Ounces and the other twenty Bushels. From whence it follows, that the price of a Bushel of this Corn to be an Ounce of Silver
(Petty 1963 [1662]:43)

Again, rent is a residual or surplus in the accounting sense, because it is “over and above his expenses.” The production of corn clearly requires labour and land. Labour grows corn on a plot of land. The value of the corn is divided between the wages of labour and the rent of land. The miner digs silver from the bowels of the earth. The silver mine also produced a surplus of 20 ounces over the maintenance of the miner. Both land and labour create value. The market prices of silver and corn equal the wages of labour plus a rent or surplus due to land, whereas in a pure labour theory of value labour alone creates value.

The incidence of taxation is the acid test whether rent is an economic surplus or a cost of production. In his *Treatise of Taxes*, a few pages before his explanation of the mysterious nature of rent, Petty (1963 [1662]:37) maintained that a tax on rent would be shifted on to the tenant: “If the Gentleman had his Land taxed in his own hand, then being taxed a fifth part, he would raise his Rents near the same proportion upon his under tenants.” The tenants in turn would shift the tax on the consumer, so Petty (1963 [1662]:39) deduced, “it is not only the Landlord payes, but every man who eats but an Egg, or an Onion of the growth of his Lands; or who useth the help of any Artisan, which feedeth on the same.” Evidently everyone pays some of the tax. Thus, the rent of farmland is a cost of production, not a pure economic surplus.

Petty (1963 [1662]:55) did recognize pure rent in the economic sense in his discussion of the tin mines of Cornwall, but he called it an “extra-ordinary profit.” He did not use Ricardo’s artificial definitions, which are often still used today.

Now suppose Tin might be made in *Cornwall* for four pence the pound, and that the same would yield twelve pence at the nearest part in *France*, I say, that this extraordinary profit ought to be esteemed as a Mine Royal, *Tresor Trouvè*, and the Sovereign ought to have his share in it: Which he will have, by imposing so great a duty upon Tin Exported, as on one side may leave a subsistence to the Workmen, (and no more) with a competent profit to the owners of the ground; and on the other side, may leave the price abroad less then that for which Tin may be had from any other place.
(Petty 1963 [1662]:55)

This “extraordinary profit” is a rent in the narrowest sense of the term. It is the excess of price over all necessary costs; and it can be taxed away without affecting production. It is not a monopoly profit, because tin faces competition on the world market. This “extraordinary profit” arises from a superior gift of nature, not from a monopolist exploiting a downward sloping demand curve by restricting output and raising price. The “competent profit to the owners of the ground” may refer to a profit on the invested capital or to the next best alternative rent of the land. Perhaps it is simply a fair return to the landlord.

The rent of land depends on the density and growth of the population and on the location and quality of the land. Petty looked back to an original state of nature to explain the origin of rent. In earliest ages of society, when people were few, they lived by hunting, fishing, gathering or herding. In this primitive society, Petty (1963 [1662]:34) thought they must be poor and unskilled: “If the people be so few, as that they can live, *Ex sponte Creatis*, or with little labour, such as is Grazing, &c. they become wholly without Art.” There can be no industry, no commerce, no cities. In this state of things, land was unimproved, unproductive and almost worth-less. “Now the Original and Primitive difference holds proportion as Land to Land, for it is hard to say, that when these places were first planted, whether an Acre in *France* was better than the like quantity in *Holland* and *Zealand*” (Petty 1963 [1676]:250). The value of land was mainly due to the improvements to it. Even in Restoration England, Petty (1963 [1682a]: 474–5) thought that much land was still available and awaiting development, for he stated that “there are many Acres of unimproved improvable Land to every Head.”

The growth of population raises rents and increases the value of land, as he illustrated comparing England, Holland and Ireland.

Land of the same quantity and quality in *England*, is generally worth four or five times as much as in *Ireland*; and but one quarter or one third of what it is worth in *Holland*; because *England* is four or five times better Peopled than *Ireland*, and but a quarter so well as *Holland*.

(Petty 1963 [1676]:286)

A greater population required cultivation by more intensive methods and the growing of crops of greater value. “Land of the same quantity and quality” was worth more in Holland than in England, not primarily because an acre of land produced so much more corn or cattle, but because the Dutch grew more specialized crops at home and imported calves and corn from abroad:

The other Trade of which the *Hollanders* have rid their Hands, is the old Patriarchal Trade of being Cow-keepers, and in a great Measure of that which concerns Ploughing and Sowing of Corn, having put that Employment upon the *Danes* and *Polanders*, from whom they have their Young Cattle and Corn.

(Petty 1963 [1676]:267)

Improvements to the land went with an increase in the density of population. They were signs of national prosperity. Petty (1963 [1676]:268) suggested that agriculture in

England might be improved by raising “Grass Horses, Milch Cows, Gardens, and Orchards, &c.” If rent was paid mainly for improvements to the land, the classical economists would have called it profit. They would maintain, like Petty, that a tax on improvements would soon be passed on to the consumer.

Location also affects the rent of land. The price of food is greater near the city than in the provinces because of the greater density of population. If, for example, wrote Petty (1963 [1662]:48) “the Corn which feedeth *London*, or an Army, be brought forty miles thither, then the Corn growing within a mile of *London*, or the quarters of such an Army, shall have added unto its natural price, so much as the charge of bringing it thirty nine miles doth amount unto.” Transportation costs raise the price of food as the distance travelled increases. This “natural price” of corn evidently refers to the price in outlying regions on the extensive margin of cultivation. Equally fertile and well-cultivated land near the city earns a rent equal to its differential advantage in transportation costs. Location differentiates land, so that a rent is paid for a superior land.

Population and the division of labour

Petty’s essays on population proceeded along the lines of *Observations on the Bills of Mortality* by his friend John Graunt (1963 [1662]).¹⁵ In *Another Essay in Political Arithmetick*, Petty (1963 [1682a]:460–4) estimated that the population of London doubled in every forty years, while the population of England doubled in only 360 years. The evidence that London was growing much faster than England led him to conclude that there was an upper limit to the size of the city, because it would eventually pass the whole country. Even though Petty emphasized that the rate of population growth in the past was quite variable and speculative, he still tried to estimate the population of the earth since the time of Noah, for which he was criticized by Richard Cantillon (1931 [1755]:83).

His theory of population growth was more clearly expressed for the city than for the country. For the country, Petty (1963 [1687]:605) explained the growth of population by the production of food and other necessities: “Great Britain and Ireland can with moderate Labor food and other Necessaries to near double the present People or to about 20 Millions of heads.” For the city, he turned to the division of labour. In the clothing trade, for example,

Cloth must be cheaper made, when one Cards, another Spins, another Weaves, another Draws, another Dresses, another Presses and Packs; than when all the Operations above-mentioned, were clumsily performed by the same hand.

(Petty 1963 [1676]:260)

And again in the case of watch making:

In the making of a *Watch*, If one man shall make the *Wheels*, another the *Spring*, another shall engrave the *Dial-plate*, and another shall make the

Cases, then the *Watch* will be better and cheaper, than if the whole Work be put upon any one Man.

(Petty 1963 [1682a]:473)

The possibilities for the division of labour increasing the productivity of labour were evidently more limited in agriculture than in manufacturing, as Adam Smith would later observe. Consequently, the City of London grew more rapidly than the whole of England. Manufacturing was the engine of economic growth for Petty.

From this analysis, Petty drew a fanciful policy conclusion, which he did not intend to be taken seriously, to wit, transporting the people of Ireland and the Highlands of Scotland to the rest of Great Britain in order to increase production.

And here I beg leave, (among the several matters which, I intend for serious,) to interpose a jocular, and perhaps ridiculous digression, and which I indeed desire Men to look upon, rather as a Dream or Resvery, than a rational Proposition; the which is, that if all the *moveables* and People of *Ireland*, and of the Highlands of *Scotland*, were transported into the rest of *Great Brittain*; that then the King and his Subjects, would thereby become more *Rich* and *Strong*, both *offensively* and *defensively*, than now they are.

(Petty 1963 [1676]:285)

He calculated that the increase in the wealth of Great Britain due to an increase in the density of population and, therefore, the increase in the rent and value of land would more than compensate for the property that would be abandoned and the cost of the resettlement. Jonathan Swift appears to have been satirizing Petty in his *Modest Proposal*.¹⁶ There is perhaps not a better illustration of the deductive nature of Petty's logic.

Money and interest

Monetary theory is relevant to Petty's theory of value, because he used the rate of interest to capitalize wages and rent in order to arrive at the values of labour and land. As his National Wealth account shows, money was a small part of the wealth of the nation:

All the wealth of this Nation, *viz.* Lands, Housing, Shipping, Commodities, Furniture, Plate, and Money, that scarce one part of an hundred is Coin; and that perhaps there is scarce six millions of Pounds now in *England*, that is but twenty shillings a head for every head in the Nation.

(Petty 1963 [1662]:34–5)

He went on to estimate the income velocity of circulation using the cash balance approach. Since wages are paid weekly, while rents and taxes are paid quarterly, common labourers need cash for only a week, whereas landlords need enough to cover a quarter.

The total quantity of money necessary to drive trade is determined by the weighted average of the two periods of circulation. He passed this idea on to John Locke and Richard Cantillon.

The rate of interest is a reward for parting with liquidity, as Petty (1963 [1682b]:446) explained in his *Quantulumcunque concerning Money*: “A Reward for forbearing the use of your own Money for a Term of Time agreed upon.” The lowest possible rate of interest, according to Petty, is

the Rent of so much Land as the money lent will buy, where the security is undoubted; but where the security is casual, then a kinde of ensurance must be enterwoven with the simple natural Interest, which may advance the Usury very conscionably unto any height below the Principal it self.

(Petty 1963 [1662]:48)

Thus, the interest rate equals the rate on the most secure investment, which was land, plus a risk premium. He overlooked the illiquidity of land. Any attempted by the state to fix the rate of interest would be “the vanity and fruitlessness of making Civil Positive Laws against the Laws of Nature” (Petty 1963 [1662]:48).

After observing that the rate of interest had fallen in the past half century, Petty explained that the quantity of money had increased, because trade had increased.

If *rented Lands, and Houses*, have increased; and if *Trade* hath increased also, it is certain that mony which payeth those *Rents, and* driveth on *Trade*, must have increased also.

(Petty 1963 [1676]:304)

This reduced the rate of interest because “the natural fall of Interest, is the effect of the increase of Mony” (Petty 1963 [1676]:304). Petty passed this theory on to Locke.

Conclusion

Sir William Petty presented his economic theory in the form of little parables, which conveyed original, but often disconnected, ideas. He did not have a labour theory of market prices, as some authorities claim, but he took two important steps toward it. First, following Hobbes, he claimed that wealth was produced by land and labour. This is a production theory of the origin of value like the labour theory of value. It broke with the Aristotelian tradition of utility as the origin of value. Second, he explained that capital or stock was due to “past labour.” The notion of “past labour” eliminates capital as an independent source of commodities.

His social accounts show that the total output of society is distributed to land, labour and capital in the form of rent, wages and profits. The owners of land, labour and capital each receive a part of the value produced, so that the price of commodities equals their cost of production.

Petty had an elementary cost of production theory of the regulation of value, even though he emphasized that land and labour were the origin of value. He also presented a

theory of the measure of value based on the par between land and labour. The concepts of the origin, measure and regulation of value became fundamental to classical and early neoclassical economics. His insight into the theories of value, national income and product, money and interest, the division of labour and the rent of land influenced his immediate successors, like Locke and Cantillon, but they did not travel much further with Petty's name stamped on them. They became part of the received tradition in economics.

3

John Locke

The classical perspective

A brief life of John Locke

John Locke (1632–1704) was born at Wrington, Somerset, into a gentry family of moderate property and puritan sympathies. His father, also named John Locke, served as a captain in the parliamentary regiment commanded by Alexander Popham under Major General Sir Hardress Waller, Petty's future father-in-law. Through the influence of Popham, Locke was admitted to Westminster School in 1647. Under the discipline of that school, he mastered Latin, Greek and Hebrew sufficiently well to be awarded a studentship, a sort of fellowship, to Christ Church, Oxford. He arrived in the fall of 1652, a few months after Sir William Petty had taken leave of his professorship in anatomy and departed for Ireland. Like Petty, Locke developed a strong distaste for the scholastic disputations that dominated Oxford in those days.¹

After receiving his BA in 1656 and MA in 1658, Locke gradually turned his attention to natural philosophy, instead of the more usual career for an Oxford student in the clergy or the law. His studentship allowed him to remain at Oxford as a tutor, and then in turn as a lecturer in Greek, rhetoric and moral philosophy. He became good friends with Robert Boyle and studied the natural sciences with him. Later he kept a weather diary for him. Both Locke and Boyle were originally destined to be clergymen. Boyle turned to scientific experiments, while Locke wanted to study medicine, except that his studentship at Christ Church obliged him to take holy orders. In 1666, the Earl of Clarendon, Lord High Chancellor to Charles II, intervened on his behalf by requesting the university to dispense with the standard requirements and grant Locke a medical degree. When the university failed to act, Locke was granted royal dispensation to continue his studentship at Christ Church without taking holy orders.² Locke could, therefore, continue his study of medicine as long as the dispensation remained in force, though perhaps at the price of disaffecting the college faculty.

In the summer of 1667, he left Oxford for London at the invitation of Anthony Ashley Cooper, then Lord Ashley, who was Chancellor of the Exchequer. Locke became his physician, adviser, loyal supporter, friend and companion. He wrote two tracts soon after he went to London. First, his *Essay concerning Toleration* appealed for moderation in the midst of the religious fanaticism that had engulfed England. Not only had differences between the Protestants and Catholics become irreconcilable, but penal laws had also been enacted and enforced against Protestant dissenters from the established Church of England. Second, his *Some of the Consequences that are like to Follow upon Lessening of Interest to 4 per cent* (1991 [1668]) offered advice to Lord Ashley on monetary policy. It addressed a bill that had been introduced in Parliament to reduce the legal rate of

interest from six to four per cent. Josiah Child, a principal advocate of the bill, claimed that low interest rates were the cause, not the effect, of national prosperity.³ Locke maintained that reducing the legal rate of interest below the market rate would harm trade and could be easily evaded. While both of these papers concerned immediate political issues, neither was published for many years. During this period, Locke also continued his study and practice of medicine. In 1668, he was elected to the Royal Society, of which Petty and Boyle were founding members. Petty had taught Boyle anatomy in Ireland, while Boyle studied science with Locke at Oxford.

With the fall of Clarendon in 1672, Ashley was appointed Lord High Chancellor and made the first Earl of Shaftesbury. He appointed Locke to be Secretary of Presentations, which dispensed church patronage and Secretary to the Council of Trade and Plantations, which dealt with the colonies. These positions gave a good income, but it did not last for long. In 1673, Shaftesbury was dismissed as Chancellor. Locke then went to France, partly due to ill health, where he spent several years, met some leading intellectuals and resumed his study of philosophy.

When Locke returned to England in 1679, the country was in turmoil over the succession to the crown. Shaftesbury and his political allies in Parliament, who would form the Whig party, sought to exclude James from the throne. James was a Catholic and, for that reason, suspected of being an agent of a foreign power, particularly Louis XIV. Shaftesbury was arrested and unsuccessfully prosecuted for treason. He then became involved in a plot against the government, which made it necessary for him to flee to Holland, where he died the next year. Because of his association with Shaftesbury, Locke was no longer safe in England, so he left for Holland, too. While in Amsterdam, informers reported that Locke met with supporters of the Duke of Monmouth, who was planning to invade England and overthrow the government. Locke denied any complicity. At the request of Charles II, however, Oxford expelled him from his studentship at Christ Church and the Dutch issued a warrant for his arrest. He escaped capture by going into hiding. Maurice Cranston (1957:205–13) has argued that Locke first composed his *Two Treatises of Government* about 1681 or 1682, not to justify the Glorious Revolution of 1688, but to promote a revolution against Charles II.⁴ The invasion finally occurred in 1685, when James II was on the throne. The rebellion met its end at the battle of Sedgemoor. Monmouth lost his head at the Tower.

Locke felt safe to return to England in 1688 with the accession of William of Orange. He sailed on the same boat as Princess Mary. Locke was then 57 years old and had published little that bore his name, though he had been working on his material for many years. His *Eppistola de Tolerantia* was published anonymously in Holland in 1689. It was well-received and soon translated into English, Dutch and French. In 1690 he published his *Essay concerning Human Understanding*, which established his reputation as a major philosopher and set the course for British empiricism: Locke, Berkeley, Hume, Reid and J.S. Mill. In the same year, his *Two Treatises of Government* appeared. It made him an intellectual founding father of both the American and French revolutions as well as classical political economy. Both of these books were at first published anonymously.

This busy period saw Locke turn his attention again to economics. According to Peter Laslett (1971:25), Locke was consulted about Petty's *Political Arithmetic*, the publication of which had been long delayed.⁵ In addition, he revised and enlarged his earlier tract on interest rate policy that he had written to advise Shaftesbury when he was Chancellor of

the Exchequer. It was licensed for publication in 1691 as *Some Considerations of the Consequences of the Lowering of Interest, and Raising the Value of Money*. Aside from four years on the new Council of Trade and Plantations, he devoted much of the rest of his life defending and extending his now famous work on philosophy.

From the state of nature to civil society

John Locke presented his theory of political power in his *Two Treatises of Government*. The purpose of his *First Treatise* was to rebut the doctrine of the divine right of kings published by Sir Robert Filmer in his *Patriarcha*. Filmer had argued that, since Adam held absolute power, so too did all the princes who followed him. The purpose of his *Second Treatise* was to demonstrate that political power in civil society arises from the consent of the governed. He cast this argument in economic terms.

Like his predecessors, both ancient and modern, he traced the origin of civil society back to primeval times. The first society arose from the union between man and woman for the procreation and continuation of the species, as Aristotle had maintained. Locke's particular conception of the state of nature came from Hugo Grotius and Samuel Pufendorf, however, who argued that everyone is naturally equal and that no one is subordinate to anyone else. "This is a *State of Liberty*" wrote Locke, "yet it is *not a State of License*"

The *State of Nature* has a Law of Nature to govern it, which obliges every one: And Reason, which is that Law, teaches all Mankind, who will but consult it, that being all equal and independent, no one ought to harm another in his Life, Health, Liberty, or Possessions.

(Locke 1988 [1690]:271)

This is not a Hobbesian state of nature where the absence of human institutions leads to war of all against all. For Locke, the law of nature restrains people from harming those who have not injured them. Yet, all individuals seek their own preservation. Since they are not subject to the will of any other authority, they have the executive power to punish transgressors who invade their property and violate the law of nature, but individuals, like absolute monarchs, are often unjustjudges of their own cases. Civil government is the remedy for the conflict of interest that occurs when people act as their own judges. Civil government requires the consent of the people, who are otherwise free, equal and independent.⁶

In the earliest stage of society, the spontaneous produce of nature provided abundantly for the subsistence of mankind. No one had property in these gifts of nature. They were held in common. Where Grotius and Pufendorf emphasized the right of first occupancy, Locke introduced his labour theory of property rights.

Though the Earth, and all inferior Creatures be common to all Men, yet every Man has a *Property* in his own *Person*. This no Body has any Right to but himself. The *Labour* of his Body, and the *Work* of his Hands, we may say, are properly his. Whatsoever then he removes out of the State

that Nature hath provided, and left it in, he hath mixed his *Labour* with, and joyned to it something that is his own, and thereby makes it his *Property*. It being by him removed from the common state Nature placed it in, it hath by this *labour* something annexed to it, that excludes the common right of other Men. For this *Labour* being the unquestionable Property of the Labourer, no Man but he can have a right to what that is once joyned to, at least where there is enough, and as good left in common for others.

(Locke 1988 [1690]:287–8)

While all the material things of this world were originally the common property of all mankind, they became the private property of those individuals who first appropriated them and made them into commodities. Strictly speaking, this is an ethical theory, not an economic theory, but it is cast in terms of economic behaviour. Individuals pursue their economic well-being and are justly entitled to whatever they removed from nature for their subsistence. By the law of nature, however, they are only entitled to take what they can use before it spoils. Whatever exists beyond this they should leave for others.⁷

But, land is the principal form of property, not the spontaneous produce of nature. Land becomes private property by the same right as other things. “*As much Land as a Man Tills, Plants, Improves, Cultivates, and can use the Product of, so much is his Property*” wrote Locke (1988 [1690]:290–1). “He by his Labour does, as it were, inclose it from the Common.” The land of the plain like the water of the stream was not only a gift of nature but was also originally so abundant that it was a free good. No price was set upon it. Furthermore, Locke (1988 [1690]:172) argued, when God cast Adam out of Paradise, He commanded him to labour: “*In the sweat of thy face shalt thou eat thy bread, till thou return unto the ground, for out of it wast thou taken, for dust thou art, and unto dust shalt thou return.*” Tilling the soil obeys God’s commandment to labour. In the first ages of mankind, land came to be distributed according to a sort of digger’s rule of equality: no one possessed more land than one person could work. No one would prudently produce more than could be used before it spoiled. Furthermore, to let goods spoil would be to rob the rest of mankind of the useful things provided by nature.

Locke claimed that, even in his day, enough waste land existed so that all the inhabitants of the world could plant and claim as much land as they could work, if it had not been for the invention of money. By tacit agreement, Locke explained, following Aristotle, mankind put a value on money, a durable commodity that would not spoil and that could be exchanged for the necessities and conveniencies of life. With the growth of population and the accumulation of stock, the use of money put a value on land. By the invention of money, Locke reasoned,

Men have agreed to disproportionate and unequal Possession of the Earth, they having by a tacit and voluntary consent found out a way, how a man may fairly possess more than he himself can use the product of, by receiving in exchange for the overplus, Gold and Silver, which may be hoarded up without injury to any one, these metalls not spoiling or decaying in the hand of the possessor.

(Locke 1988 [1690]:302)

In this way, the natural equality of mankind that existed in the state of nature, where people were entitled to the fruits of their labour, became the inequality of property in civil society, where the positive laws of government protected the right of individuals to their possessions. In a state of nature everyone is free, equal and independent. No one is subject to the arbitrary will of anyone else, whereas in civil society, Locke (1988 [1690]:350) explained, everyone “seeks out, and is willing to joyn in Society with others who are already united, or have mind to unite for their mutual *Preservation* of their Lives, Liberties and Estates, which I call by the general Name, *Property*” Locke used the word property in two senses: the narrow meaning refers to tangible things; the broad meaning includes life, liberty, health, safety and security as well as material possessions. With the broad view in mind, Locke (1988 [1690]:329) declared that “Government has no other end but the preservation of Property.”

Government protected property by means of the administration of justice and national defence, the traditional duties of the state. Locke’s (1988 [1690]:353) system of justice required the establishment of “*standing Laws*” that are administered by “*indifferent and upright judges*.” The legislative power of government, according to Locke (1988 [1690]:363), should be bound by four principles: (1) “to govern by *promulgated establish’d Laws*, not to be varied in particular Cases, but to have one Rule for Rich and Poor, for the Favourite at Court, and the Country Man at Plough;” (2) “to be designed for no other end ultimately but *the good of the People*” (3) not to “*raise Taxes* on the Property of the People, *without the Consent of the People*, given by themselves, or their Deputies;” and (4) not to delegate legislative power. National defence was necessary “to prevent or redress Foreign Injuries, and secure the Community from Inroads and Invasion” (Locke 1988 [1690]:353). The limited role assigned to government by Locke, especially his strong objection to favouritism (“to have one Rule for Rich and Poor”), makes him a forerunner of the liberal economic policies of Quesnay and Smith. With respect to Locke’s theory of property, Gunnar Myrdal (1953:71) has maintained that: “In its purest form, the theory demands *laissez-faire*, for it implies the view of the ‘sacred’ right of man to the fruits of his work.”⁸

The origin of value: land and labour

The origin of value is not found in contemporary economics, because it examines pre-scientific, philosophical questions. Why do things have value in principle and in the abstract? What creates value? These questions rest on the metaphysical notion that value has a first cause as in the biblical account of creation. Nevertheless, the classical and early neoclassical economists emphasized the origin of value. Their explanations of it divided them into separate schools. The classical economists maintained that commodities have value because labour is necessary to produce them. The classical economists could not, however, explain why natural things have value. Why, for example, do the virgin forests of Norway have value? Labour did not create them. The early neoclassical economists answered that things have value because they are scarce relative to their usefulness or utility.⁹

Following Thomas Hobbes, Sir William Petty explained the origin of value by the land and labour necessary to produce commodities. Locke followed Petty,¹⁰ but their

theories served different purposes. Petty wanted to trace the value of things back to land and labour, so that he could measure value by these two natural dimensions. He got rid of capital by supposing that it was merely the past labour embodied in the accumulated stock of things. Locke 1988 [1690]:298) traced the value of commodities back to a state of nature in order to support his labour theory of property rights. He illustrated how commodities are an accumulation of past labour with his example of the bread we eat.

For 'tis not barely the Plough-man's Pains, the Reaper's and Thresher's Toil, and the Bakers Sweat, is to be counted into the *Bread* we eat; the Labour of those who broke the Oxen, who digged and wrought the Iron and Stones, who felled and framed the Timber employed about the Plough, Mill, Oven, or any other Utensils, which are a vast Number, requisite to this Corn from its being seed to be sown to its being made Bread, must all be *charged on* the account of *Labour*, and received as an effect of that: Nature and the Earth furnished only the almost worthless Materials, as in themselves. 'Twould be a strange *Catalogue of things, that Industry provided and made use of, about every Loaf of Bread*, before it came to our use, if we could trace them; Iron, Wood, Leather, Bark, Timber, Stone, Bricks, Coals, Lime, Cloth, Dying-Drugs, Pitch, Tar, Masts, Ropes, and all the Materials made use of in the Ship, that brought any of the Commodities made use of by any of the Workmen, to any part of the Work, all which, 'twould be almost impossible, at least too long, to reckon up.

(Locke 1988 [1690]:298)

This passage prompted J.R.McCulloch (1965 [1864]:11) to write that "Locke has here all but established the fundamental principle on which the science rests."¹¹ Locke believed that past labour accounts for most of the value of capital goods used in production. Adam Smith (1976 [1776]: 22–4) presented a similar line of reasoning in his long account of all the labour that is necessary to produce the woollen coat of a day labourer. Smith (1976 [1776]:330) repeated this claim where he wrote that the product of the manufacturer "is, as it were, a certain quantity of labour stocked and stored up to be employed, if necessary, upon some other occasion." David Ricardo, Karl Marx and most other classical economists repeated this argument to account for what Petty called "past labour." The seemingly innocent comment by Locke that all this labour "'twould be almost impossible, at least too long, to reckon up" is the Achilles heel of any empirical labour theory of value: The past labour embodied in the production of things today cannot be known.

While Locke (1988 [1690]:298) attributes value to both land and labour, like Petty, he gives a much greater emphasis to labour, because labour "*puts the greatest part of the Value upon Land*, without which it would scarcely be worth any thing."

I think it will be but a very modest Computation to say, that of the *Products* of the Earth useful to the Life of Man 9/10 are the effects of *Labour*: nay, if we will rightly estimate things as they come to our use, and cast up the several Expences about them, what in them is purely

owing to *Nature*, and what to *labour*, we shall find, that in most of them 99/100 are wholly to be put on the account of *labour*.

(Locke 1988 [1690]:296)

This is one step away from a pure labour theory of value. It may be called a 99 per cent labour theory of value, but it is not an empirical theory of price determination. It explains why things have value in principle and in the abstract. Locke (1988 [1690]:297) thought the benefit of unimproved land in a state of nature would “amount to little more than nothing.” He noted that the fertile land in America was almost worthless. In a passage that is similar to the line with which Smith ended his famous account of all the labour embodied in the woollen coat of a day labourer, Locke (1988 [1690]:297) observed, “a King of a large and fruitful Territory there feeds, lodges, and is clad worse than a day labourer in *England*.”¹²

J.A.Schumpeter (1954:120) contended that Locke’s justification for private property “has nothing whatever to do with a labor theory of value.” He is absolutely correct if he means a theory of price determination, that is, a theory of the regulation of value. Locke’s labour theory does not analyse the empirical phenomenon of market prices, which he treated elsewhere with his theory of supply and demand. His labour theory explains the original source of commodities. It supports his theory of property rights by looking back to earliest times and accounting for all the value added by labour to the things found in nature. The value added to commodities is mainly due to labour, land by itself being almost worthless. He treated land as a minor partner in the production of commodities, though both land and labour are the origin of value for Locke as they were for Petty.

In his *Second Treatise*, Locke (1988 [1690]:294) explained that the intrinsic value of things depends on their usefulness, where usefulness may be called value in use or utility. This was the Aristotelian theory of the origin of value. Locke went on to explain, however, that an acre of land in America and an acre of land in England may both yield twenty bushels of wheat and, therefore, be of the same intrinsic value, but the acre in England may be worth a thousand times as much as an acre in America. For this reason, when Locke (1991 [1692]:258) turned to the empirical phenomena of market prices in *Some Considerations*, his main tract on money, he added that “there is no such Intrinsic Natural settled value in any Thing, as to make the assign’d quantity of it, constantly worth the assigned quantity of another.” Goods must be useful to have value, but their usefulness or utility does not regulate or determine their value.

The Being of any *good*, and useful *quality* in any thing neither increases its *Price*, nor indeed makes it have any Price at all, but only as it lessens its quantity or increases its vent, each of these in proportion to one another. What more useful or necessary things are there to the Being or Well-being of Men, than Air and Water, and yet these have generally no Price at all, nor yield any Money: Because their quantity is immensely greater than their vent in most places of the World.

(Locke 1991 [1692]:255–6)

The market value of useful things depends on the quantity of them produced and brought to market relative to their usefulness. Like Adam Smith, David Ricardo and Karl Marx

after him, Locke recognized the utility was essential to value, but he did not explain the origin, measure or regulation of value with it.

Measures of value: money and corn

The practical importance of measuring values for Locke arose from the problem of inflation, which he described as a fall in the value of money. Gold and silver declined in value after the discovery of America and coins fell further in value due to clipping their edges and to debasing their gold and silver content. Since landlords often rented their land for a tenant's life, sometimes for many lives, the real value of their rental income declined when it was fixed in terms of money. It was, therefore, sensible to find an invariable measure of value.

A measure of value is a commodity or bundle of commodities by which we reckon the value of other things. Any commodity could serve as a measure of value, here and now, in a particular market, because equal values are given in exchange. Things are usually given in exchange for money, however, so that people customarily think of prices in terms of money. Money, as Locke (1991 [1692]:248) observed, "is the universal measure by which people reckon, and used by every body in the valuing of all Things." Money is not, however, an invariable measure of value. "The natural Value of Money," according to Locke (1991 [1692]:262), "depends on the whole quantity of the then passing Money of the kingdom, in proportion to the whole Trade of the Kingdom, (i.e.) the general Vent of all the Commodities." An increase in the quantity of money reduces its value and raises the price of all other commodities in terms of money. Thus, Locke supported the quantity theory of money.

Since money is not a steady or unalterable measure of value, Locke asked, does a commodity exist that has a fixed absolute value? He answered, money would be such a commodity,

if in any country they use for Money any lasting Material, whereof there is not any more to be got, and so cannot be increas'd; or being of no other use, the rest of the World does not value it, and so it would not like to be diminished; this also would be a steady standing Measure of the Value of other Commodities.

(Locke 1991 [1692]:264)

This apparently means that a commodity would be a perfect measure of value if the quantity of it never changed. But, even if its quantity never changes, the value of all other commodities may change relative to it, in which case it would be impossible to determine whether its value remained constant. The quest for an invariable measure of value became a common theme of classical economics. Locke (1991 [1692]:265) reached the right practical conclusion: "it is impossible to have any standing, unalterable measure of the value of things." Ricardo reached the same conclusion over a century later.

Money is still the best measure of value over short periods of time, because the quantity of it changes slowly. While over long periods of time, the principal foodstuff of any country, such as wheat in England, is a better measure of value than money, because

farmers carefully adjust their production to the consumption of it. Wheat is not a suitable measure of value from year to year, however, because its price fluctuates over seasons of scarcity and plenty. Locke therefore concluded that

Wheat here, Rice in *Turkey*, &c. is the fittest thing to reserve a Rent in, which is designed to be constantly the same for all future Ages. But Money is the best Measure of the alter'd Value of things in a few Years: Because its Vent is the same, and its quantity alters slowly.

(Locke 1991 [1692]:263)

Petty proposed the same standard measure of value before him and Hutcheson after him, so that it was a well-established idea by the time Smith discussed it. For Locke, wheat maintains its value, because farmers always adjust output to demand. This implies that cost is relatively constant over long periods of time, though he did not say much about cost in his theory of supply and demand.

The regulation of value: supply and demand

Locke distinguished between value in use and value in exchange, like Aristotle, though he called them intrinsic value and marketable value, respectively. In his *Two Treatises*, Locke (1988 [1690]:294) wrote that “the intrinsick value of things...depends only on their usefulness to the Life of Man.” The same definition appears in his *Some Considerations*: “the Intrinsick Natural worth of any Thing, consists in its fitness to supply the Necessities or serve the Conveniencies of human Life” (Locke 1991 [1692]:258). The usefulness of things does not, however, determine their market price. “The Marketable value of any assign’d quantities of two or more Commodities,” Locke (1991 [1692]:258) wrote, “are *pro hic & nunc*, equal, when they will Exchange for one another.” The marketable value of any commodity is regulated by the quantity and the vent of the commodity. This is called a supply and demand theory.¹³

This proportion in all commodities, whereof Money is one, is the proportion of the quantity to the vent. The Vent is nothing else, but the passing of Commodities from one owner to another in exchange.

(Locke 1991 [1692]:258–9)

The quantity is simply the available supply and vent is the old name corresponding roughly to demand.¹⁴ Since supply and demand are constantly changing, so too is the market price of things as they become more or less scarce.

His “Laws of Value” apply to the market period or temporary period of Alfred Marshall, when the commodities brought to market have already been produced. Since the quantity supplied is previously given, the cost of production is irrelevant to the market price, as Locke implies in the following sketch:

For a Farmer that carries a Bushel of Wheat to Market, and a Labourer that carries a Half a Crown, shall find that the Money of the one, as well

as the Corn of the other, shall at some times purchase him more or less Leather or Salt, according as they are in greater Plenty and Scarcity one to another.

(Locke 1991 [1692]:249)

Locke's marketable value is called the market price by Richard Cantillon and by Adam Smith. It is the price at which a commodity actually sells. The whole quantity is evidently offered for sale at whatever price it will fetch, so that the supply curve is perfectly inelastic. Locke's (1991 [1692]: 254) demand curve is downward sloping: "The value of any thing, compar'd with it self, or with a standing Measure, is greater, as its quantity is less in proportion to its vent."¹⁵ This conception of supply and demand became a standard theory of the market price. Philip H. Wicksteed presented a neoclassical version of the market period where the supply curve is perfectly inelastic.¹⁶ Karen Vaughn (1980:21) criticized Locke for his treatment of supply and called it "scanty," which is certainly true. She praised his treatment of demand, however.

Locke did not develop his supply and demand analysis beyond the market period. While he noted that farmers adjust their production to demand, he did not analyse the cost of production as a determinant of the natural price, so that his theory falls short of the work by Pufendorf. The farmer's wheat is already produced when he comes to market and he sells it for whatever it will fetch. Locke (1991 [1692]:259, 237, 328) understood, however, that where goods are neither engrossed nor monopolized, but are exposed to "free" trade, the "true Market-price" is established in the same way as weights find their "Aequilibrium" on a scale.¹⁷ He lacked an explicit theory of the dynamic process of adjustment to equilibrium.

Locke's three theories of value have different time dimensions. His theory of the origin of value is backward-looking like the classical labour theory of value. It is found by adding up all the labour necessary to produce commodities, including the labour spent on the materials and tools used up in their production plus the labour needed to produce those materials and tools, and so on, counting all the way back to the original and primeval condition of mankind. Money is his measure of value over short periods of time, but not over long periods, because money slowly depreciated in value. Corn is a better measure of value over long periods, but not over short periods, because of good and bad harvests. His theory of the regulation of value is forward-looking like neoclassical value theory. The farmer who comes to market expects to find a buyer for his corn, which sometimes may be cheap and sometimes dear. The market price is here and now.

Rent and taxes

Locke's theory of rent runs parallel to his theory of value, because he presented a philosophical theory of the origin of rent and an empirical theory of the regulation of rent in the marketplace. First, his labour theory of property rights explains the origin of rent. The invention of money made rent possible, because the surplus produce of the land could be held as money in the vault instead of grain in the bin. Second, supply and demand regulate rent in the market. In this theory, he addresses the incidence of taxation.

Who ultimately pays taxes? Third, Locke also discusses the demand for land as a consumer good.

His theory of the origin of rent begins in the first ages of the world. Land was free like water. With the invention of money, however, society found something both lasting and scarce that did not stale in abundance like food. With money, land became unequally distributed. Farmers could sell their surplus produce for money and buy more land with it. The inequality of property made land valuable and scarce. "The unequal Distribution of Land," Locke (1991 [1692]:182) explained, " (you having more than you can or will manure, and another less) brings you a Tenant for your Land." To earn their subsistence, the landless poor have to pay rent to the landlord with the surplus produce of their labour.

While Locke's theory of the origin of rent is rather fanciful, it is not as illogical as it may appear. Follow Locke (1988 [1690]:169) back to genesis and suppose that by the "Donation of God, *Adam* was made sole Proprietor of the whole Earth." If this were the case, Adam "may deny all the rest of Mankind Food, and so at his pleasure starve them, if they will not acknowledge his Sovereignty, and Obey his Will." To the contrary Locke argued in refutation of Filmer, this violates God's design to go forth and multiply. Locke's biblical parable illustrates why rent may be considered a monopoly income. Begin with land as a free good in a state of nature: quantity exceeds demand at a zero price. Now, let all the land be appropriated. Given demand, its value depends on the number of owners and the distribution of ownership. With one owner, land is a monopoly; and rent can be set as high as the landlord pleases. If the number of owners increases, rent will tend to decline, as in the case of Cournot's mineral spring. But, if all the land is appropriated while rent is still positive, rent includes an element of monopoly income. It comes from exploiting a downward sloping demand curve. Thus, rent is monopoly income, as J.S. Mill (1965 [1848]:416), among others, later explained.

With a given the distribution of ownership, supply and demand regulate rent in the marketplace. Locke (1991 [1692]:261–2) attributed a rise in the rent of land to either a "greater quantity of its Product" or "a greater Vent of that single commodity." While the meaning of his terms is not entirely clear, he apparently meant that rent increases if the land yields a larger crop or if the demand for the crop increases and raises its price. A decline in demand, on the other hand, "is sure to fall first and heaviest upon Land," as Locke (1991 [1692]:271) explained more fully in his account of the incidence of taxation.

Taxes tend to fall mainly on the landholder, no matter how they are contrived and no matter who pays them to the government. If the government puts a tax on consumer goods, it will soon find its way to the landholder. Suppose some country gentlemen convince the government to exempt land from taxation and shift the whole burden to consumer goods, so that their prices rise by a quarter.

Let us see now who at long run must pay this quarter, and where it will light. 'Tis plain, the Merchant and Broker, neither will nor can; for if he pays a quarter more for Commodities than he did, he will sell them at a Price proportionably raised. The poor Labourer and Handicraftsman cannot: For he just lives from hand to mouth already, and all his Food, Clothing and Utensils, costing a quarter more than they did before, either his Wages must rise with the Price of things, to make him live; or else, not being able to maintain himself and Family by his Labour, he comes to the

Parish; and the Land bears the Burthen a heavier way. If the Labourer's Wages be rais'd in proportion to the increas'd Rates of things, the Farmer, who pays a quarter more for Wages, as well as all other things, whilst he sells his Corn or Wool, either at the same rate, or lower, at the Market, (since the Tax laid upon it makes People less forward to buy) must either have his Rent abated, or else break and run away in his Landlord's Debt: And so the yearly value of the Land is brought down. And who then pays the Tax at the Years end, but the Landlord.

(Locke 1991 [1692]:274–5)

Locke reaches conclusions on the incidence of taxation that are similar to the doctrines of Quesnay and Ricardo, but by a different analysis. They concluded that the labourer cannot be taxed because wages are at subsistence. Apparently, the profits of merchants and brokers are not squeezable, so they pass commodity taxes on to their customers. Importers will, indeed, shift their capital to another business if they cannot earn their usual profit. Farmers, like labourers, cannot pay taxes, because they are at subsistence. This would be the incidence of taxation in a country like England, where the great fund of wealth is in land. In a country like Holland, however, where merchants are many and rich, they might be forced to contribute to the government, if taxes rose too high. When the land is pressed so hard, Locke (1991 [1692]:278) wrote “that it can yield no more, Trade must be brought in aid to help to support the Government rather than let all sink.”

Locke considered a third theory of rent when he discussed land as a consumer good. Like Petty before him, he recognized that land was a consumer good in the neighbourhood of large cities. Its price was not determined solely by the present value of the agricultural rents derived from it, but also by the consumption demand of wealthy buyers. This was another application of his supply and demand theory.

This Rule holds in Land as well as all other Commodities, and is the Reason, why in *England* at the same time, that Land is some places is at seventeen or eighteen Years Purchase, it is about others, where there are profitable Manufactures, at two or three and twenty Years Purchase: Because there (Men thriving and getting Money by their Industry, and willing to leave their Estates to their Children in Land, as the surest, and most lasting Provision, and not so liable to Casualties as Money in untrading or unskilful Hands) there are many Buyers ready always to Purchase, but few Sellers

(Locke 1991 [1692]:253–4)

If rich consumers bid up the price of land, rent will yield a lower return to all landlords in the same neighbourhood. Where the price of land is determined by consumer demand, it is not necessarily equal to the present value of agricultural rents discounted at the market rate of interest. Locke (1991 [1692]:302–3) clearly recognized that the price of land and the market rate of interest are inversely related. Where land serves consumers directly, rent is explained by the usefulness of land to consumers, not by production theory.

Money, interest and trade

For Locke, like Petty, interest is paid for the use of money, as Keynes later emphasized. He had a monetary theory of interest. He recognized that merchants earn profits on their capital, which he called stock, but he did not always distinguish between the interest on money and the profits of stock. *Some Considerations* explains the interest on money and the rent of land with the same principles. He presented a philosophical theory of the origin and an empirical theory of the regulation of both interest and rent.

As the unequal distribution of land originally gave rise to the rent of land, so too the unequal distribution of money was the origin of interest or usury. This theory addresses the old question: Is charging interest on money just? Here Locke criticized the doctrine of Aristotle that money is a barren thing.

For Land produces naturally something new and profitable, and of Value to Mankind; but Money is a barren thing, and produces nothing, but by Compact transfers that Profit that was the Reward of one Man's Labour into another Man's Pocket. That which occasions this, is the unequal Distribution of Money; which Inequality has the same effect too upon Land, that it has upon Money. For my having more Money in my Hand than I can, or am disposed to use in buying and selling, makes me able to lend: And another's want of so much Money as he could employ in Trade, makes him willing to borrow. But why then, and for what Consideration doth he pay Use? For the same Reason, and upon as good Consideration, as the Tenant pays Rent for your Land.

(Locke 1991 [1692]:250)

If the payment of rent is just, so by analogy is the payment of interest. "It follows," Locke (1991 [1692]:251) concluded, "that Borrowing Money upon Use is not only by the necessity of Affairs, and the Constitution of Humane Society, unavoidable to some Men, but that also to receive Profit for the Loan of Money, is as equitable and lawful, as receiving Rent for Land."

In his criticism of Locke's theory of interest, Eugene von Böhm-Bawerk (1959 [1884–1912]:I, 29) turned his labour theory of property rights against him. He thought Locke should have condemned both interest and rent. If anything, he thought Locke should have argued that rent is less justifiable than interest, because it comes from the labour of the tenant. Locke justified private property in land, however, on the same grounds as he justified private property in money. Money is something lasting and scarce that does not spoil in abundance. It can justly be accumulated without harming anyone else. By this means, the landlord can appropriate more land than one person can work and exchange the surplus product of the land for money.

In spite of his theory of the origin of rent and interest, Locke did not attribute a rise in rent to enclosing land or a rise in interest to redistributing money. He had a different theory of the regulation of rent and interest, which followed his supply and demand theory of market prices. "That which raises the natural Interest of Money, is the same that raises the Rent of Land, (i.e.) its aptness to bring in Yearly to him that manages it, a greater Overplus of Income above his Rent, as a Reward to his Labour," Locke (1991

[1690]:261) explained, while “that which causes increase of Profit to the Borrower of Money, is the less quantity of Money, in proportion to Trade, or to the Vent of all Commodities, taken together, & vice versa.” Therefore, an increase in the quantity of money, given the volume of trade, tends to reduce the rate of interest, whereas an increase in the volume of trade, given the quantity of money, tends to raise the rate of interest. In the time of Queen Elizabeth and the first Stuarts, for example, the rate of interest was eight or ten per cent. “Our thriving Trade was the Cause of high Interest,” Locke (1991 [1692]:285) thought, because of “every one craving Money to employ in a profitable Commerce.”

J.M.Keynes (1936:343) credited Locke with being “the parent of the twin quantity theories.” The first is the quantity theory of money: an increase in the quantity of money tends to reduce the value of it, that is, it tends to increase commodity prices, given the volume of trade and the velocity of circulation. Second, an increase in the quantity of money tends to reduce the rate of interest, given the total value of trade.¹⁸ The rate of interest could not be regulated by law, Locke argued, because it depended on the quantity of money and the volume of trade. He looked at the demand for money from the perspective of Petty’s cash balance approach: Landlords need enough cash to carry them from quarter-day to quarter-day, while labourers only need to cover their expenses from week to week.¹⁹

When Locke coupled his quantity theory of money with his explanation of the balance of trade, he introduced all the elements necessary for what became known as the price-specie-flow mechanism, except for a clear explanation of the dynamic process of adjustment. He does not have a coherent self-righting mechanism. In a hypothetical example that comes close to the famous supposition of David Hume, Locke wrote:

Supposing then, that we had now in England but half as much Money, as we had seven Years ago, and yet had still as much yearly Product of Commodities, as many Hands to work them, and as many Brokers to disperse them, as before; and that the rest of the World we Trade with, had as much Money, as they had before (for ’tis likely they should have more by our Moiety shared amongst them).

(Locke 1991 [1692]:265–6)

Two consequences follow this loss of money. First, “it will make our Native Commodities vent very cheap;” and, second, “it will make all Foreign Commodities very dear.” The deterioration in the terms of trade will make England poorer. In this circumstance, England would tend to run a favourable balance of trade and the gold and silver would return to it, but he does not clearly state that this would raise domestic prices and correct the imbalance of trade. Locke (1991 [1692]:265) thought, however, that “the value of money in general is the quantity of all the Money in the World, in proportion to all the Trade,” whereas “the value of Money in any one Country, is the present quantity of the Current Money in that Country, in proportion to the present Trade.” Trade would be in balance between two countries, Locke (1991 [1692]:265) believed, when their purchasing power was at parity: “Your Commodities amongst you, must keep an equal, or, at least, near the Price of the same Species of Commodities in the Neighbour Countries.”

Adam Smith (1976 [1776]:430) criticized Locke, rather unfairly, for being a crude mercantilist, who thought that the accumulation of gold and silver by a nation should be “the great object of its political oeconomy.” This was a strawman. Locke thought, to the contrary, that the wealth of the nation consisted of the necessities and conveniences of life. Money was a means to an end. “Gold and silver...command all the conveniences of life,” Locke (1991 [1692]:221) wrote, “and therefore in a plenty of them consists Riches.” He knew that an excessive accumulation of gold and silver would raise domestic prices and cause an unfavourable balance of trade. Furthermore, money provides an indispensable function in the economy, because there is “a certain proportion of money necessary for driving such a proportion of Trade” (Locke 1991 [1692]:221). Since the Bank of England was not established until 1694, two years after the publication of *Some Considerations*, foreign trade was the principal means by which England, which had no mines, could obtain the quantity of money requisite to its economy and trade. Some authorities have called Locke a metallist, because, as a practical matter, he thought the value of money came from the value of gold and silver, but, as a matter of theory, he was an Aristotelian, who explained the origin of money by “tacit or voluntary consent” or by “compact.”

Locke was not a crude mercantilist who advocated restricting imports and encouraging exports in order to enrich the special interests. He certainly opposed policies touched by favouritism, which Smith called a system of preference or restraint. Gold reserves were an essential instrument of state in an age of endless foreign wars. National defence is conceptually distinct from mercantilism. On the one hand, Locke was a mercantilist in the sense that he viewed trade in terms of winners and losers.

Riches do not consist in having more Gold and Silver, but in having more in proportion, than the rest of the World, or than our Neighbours, whereby we are enabled to procure to our selves a greater Plenty of the Conveniences of Life than comes within the reach of Neighbouring Kingdoms and States, who, sharing the Gold and Silver of the World in a less proportion, want the means of Plenty and Power, and so are Poorer.

(Locke 1991 [1692]:222)

Gold and silver were the means to power and plenty, not personal profits. On the other hand, he was an economic liberal in the sense that he thought the prosperity of England came from leaving trade “almost to it self.”

Commerce therefore is the only way left to us, either for Riches or Subsistence, for this the advantages of our Situation, as well as the Industry and Inclination of our People, bold and skilful at Sea, do Naturally fit us: By this the Nation of *England* has been hitherto Supported, and Trade left almost to it self, and assisted only by the Natural Advantages above-mentioned, brought us in Plenty and Riches, and always set this Kingdom in a rank equal, if not superior to any of its Neighbours.

(Locke 1991 [1692]:223)

Thus, the wealth of the nation arises from its acquired and natural advantages, not from state intervention. Gold and silver were one species of riches, but the welfare of the people depended on the “Plenty of the Conveniencies of Life.”

Locke’s *Some Considerations* is a poorly organized and incomplete little pamphlet, which nonetheless was widely read by his successors. Richard Cantillon and David Hume completed Locke’s analysis of the price-specie-flow mechanism. Hume also stripped economics of Locke’s mercantilist view that trade is a zero sum game when he argued that international trade is mutually beneficial to all the parties.

Conclusion

Locke’s theory of property rights satisfied the age in which he lived. It preserved the ancient preconceptions of moral philosophy by tracing the origin of property back to primeval times, so that it fit comfortably within the world view of Francis Hutcheson, David Hume, Adam Smith and the intellectual establishment of the eighteenth century. It also became, as Karl Marx (1963–71:1, 367) commented in his *Theories of Surplus Value*, “the classical expression of bourgeois society’s ideas of right against feudal society.” It put individual self-interest above social custom and personal fealty. “Moreover,” Marx (1963–71:1, 367) continued, “his philosophy served as the basis for all the ideas of the whole subsequent English political economy,” including, it should be noted, the ideas of Marx himself.²⁰ It did not yield to the demands of radical Puritans, like the Levellers and the Diggers, who wanted a more equal distribution of land. The landed aristocracy, who enjoyed great power, could therefore feel safe in the possession of their estates. Richard T.Ely (1914:543) sagely observed that Locke put abstinence and the accumulation of capital on the same moral footing as the sweat of thy brow when he argued that gold and silver could justly be hoarded up without injury to anyone. From this perspective, Locke’s theory of property rights did not pose a threat to the banker or the capitalist, though Locke (1988 [1690]:298–9) is primarily remembered for the rule that, even in civil society, labour is “the great Foundation of Property.”

The unequal distribution of land explains the origin of rent. Landlords who own more land than they can cultivate find landless tenants to work their land and pay them rent with the surplus produce of their labour. The unequal distribution of money explains the origin of interest. Capitalists who accumulate more money than they will spend or employ themselves lend it to others who pay them interest on it from the profits of their stock. This economic inequality of mankind required the establishment of government for the preservation of property. The civil society portrayed by Locke consisted of the three social classes of classical political economy: landlords who receive the rent of land, capitalists who live off the interest on money or the profits of stock and propertyless labourers who work for wages.

Locke improved upon Petty’s theory of value by distinguishing more clearly between the regulation, the measure and the origin of value. (1) His theory of the regulation of value is often called a supply and demand theory, which he used to explain the market price of any particular commodity, the rent of land and the interest on money. (2) His measure of value is more practical than theoretical, for it concerns protecting fixed incomes like rent against a decline in the value of money, that is, against inflation. He

thought that wheat was a more stable measure of value over long periods of time, whereas money was a more stable measure of value over short periods of time. (3) His theory of the origin, cause or source of value comes out of his theory of property rights. He looked back to the state of nature to count up all the labour that went into the bread we eat and found that labour accounted for as much as 99/100ths of the value of it. This is a production theory of origin or source of valuable things. The notion that labour produced most of the value of commodities became the philosophical foundation of the labour theory of value. Smith, Ricardo and Marx each presented a variation on this theme.

4

Richard Cantillon

A brief life of Richard Cantillon

Richard Cantillon was born in County Kerry, Ireland, sometime between 1680 and 1690.¹ As a young man he was employed by James Brydges, later the Duke of Chandos, Paymaster General for the British during the War of the Spanish Succession. Cantillon handled his foreign exchange operations and other business in Barcelona, and no doubt helped him accumulate his enormous fortune. Cantillon then went to Paris where he became a banker and ultimately amassed a great fortune himself by speculating against the Mississippi Bubble Scheme of John Law and against the South Sea Bubble in London. He had houses in several of the principal cities of Europe and travelled extensively, often taking note of the economic conditions that he observed. He retired to London where he was murdered in 1734—or, perhaps, disappeared without a trace.

Richard Cantillon's *Essai sur la nature du commerce en général* (hereafter simply the *Essai*) reveals the influence of Sir William Petty and John Locke, both of whom he cited several times.² Unlike Petty and Locke, who addressed particular issues in separate publications, Cantillon presented the first logically ordered discourse on economics in general: value, production, location, distribution, circulation, population, money and trade. Based on internal evidence, Murphy (1986:246) suggests that Cantillon wrote his *Essai* about 1730, but it circulated in manuscript for many years before it was finally published in 1755. The Marquis de Mirabeau had a copy of it and had intended to publish a commentary on it, but, before he could complete his project, someone else published it³. Mirabeau, who cited and often followed Cantillon in his *l'Ami des hommes*, became the personal connection between the economic ideas of Cantillon and the physiocratic doctrines of François Quesnay. Parts of the *Essai* were also published as early as 1751 by M.Postlethwayt in his *Universal Dictionary*. While the *Essai* influenced many authors in the second half of the eighteenth century, it virtually disappeared until it was rediscovered by W.J. Jevons in the late nineteenth century. It is not clear whether the *Essai* was first written in English or French. H.Higgs (1931 [1755]) edited and translated a French copy of it, the title page of which states that it was translated from the English. A statistical supplement in the fashion of Petty's political arithmetic has never been found.

The origin, measure and regulation of value

Cantillon began his *Essai* with his theory of the origin of value. He repeated the production theory of value that Petty derived from Hobbes: land is the physical source of commodities and labour is the active agent which transforms the physical things of nature

into wealth. He then stated his theory of wealth, which also followed Petty: wealth consists of consumer goods.

The Land is the Source or Matter from whence all Wealth is produced.
The Labour of man is the Form which produces it: and Wealth in itself is
nothing but the Maintenance, Conveniencies, and Superfluities of Life.

(Cantillon 1931 [1755]:3)

This conception looks back to that original state of things that supposedly existed before the production of capital goods, back to a time when land and labour were the only factors of production. In civil society, Cantillon (1931 [1755]:89) evidently thought that capital goods were the product of land and labour, because, he explained, labour is employed “to draw from Mines Iron, Lead, Tin, Copper, etc. and work them up into Tools and Instruments for the use of man.” It was in this context that Cantillon invoked the doctrine of the superiority of durable goods. He did not follow Locke’s metaphysical theory of capital by counting up all of the “past labour” embodied in a loaf of bread. Cantillon’s concept of wealth is a flow of welfare as opposed to an accumulated stock of riches.

Adam Smith (1976 [1776]:10) had the same design as Cantillon in the first sentence in the *Wealth of Nations*, where he stated that “The annual labour of every nation is the fund which originally supplies it with all the necessities and conveniences of life which it annually consumes.” Unlike Cantillon, Smith considered land to be a free gift of nature that did not create any value by itself. Therefore, he dropped land from his theory of the origin of value. This conception led him to a pure labour theory of the regulation of value for primitive society, in which labour alone determined value-in-exchange in his well-known example of the beaver and the deer. Cantillon, in contrast, developed theories of the regulation of value and the measure of value that were based on land and labour.

A measure of value is some thing or other in terms of which we reckon the value of other things. In his *Elements of Pure Economics*, Léon Walras demonstrated that any commodity could serve as a measure of value once equilibrium prices are established. He called his measure of value a *numéraire*. A *numéraire* does not explain what determines or regulates relative prices. It is only a measure of value, and it is only valid for a given state of equilibrium. It cannot measure values as society progresses and prices change. In contrast, Petty, Locke, Smith and Ricardo, among many others, all sought a measure of value that could compare the wealth of nations as total production and as relative prices changed.

Petty measured values in terms of either land or labour, because he made land and labour the origin of value. Cantillon followed Petty’s theory of the origin of value and therefore also measured values by either land or labour. These two alternative measures of value required an equality in value to compare them. Petty called this equality in value the *par* between land and labour.

Cantillon (1931 [1755]:43) accepted Petty’s notion of a *par* or equation between land and labour, but he rejected Petty’s treatment of the subject as being “fanciful and remote from natural laws.” He evidently employed Petty’s inductive method of political arithmetic to make statistical estimates of the *par* between land and labour, but his data disappeared with the lost supplement to his *Essai*. He found that the *par* varies from

commodity to commodity and from place to place. It was in this context, cited by Adam Smith, that Cantillon calculated that the value of labour equals twice the subsistence of the labourer. Therefore, labour is worth twice the quantity of land needed to produce the subsistence of one labourer. The subsistence of labour varies considerably, however, from one country to another.

For this reason I have not determined to how much Land the Labour of the meanest Peasant corresponds in Value when I laid down that it is worth double the produce of the Land which serves to maintain him: because this varies according to the mode of living in different countries. In some southern Provinces of France the Peasant keeps himself on the produce of one acre and a half of Land and the value of his Labour may be reckoned equal to the product of Three Acres.

(Cantillon 1931 [1755]:39)

In Middlesex, however, where the labourer spends the produce of five to eight acres, his labour would be worth twice as much. While among the Iroquois, if a hunter consumes the produce of fifty acres of land, "The Labour of this Hunter may be reckoned equal to the product of 100 acres of Land." Thus, the subsistence of labour corresponds to a certain number of acres, which varies from country to country.

Cantillon made use of his par to measure the value of commodities by the quantity of land used in their production or by the quantity of labour which enters into them. He would also measure and compare the wealth of different nations by the money's worth of their land and labour.

The Money or Coin which finds the proportion of Values in exchange is the most certain measure for judging of the Par between Land and Labour and the relation of one to the other in different Countries where this Par varies according to the greater or less produce of the Land allotted to those who labour.

(Cantillon 1931 [1755]:41)

If one labourer earns an ounce of silver in a day while another labourer earns half an ounce a day, Cantillon would conclude that the first has twice as much as the second.

The regulation of value explains the determination of prices.⁴ Cantillon divided his analysis of the regulation of value into two time periods: (1) a market period, in which supply and demand determine the market price of a previously produced quantity of a commodity; and (2) a production period, in which the land and labour necessary to produce a commodity determine its real value. The distinction between the temporary market price and the cost of production of a commodity became the standard approach in price theory from Adam Smith through Léon Walras. In a like manner, Alfred Marshall explained the determination of prices in the market period and in the long run,⁵ but he also introduced the short run as a third time period in his *Principles of Economics*.

First, Cantillon accepted the supply and demand theory of the market price presented by John Locke.

Mr Locke who, like all the English writers on this subject, has looked only to Market Prices, lays down that the value of all things is proportionable to their abundance or scarcity, and the abundance or scarcity of the silver for which they are exchanged.

(Cantillon 1931 [1755]:117)

Aside from the possibility of traders withholding their goods or shipping their goods to another market, Cantillon wrote “I consider that Mr Locke’s idea is correct in the sense of the following Chapter, and not otherwise.” In the chapter entitled “Of Market Prices,” Cantillon explained, for example, how the haggling and bargaining in the market established the market price.

In his example of green peas, Cantillon drew a supply and demand diagram with words. The demand curve for peas follows the law of demand: the lower the price, the greater is the quantity demanded. Suppose various *maîtres d’hôtel* in Paris bid 60 livres for 10 quarts of peas, 50 livres for another 10 quarts, 40 for another 10 and 30 for another 10. As the price comes down (60, 50, 40, 30), the total quantity demanded goes up (10, 20, 30, 40). If the sellers bring 20 quarts to market, then

those who offer 60 livres for 10 quarts will be first served. The Sellers, seeing later that no one will go above 50, will let the other 10 quarts go at that price. Those who had orders not to exceed 40 or 30 livres will go away empty.

(Cantillon 1931 [1755]:117)

If a much greater quantity of peas were brought to market, the sellers would lower their prices in order to entice more buyers into the market. The supply curve is not necessarily perfectly inelastic, however, because some sellers may refuse to lower their prices in the hope of selling their peas on another day or in another market. This theory of the market price is similar to the theory presented by Marshall in his *Principles*. Buyers and sellers specify both the price and the quantity at which they are willing to trade.

Second, Cantillon’s theory of intrinsic value, which he also called the real value of commodities, corresponds to Marshall’s normal value in the long run. Following his theory of the origin of value, Cantillon examined how the land and labour necessary for production determine the intrinsic values of different commodities.

The fine steel spring which regulates an English Watch is generally sold at a price which makes the proportion of material to Labour, or of Steel to Spring, one to one million so that in this case Labour makes up nearly all the value of the Spring.

(Cantillon 1931 [1755]:29)

“On the other hand,” Cantillon (1931 [1755]:29) continued, “the price of the Hay in a Field, on the spot, or a Wood which it is proposed to cut down, is fixed by the matter or produce of the Land, according to its goodness.” He gave similar examples for corn, wool and cloth, flax and lace and water drawn from the Seine.

By these examples and inductions it will, I think, be understood that the Price or intrinsic value of a thing is the measure of the quantity of Land and of Labour entering into its production, having regard to the fertility or produce of the Land and to the quality of the Labour.

(Cantillon 1931 [1755]:29)

By “examples and inductions” Cantillon meant by use of the empirical method of political arithmetic. These examples may have appeared in his lost statistical supplement. The intrinsic value of the steel watch springs is almost entirely due to labour, whereas the intrinsic value of wood in the forest is due to land. Entrepreneurs will increase the production of a commodity when its market price is temporarily above its intrinsic value and reduce production when its market price is temporarily below its intrinsic value. In well-organized markets, prices tend to gravitate toward the intrinsic value of things.

The treatment of capital and profit in the *Essai* is not unambiguously clear, because he generally did not refer to them where he discussed the intrinsic price or real value of commodities, but he included them elsewhere. Profit-making was, nonetheless, at the heart of his theory of price. Cantillon (1931 [1755]:51–3) repeatedly refers to the entrepreneur who buys goods “at a certain price to sell them again at an uncertain price, because he cannot foresee the extent of the demand.” He treats profits as a sort of uncertain wage where he compares self-employed workmen to small manufacturers. A small manufacturer buys materials and hires labour at certain prices without knowing what price his finished goods will fetch in the market. This is the risk taken by the entrepreneur. In a similar fashion, “the Undertakers of their own labour in Art and Science, like Painters, Physicians, Lawyers, etc. live in like uncertainty.” The entrepreneur in the *Essai* is a risk-taker, which is a widely accepted definition of entrepreneurship.⁶ In contrast, the entrepreneur of Walras is an organizer who coordinates production with certain prices and a given technology, whereas the capitalist of Karl Marx and the entrepreneur of Vilfredo Pareto and J.A.Schumpeter is an innovator who creates new methods of production and distribution.

Cantillon’s discussion of three rents implies that there are three necessary costs of production: wages, profit and rent.

It is the general opinion in England that a Farmer must make three Rents.

(1) The principal and true Rent which he pays to the proprietor, supposed equal in value to the produce of one third of his Farm, a second Rent for his maintenance and that of the Men and Horses he employs to cultivate the Farm, and a third which ought to remain with him to make his undertaking profitable.

(Cantillon 1931 [1755]:121)

Whether he considered capital goods to be simply so much stocked or stored up land and labour is also unclear. At one point, Cantillon (1931 [1755]:89) states that “the comparative greatness of States is their reserve Stock above the yearly consumption, like Magazines of Cloth, Linen, Corn, etc. to answer in bad years, or war.” The “reserve stock” of a state evidently arises from saving, since it is “above the yearly consumption.”

Several notable authorities, including François Quesnay (1965 [1888]: 218) in his (1757) article on *Grains* in *l'Encyclopédie*, stress the primary importance of land as the source of wealth in Cantillon's *Essai*. E. Heimann (1964 [1945]:53) and A.Fanfani (1952:xv) agreed. A. Brewer (1992a: 61) went so far as to argue that Cantillon had a land theory of value and, indeed, that "no other significant economist has claimed that value is determined by the amount of land used in production." He thought that the following quotation demonstrated his position.⁷

In Part I an attempt was made to prove that the real value of everything used by man is proportionable to the quantity of Land used for its production and for the upkeep of those who have fashioned it.

(Cantillon 1931 [1755]:115)

The word "upkeep" must refer to the maintenance of labour, however. Furthermore, Cantillon called "the real value of everything" its intrinsic value. At the end of his chapter on intrinsic value, Cantillon (1931 [1755]: 31) concluded: "Land is the matter and Labour the form of all produce and Merchandise." Many authorities recognized that both land and labour regulate value in Cantillon's theory.⁸

H.Brems (1978) published an interesting comparison of Cantillon and Marx, in which he also asserted that Cantillon had a land theory of value, whereas Marx had a labour theory of value. Marx (1961–62 [1867–94]:I, 38) certainly argued that the exchange-value of a commodity is created, measured and regulated by the quantity of labour embodied in it, that is, "by the quantity of the value-creating substance, the labour, contained in the article." Cantillon wrote, however, that both land and labour, not land alone, regulate values, whereas either land or labour can measure values. T.Aspromourgos (1996:100) later explained the "so-called land theory of value" of Brewer and Brems in terms of the par between land and labour. Units of labour can be converted into units of land, because labour can be measured in terms of land; but a measure of value is distinct from a determinant of value. The fact that an ounce of silver equals a bushel of corn, to use Petty's example, does not mean that one determines the value of the other. "The idea of a Measure of Value must not be confounded with the idea of the regulator, or determining principle, of value," wrote J.S. Mill (1965 [1848]:580). "To confound these two ideas, would be much the same thing as to overlook the distinction between the thermometer and the fire."

Wages, interest and rent

Cantillon presented an early version of the Malthusian principle of population, perhaps suggested to him by Petty, even though he justly criticized Petty's population estimate since biblical times. The tendency for population to grow is limited by the subsistence of labour. In a passage that would fit comfortably in the *Wealth of Nations*, Cantillon (1931 [1755]:83) wrote: "Men multiply like Mice in a barn if they have unlimited Means of Subsistence."⁹ Smith (1976 [1776]:97) wrote, "Every species of animals naturally multiplies in proportion to the means of subsistence, and no species can ever multiple beyond it." Men do not multiple like other animals, however, because people have a

sense of pride in their station in life whether they come from the nobility or the lower classes of society. “Most of them,” wrote Cantillon (1931 [1755]: 79), “would gladly set up a Family if they could count upon keeping it up as they would wish: they would consider themselves to do an injustice to their Children if they brought them up to fall into a lower Class than themselves.” Thus, for Cantillon, subsistence and, therefore, the growth of population is governed by a moral element that is socially, culturally and historically determined as in the theories of Malthus, Smith, Ricardo and Marx.

While subsistence sets a floor on the wages of labour, inequalities arise from the conditions of different occupations. Those “which require the most Time in training or most Ingenuity and Industry,” Cantillon (1931 [1755]:21) observed, “must necessarily be the best paid.” For this reason, cabinet makers earn more than ordinary carpenters, and watchmakers earn more than farriers. The wages of smelters, sailors and silver miners exceed the wages of ordinary workers because of the riskiness and dangers of those occupations. Finally, jewellers, bookkeepers and cashiers earn a premium because of the trustworthiness required of them. Adam Smith makes similar arguments in his chapter on the inequality of wages and profits.¹⁰ The number of workmen in each occupation apportion themselves to the demand for them.

Cantillon had a supply and demand theory of the rate of interest. Just as the market price of other commodities is determined “by the quantity of things offered for sale in proportion to the quantity of money offered for them, or, what comes to the same thing, by the proportionate number of Sellers and Buyers,” so too, Cantillon (1931 [1755]:199) wrote, “the Interest of Money in a State is settled by the proportionate number of Lenders and Borrowers.”

Entrepreneurs borrow money in the expectation of making a profit, but lenders demand interest to protect their capital from risk and to cover the expense of servicing a loan.

A man who lends his money on good security or on mortgage runs at least the risk of the illwill of the Borrower, or of expenses, lawsuits and losses. But when he lends without security he runs the risk of losing everything. For this reason needy men must in the beginning have tempted Lenders by the bait of a profit. And this profit must have been proportionate to the needs of the Borrowers and the fear and avarice of the Lenders. This seems to me the origin of Interest. But its constant usage in States seems based upon the Profits which the Undertakers can make out of it.

(Cantillon 1931 [1755]:199–201)

The lowest rate of interest would be paid by those merchants “who are rich and reputed solvent,” which Cantillon (1931 [1755]:211) thought “differs little from interest on the Mortgage of Land.” The rate of interest on different loans varies with the riskiness of the entrepreneur’s venture as assessed by the lender. The role of the entrepreneur was central to Cantillon’s theory of interest.

The rate of interest that a borrower can afford to pay depends on the profit that an entrepreneur can earn. Profits depend on the nature of the enterprise. “The Farmer,” wrote Cantillon (1931 [1755]:201), “who conducts the working of it has generally two thirds of the produce, one third pays his expenses and upkeep, the other remains for the

profit of his enterprise.” A master hatter like the farmer must sell his hats at a price that will cover rent, materials, the subsistence of his workmen, his own upkeep plus a profit from his enterprise. While the farmer or hatter may need 20 or 30 per cent profit to cover the interest on the money they borrow, a water-carrier in Paris who borrows money to buy two buckets may earn 5,000 per cent on his capital. “Nevertheless,” observed Cantillon (1931 [1755]:205), “a Money Lender will prefer to lend 1,000 ounces of silver to a Hatmaker at 20 per cent. interest rather than lend 1,000 ounces to 1,000 water-carriers at 500 per cent. interest.”

Thus, Cantillon had a real theory of the rate of interest that depended on the expected rate of return of real capital goods as oppose to the monetary theory of John Locke. Locke (1991 [1692]:262) argued that an increase in the quantity of money would lower the rate of interest. Cantillon (1931 [1755]:215) claimed, in contrast, that “Plenty or Scarcity of Money in a State always raises or lowers the price of everything in bargaining without any necessary connection with the rate of interest.”

Private property in land was the most important of all property for Cantillon. In contrast to John Locke’s labour theory of property rights, Cantillon (1931 [1755]:31) maintained, as a matter of history rather than moral philosophy, that “the most ancient Titles are founded on Violence and Conquest.” By whatever method the land was originally distributed, the existence of society requires the law to settle the ownership of it. Whether the prince at the head of an army distributes the land among his officers and favourites, as was originally the case in France, or whether it is allotted equally among the citizens, as was the case on the first settlement of Rome, Cantillon observed, the land soon comes to be held by relatively few owners. Cantillon could not conceive of society existing without the establishment of the laws of justice to protect private property.

The tendency for the ownership of land to become concentrated in relatively few hands made the distribution of land very unequal in all of the countries of Europe. Landlords were few in number compared to the total population. As Locke observed, those who had no land of their own were compelled to offer their labour to a landlord in order to live; however, Locke attributed this inequality to the invention of money. Landlords possessed economic power over all of the labour in society. If the prince and the landlords closed their estates and did not suffer them to be cultivated, they would be in the position of Adam as the sole proprietor of the whole earth, as Locke discussed in his *First Treatise*.¹¹

It is clear that there would be neither Food nor Rayment for any of the Inhabitants; consequently all the Individuals are supported not only by the produce of the Land which is cultivated for the benefit of the Owners but also at the Expense of these same Owners from whose property they derive all that they have.

(Cantillon 1931 [1755]:43)

His landlord also resembles Marx’s capitalist. Marx argued that “free labourers” who possess no capital of their own must sell their labour power to the capitalist in order to subsist and survive. Cantillon’s landless peasants stand in the same power relation to the landlords, unless they flee to the city or leave the country. Cantillon (1931 [1755]:57) laid it down as a principle that “the Proprietors of Land alone are naturally independent in a

State.” All other classes are dependent on them whether they are self-employed entrepreneurs or hired labourers. For this reason, the rent of land is sometimes called a monopoly price. Land was often viewed as the monopoly of a single class, not a single seller.

The monopoly of land was, indeed, a common expression among the classical economists. Adam Smith (1976 [1776]:423) argued that the laws governing the sale of land in Europe were so restrictive that “what is sold always sells at a monopoly price.” In his criticism of J.B.Say’s theory of rent, Ricardo (1960 [1821]:283) explained that “I always consider it as the result of a partial monopoly, never really regulating price, but rather as the effect of it.” J.S.Mill went even further when he wrote:

It is at once evident, that rent is the effect of a monopoly; though the monopoly is a natural one, which may be regulated, which may even be held as a trust for the community generally, but which cannot be prevented from existing. The reason why landowners are able to require rent for their land, is that it is a commodity which many want, and which no one can obtain but from them. If all the land of the country belonged to one person, he could fix the rent at his pleasure. The whole people would be dependent on his will for the necessaries of life, and he might make what conditions he chose.

(Mill 1965 [1848]:416)

Thus, Mill depicted the same conditions as Cantillon and Locke. Cantillon evidently had in mind a situation where the prince and the landlords act in concert, acting as if there were only one landlord; otherwise, the peasants would move to the next estate. Mill’s general theory of rent was explicitly derived from Ricardo, however, not from Cantillon.

Cantillon treated commercial states, such as Holland, England, Hamburg, Dantzig, Venice and Genoa, as exceptions to his theory.

The Dutch exchange their Labour in Navigation, Fishing or Manufactures principally with Foreigners, for the products of their Land. Otherwise Holland could not support of itself half its Population. England buys from abroad considerable amounts of Timber, Hemp and other materials or products of the soil and consumes much Wine for which she pays in Minerals, Manufactures, etc. That saves the English a great quantity of the products of their soil.

(Cantillon 1931 [1755]:85)

In these states, the landlord cannot exercise the same power over labour as would be the case in agricultural states, such as France, Poland or Ireland. Merchants can trade their goods for food wherever it is cheapest. Cantillon’s theory does not apply to commercial or industrial society.

The rent of land in France, in England, in Poland and in the other countries of Europe was, according to Cantillon (1931 [1755]:48, 75, 121), “generally supposed to be equal in value to the third of the produce.” This is a rule of thumb. It is not based on any economic analysis, though Cantillon observed that in some states,

like the Milanese State, the Farmer gives the Landlord half the produce instead of a third, and many Landlords in all Countries try to let their Farms at the highest rent they can; but when this is above a third of the Produce the Farmers are generally very poor. I doubt not that the Chinese Landowner extracts from his Farmer more than three fourths of the Produce.

(Cantillon 1931 [1755]:121)

Cantillon treated the idea that the landlord receives one-third of the value of the crop as a matter of fact. It is, indeed, a very widespread rule of thumb, even in North America today. Adam Smith mentioned it on several occasions, but he did not make much of it. Cantillon's rule of thumb reflects the inductive method of political arithmetic, as opposed to the deductive method of Ricardo.

Money and trade

In a discussion that foreshadowed Quesnay and the physiocrats, Cantillon explained how a farmer needs to make three rents, because the whole produce of the land must support three classes: landlords, farmers or entrepreneurs, and labourers. Petty, Locke and Smith, among many others, employed a similar classification. Farmers pay landlords a fixed sum for the rent of land, generally reckoned at a third of the produce. The landlords spend their third to support workers who live in the city or who transport goods between the country and the city. As entrepreneurs, farmers receive two-thirds of the produce of the land: one-third for the expense and maintenance of their labourers, the other for the profit of the enterprise. The farmers directly or indirectly provide all the subsistence of those who live in the country. The city sells manufactured goods to the country in exchange for approximately one-sixth of the total produce of the land, including raw materials. As a first approximation, the landlords and farmers together maintain that half of the population which lives in the city, that is, one-third comes from the landlords plus one-sixth from the farmers, which gives half the produce of the land.

The *Essai* by Cantillon is particularly original and brilliant on the subject of monetary theory. As a sophisticated banker, he readily saw what was wrong with John Law's Mississippi scheme in Paris and the South Sea Bubble in London. He also explained why the reform of the coinage recommended in 1717 by Sir Isaac Newton, Master of the Mint, was costly and wrong, but a detailed discussion of these fascinating topics goes beyond the scope of our subject.¹²

In his monetary theory, he cited Petty on the quantity of money in circulation and used Petty's inductive method of political arithmetic to make his own estimate. "I am not far removed from his conclusion," Cantillon (1931 [1755]:131) declared, "but I have preferred to compare the money in circulation to the Landlords' Rent." He also cited and criticized the quantity theory of money presented by Locke. "M.Locke lays it down as a fundamental maxim that the quantity of produce and merchandise in proportion to the quantity of money serves as the regulator of Market price," wrote Cantillon (1931 [1755]:161). "The great difficulty of this question," he continued, "consists in knowing in what way and in what proportion the increase of money raises prices." Cantillon thought

that prices would rise as the quantity of money increased, but they need not rise in proportion to the quantity of money, depending upon who received the money and what they did with it. M.Blaug (1978:169–70) has called this the Cantillon Effect.

Cantillon also recognized that quantity of money would affect the balance of trade as prices rose.

The goods and manufactures will in the long run cost so much that the Foreigner will gradually cease to buy them, and will accustom himself to get them cheaper elsewhere, and this will by imperceptible degrees ruin the work and manufactures of the State. The same cause which will raise the rents of Landlords (which is the abundance of money) will draw them into the habit of importing many articles from foreign countries where they can be had cheap.

(Cantillon 1931 [1755]:235)

This is essential to the price-specie-flow mechanism of David Hume. Hume published his economic essays in 1752, which is before the publication of Cantillon's *Essai*. However, Hume wrote his *Treatise on Human Nature* in France in the 1730s, which is about the time Cantillon wrote his *Essai*. Whether Hume plagiarized from Cantillon is a matter of dispute. Hayek (1991 [1931]:287) believed that "Hume must in fact have known Cantillon," whereas Jacob Viner (1955:74n) wrote that he "found no evidence...that Hume was influenced, directly or indirectly, by Cantillon." From the perspective of economic policy, they reached opposite conclusions. Hume demonstrated that policies which produce a favourable balance of trade and increase the stock of gold in the country would be self-defeating, because the resulting inflation would generate an unfavourable balance of trade and a gold outflow; whereas Cantillon (1931 [1755]:235–7) advocated restrictions on trade to build up the monetary gold stock, because "it is always true that when the State is in actual possession of a Balance of Trade and abundant money it seems powerful, and it is so in reality so long as this abundance continues." The power and glory of the state was often the object of mercantilist policies.¹³

In political economy, Smith and Quesnay both vigorously advocated a policy of laissez-faire, whereas Cantillon sometimes favoured restrictive trade practices. In the case of Poland, he advanced the infant industry argument as grounds for protection.

If the Proprietors of Land and the Nobility in Poland would consume only the Manufactures of their own State, bad as they might be at the outset, they would soon become better, and would keep a great Number of their own People to work there, instead of giving this advantage to Foreigners: and if all States had the like care not to be the dupes of other States in matters of Commerce, each State would be considerable only in proportion to its Produce and the Industry of its People.

(Cantillon 1931 [1755]:77)

This passage illustrates that Cantillon still had one foot in the mercantilist camp, though he was not a crude bullionist, as A. Brewer (1988b, 1992b) has shown. Cantillon (1931 [1755]:191) supported a favourable balance of trade in order to obtain a large stock on

gold and silver for emergencies and for war, because “the comparative Power and Wealth of States consist, other things being equal, in greater or less abundance of money circulating in the *hic et nunc*.” A war chest was not irrational for the warring states of Europe. Even Smith justified the Navigation Act on grounds of national defence.

Conclusion

Cantillon adopted and extended Petty’s theory of value. Petty thought that the theory of value needed to answer three separate questions. (1) What is the origin of value, that is, why do things have value in principle and in the abstract? (2) How can values be measured? (3) What determines or regulates the value of commodities? To justify his theory of the origin of value, Petty, who followed Hobbes, looked back to that original state of things where land and labour were the only factors of production. To measure values, Petty sought a “par” between land and labour, as did Cantillon, who followed Petty by using market prices to equate the values of land and labour. To analyse what determines values, Cantillon extended this line of thought by arguing that the “real value” or “intrinsic price” of everything is due to the land and labour necessary to produce them. While the entrepreneur, profits and capital played a central role in his discussion of resource allocation, he failed to incorporate them into his theory of price determination, perhaps because he endorsed the older point of view inherited from Petty. Thus, he gave an incomplete cost of production theory of value, which eventually became the natural value of Adam Smith and the normal value in the long run for Alfred Marshall. To explain the market price of those commodities which have already been produced, Cantillon adopted the supply and demand theory of John Locke. Entrepreneurs cause market prices to gravitate toward the real or intrinsic value of commodities.

The frequent references to his lost statistical supplement make it clear that Cantillon believed in the inductive methodology of political arithmetic advocated by Petty. The examples of his intrinsic value of different things based on the land and labour required to produce them, his estimate of the relation between the subsistence of labour to the wage rate, his par between land and labour as a measure of value, his rule of thumb that rent is one-third of the produce of the land and his estimate of the quantity of money in circulation all appear to have been based on empirical observations. Cantillon sometimes used these statistical estimates to support his economic theory, as in the case of the labour embodied in a steel watch spring, and sometimes in place of a theory, as in his observation that rent equals one-third of the produce of land. Political arithmetic gave Cantillon a dispassionate explanation of things that allowed him to stay clear of most policy issues.

J.A.Schumpeter (1954:218) wrote that “few sequences in the history of economic analysis are so important for us to see, to understand, and to fix in our minds, as the sequence: Petty–Cantillon–Quesnay.” H.Higgs (1892:438) similarly stressed the influence of Petty on Cantillon: “Petty was the one writer more than any other whose influence is conspicuous in the *Essai*.” Cantillon followed Petty in his theory of value and in his methodology. His use of Petty’s method of political arithmetic illustrates that he was not in the university tradition of moral philosophy. As Petty inspired Cantillon, so Cantillon influenced Quesnay, though Quesnay also leaned heavily on natural law

philosophers like John Locke. The *Tableau Économique* is a more elaborate treatment of Cantillon's discussion of the circulation of production among farmers, landlords and labourers.

5

François Quesnay

A brief life of François Quesnay

The early life of François Quesnay (1694–1774) has been differently reported by various authorities. Auguste Oncken (1965 [1888]) published biographical sketches of Quesnay by Mirabeau, Fouchy, Madame du Hausset and others. He noted that Lord Crawford thought Quesnay was born in the village of Ecquivilly, in the Isle de France, the son of a labourer. The consensus follows the version of the count d’Albon, who claimed that Quesnay was born in Méré near Montfort-Lamaury, the son of an advocate. His father was also apparently the proprietor of a small estate. All the authorities agree that Quesnay spent his early years in rural France. Legend has it that he never attended school and did not learn to read until age eleven, about which time, or shortly thereafter, he became a voracious reader. He mastered Latin and Greek and read Plato, Aristotle and Cicero, which gave him the economic and philosophic foundations that the modern world inherited from classical antiquity.¹

While still a teenager, Quesnay began studying to be a surgeon, which was still a sort of barber and distinct from the profession of medicine. He established his practice of surgery in Mantes, where he moved with his wife. Success brought him recognition and eventually appointment as secretary to the Parisian Academy of Surgery. From surgery, he turned to medicine and acquired his doctorate, which opened a broader field of study and practice. He became an expert on the circulation of the blood and published on the practice of bleeding. The circulation of the blood may have suggested to him the circulation of money and commodities in the economy.² The title of his book, *Essai physique sur l’économie animale* (1736), implied a similar analogy to economics. He also published books on gangrene and fevers. It is, perhaps, no coincidence that Sir William Petty and John Locke were also physicians. They approached economic analysis from the natural science point of view. Quesnay’s reputation as a physician and as a man of discretion led to his appointment as physician to the Madame de Pompadour and later to Louis XV, which brought him to live at Versailles, where he met the cultural, political, intellectual and social leaders of France.

At the age of 62 in 1756, Quesnay published his first work on economics, *Fermiers*, in *l’Encyclopédie* of d’Alembert and Diderot. It was primarily concerned with the benefits of large-scale agriculture (*le grande culture*) on the English model in contrast to the poverty-stricken peasant farms of France (*le petite culture*). The next year he published *Grains*, also in *l’Encyclopédie*. It added the characteristic physiocratic doctrines that agricultural production increases wealth, whereas industrial production does not; that the revenue of the proprietors of land, the tithes of the clergy and the taxes of the sovereign ultimately come from the cultivators of the soil; and that internal and external free trade will bring a high and stable price (*bon prix*) for grain as well as prosperity to the nation.

The notion that the wealth of the nation depends on the produce of the land evidently came from Richard Cantillon, whom Quesnay (1965 [1888]:218) cited and quoted in his article on *Grains*. Quesnay did not accept the Hobbesian doctrine, however, which Cantillon endorsed, that wealth comes from both land and labour. Quesnay stressed that wealth comes from land.

Cantillon's *Essai* was first published in 1755, though the author was long departed. The *Essai* had circulated in France before it appeared in print. The Marquis de Mirabeau possessed a copy of it for many years.³ He followed Cantillon on many points in his famous *L'Ami des hommes*, subtitled of *Traité de la population*, which he published in 1756. When Quesnay and Mirabeau first met at the Palace of Versailles in July of 1757, they disagreed over whether land or labour was the primary source of wealth. Quesnay insisted on the importance of agricultural production, Mirabeau on the importance of a large population. Quesnay soon converted Mirabeau, who became his first follower, some say disciple.

François Quesnay founded the first "school" in economics in the sense that his followers—Marquis de Mirabeau, Dupont de Nemours, Mercier de la Rivière, L'Abbé Baudeau and Le Trosne, among others—agreed on the essential principles of economics and presented a common front to the outside world. Turgot is sometimes counted as a member of the group, though the differences in his theory would require separate treatment. This chapter focuses mainly on Quesnay, who clearly dominated the group. They were called *Les économistes* in their own time. The name "physiocrat" comes from the title of a book by Dupont, *Physiocratie* (1767).⁴ It means "the rule of nature." Nature had a double meaning for Quesnay. On the one hand, he espoused a philosophy of natural law. On the other hand, his economic analysis is based on the idea that all wealth comes from nature.

Quesnay explained his economic theory and policy with the aid of his *Tableau Économique*, which he first drew in the 1750s.⁵ The famous zig-zag form of the *Tableau* was widely distributed in the sixth part of *L'Ami des hommes*, which appeared in 1760 together with its explanations by Quesnay. It traced how the flow of an original annual advance of 600 livres by the cultivators of the soil generated a net product of 600 livres in rent for the proprietors of the land, half of which they spent on agricultural products and half on manufactured goods. Manufacturers in turn purchased their raw materials and provisions from the cultivators. In a steady state, the purchases by the proprietors and the artisans maintained intact the original annual advances. *Philosophie rurale* by Mirabeau, which first appeared in 1763, contains many variations on the *Tableau*, in which Quesnay evidently had a hand. With some justice, Alexander Gray (1931:93) has called the zig-zag form of the *Tableau* "a vast mystification," which C.Loïc (2003) has gone some way to explain. Quesnay presented a clearer and simpler form of his *Tableau* in his *Analyse*, published in 1766. Table 5.1 depicts the *Analyse* as an interlocking system of income and product accounts between the productive agricultural class and the consuming classes of proprietors and artisans in the fashion of modern National Income Accounts.

David Hume and Adam Smith, the most illustrious British economists of the age, knew Quesnay well. Indeed, Hume arranged for Smith to meet Quesnay, along with Turgot, Morellet, Necker, d'Alembert, Helvetius, among other members of the intelligentsia, when Smith was in Paris during 1765–66. Smith had been impressed with the man and with his system of political economy, so impressed indeed that, according to

Dugald Stewart (1980 [1795]:304), “If he had not been prevented by Quesnai’s death, Mr Smith had once an intention (as he told me himself) to have inscribed to him his *Wealth of Nations*.” Hume found the whole sect of *économistes* so haughty and opinionated that he told the Abbé Morellet, who was writing a new book, “I hope in your work you will thunder them, and crush them, and pound them, and reduce them to dust and ashes! They are, indeed, the set of men the most chimerical and most arrogant that now exist, since the annihilation of the Sorbonne” (J.Y.T.Grieg 1932:II, 205).

The rule of nature

Quesnay began his economic and philosophic analysis of man and society in a state of nature. He belongs to the great tradition in moral philosophy that includes Hobbes, Grotius, Pufendorf, Locke, Hutcheson, Hume and Adam Smith. Quesnay knew this literature well. While they shared a common vision of the origin of society, each of them presented theories that differed in detail and often in premise and conclusion. Looking forward, the ghost of this metaphysical apparition appears again in the works of Marx and Engels, even in the doctrine of Ricardian rent.

In *Le Droit Naturel*, Quesnay criticized the abstract idea of the pure state of nature presented by Thomas Hobbes as “frivolous sophistry.” He rejected the notion that, in a state of nature, everybody has a natural right to everything. He preferred the concept drawn by John Locke. “The right of *everyone to everything*” Quesnay (Kapp and Kapp 1949 [1765]:97)⁶ wrote, “is reduced to that portion which each of them can procure for himself.” No one can acquire everything. The order of nature only applies to whatever a person has the capacity to do, and the order of justice only applies to whatever a person acquires through labour without infringing on the right of other people to satisfy their needs. Natural right comprises the order of nature and the order of justice. This natural right, Quesnay (Meek 1962a:47) wrote, “extends to all situations in which men find themselves relatively to one another.” It applies to all societies.

Where people live scattered far and wide in a solitary state of nature, there is no society, so justice and injustice have no meaning. Great inequalities may exist between them, because they are unequal in their physical and intellectual abilities, which the Supreme Being dispenses to them for reasons which people cannot fathom. The human species cannot, however, continue beyond a single lifetime in a solitary state. The original basis of society, as Aristotle and Locke previously reasoned, is marriage and the family. Quesnay (Meek 1962a:50) claimed that the family brings “in an order of dependence, justice, duty, security, and mutual aid.” People come together to make agreements for their mutual protection and to propagate the species. Without security, the strong can unjustly oppress the weak.

The head of the household is naturally the strongest member of it, but that cannot justify encroaching on the natural rights of other family members. The head should regulate the family according to the rule of distributive justice. The notion of distributive justice again harkens back to Aristotle (1953:146), who claimed that “It is admitted on all hands that in distributing shares justice must take some account of merit.” This stands in stark contrast to the theory of justice advocated by Hobbes and his followers, who insisted on equality.⁷ The rule for distributive justice that Quesnay (Meek 1962a:51)

prescribed for members of the family provides that each person receive the full benefits of the joint efforts of the society but that “each person contributes to the welfare of the society according to his ability.” Socialists could easily endorse this rule of distributive justice.

Even in primitive society, prior to the establishment of social conventions, people have rights and duties, according to Dupont de Nemours, a devoted disciple of Quesnay. In his *De l'origine et des progrès d'une science nouvelle*, he wrote:

The *rights* of each man, anterior to conventions, are *liberty* to provide for his subsistence and his well-being, *property* in his person and in those things acquired by the labour of his person.

His *duties* are work to provide for his needs, and respect for the personal property and for the moveable property of others.

(Dupont de Nemours 1971 [1768]:342)

People make conventions that recognize and maintain these natural rights and duties, which were instituted by God himself. These conventions provide for that natural and essential order which allows people to enjoy their rights by observing their duties.

In a populous state that is still without positive laws, people live like savage tribes off the spontaneous produce of nature, but they suffer attacks from roving bandits. In this state, no one can cultivate their land, graze their sheep or herd their cattle, because no authority exists to protect their property. Wealth is too easily stolen. People who place themselves under a sovereign authority, however, come under the protection of positive laws. To enjoy the greatest possible consumption and to have the largest possible population, people must unite in society to guarantee their property and to protect it jointly with all their strength.

The philosophical foundations of the system of Quesnay are the laws of nature, the law of the physical order and the law of the moral order, which he defined as follows:

We shall understand by physical law *the regular course of any physical occurrence in the natural order obviously most advantageous to mankind.*

We shall understand by moral law *the pattern of all human action in the moral order which conforms to the physical order obviously most advantageous to mankind.*

(Quesnay in Kapp and Kapp 1949:100)

Natural laws furnish the rational basis for positive laws, the laws established by government. The most important of all positive laws is instruction and education in the laws of the natural order. The physiocrats held that natural laws did not rest on social convention. They were instituted by the Supreme Being and were, therefore, immutable, irrefragable and the best possible laws. The sovereign would not create new laws in the physiocratic scheme of things, but would declare positive laws that conform to the laws of nature.

Capital theory

More than any previous author, Quesnay emphasized the importance of capital investments for the production of wealth. In the early ages of civil society, the proprietors of the land made the initial investments of labour and materials to prepare the land for cultivation. This was necessary before farmers could plough their land or plant their seed. Quesnay called these investments *avances foncières*. Farmers then acquired the necessary equipment and animals to work the land, called *avances primitive*, as well as the materials and funds needed to cover the annual expenses of the farm, called *avances annuelles*. Roman law had earlier distinguished between landed property and moveable property.

The *avances foncières* became immoveable capital improvements: cutting the forests, digging out their roots, breaking the ground, draining the bogs, swamps and sloughs, building fences, constructing granaries to store the crops, erecting barns to house the animals, etc. According to the legal theory of the physiocrats, the proprietors undertook this labour and these expenses in order to acquire property in the land and to gain title to the fruits of the land, the *produit net*. Farmers pay the proprietors a contractually fixed rent for the use of the land. The *avances foncières* are sacred and inviolable. The proprietors have a duty to maintain them intact in perpetuity, for without them production will wane and population decline.

The farmer makes *avances primitive* in moveable capital goods: wagons, harrows, ploughs, tools of all kinds, working animals, flocks of sheep and herds of cattle. They are perishable, accident prone and require constant maintenance and renewal. Each year the farmer also incurs annual expenses, *avances annuelles*, which are consumed in production: the seed, manure, feed, wages or subsistence of labour and all the other operating costs of the farm. Not only must the moveable capital be kept intact and the annual expenses replaced for production to continue in the next year, but the farmer must earn a profit; otherwise, the farmer will quit the farm.

Edwin Cannan (1937:xxxix) believed, as previously mentioned, that the physiocrats influenced Adam Smith's theory of stock or capital and his theory of productive and unproductive labour, though both of these theories appeared earlier, at least in a nascent form, in the work of Sir William Petty. Smith's division of the capital stock into fixed and circulating capital almost corresponds to the physiocratic classification. For Smith (1976 [1776]:282), fixed capital "affords a revenue or profit without circulating or changing masters," whereas circulating capital "affords a revenue only by circulating or changing masters." The *avances foncières* are immoveable and clearly fixed; but *avances primitive* are moveable and may be either fixed or circulating by Smith's definition. Smith classified cattle, sheep, chickens and pigs that are kept as breeding stock as fixed capital, whereas they are circulating capital if they are being fattened for the market.

The origin, measure and regulation of value

The central characteristic of the physiocratic doctrine is the statement by Quesnay "that the land is the only source of wealth and that it is agriculture which multiplies it" (Kapp and Kapp 1949:104). The cultivators of the soil are productive labourers because they produce a surplus above their subsistence. The physiocrats sometimes included fishermen and miners among the productive labourers. They called the surplus a net product

(*produit net*), often equated with the rent of land. The crucial agents for the production of wealth are not the field hands, who merely earn their own subsistence, but the farmers, who employ them. Farmers are capitalists as well as entrepreneurs. They advance capital and direct production. "Thus," wrote Quesnay (Meek 1962a:238), "it is the land and the advances of the entrepreneurs of cultivation which are the unique source of the revenue of agricultural nations." He favoured the growth of large-scale, capital intensive farms because they produced a greater surplus than small farms with little capital.

The annual harvest maintains the entire population. The net product of agriculture equals the gross product minus the funds needed to restore and maintain the capital advanced by the farmer, including a profit or interest on capital. The net product provides revenue for the proprietary classes: rent for the owners of the land, tithes for the clergy and taxes for the sovereign. Manufacturers, retailers, wholesalers, transportation and service workers are the sterile class, which "is composed of all the citizens who are engaged in providing other services or doing other work than that of agriculture" (Meek 1962a:150). They buy their raw materials and their foodstuffs from the farmers and sell their manufactured good and services to the farmers and to the proprietary classes. Quesnay considered them to be unproductive because they live at subsistence and merely transform at cost the materials which they purchase into the products which they sell. "Thus," wrote Quesnay (Meek 1962a:96), "they consume as much as they produce; the product of their labour equals the cost of their labour, and no surplus of wealth results from it." They are useful to farmers, because, without them, farmers would be forced to manufacture and transport goods themselves, but the sterile class produces no new material substance and yields no surplus. The net product indirectly supports the entire non-agricultural population.

Quesnay had a production theory of the origin of value. He followed the tradition of Hobbes, Petty, Locke and Cantillon, but, where they claimed that the physical origin of things can be traced back to the land and labour required for their production, Quesnay asserted that "land is the unique source of wealth." He did not argue that labour served no function. Labour provides all kinds of useful goods and services; but, "Strictly speaking," he wrote, "it is only those men employed in work which generates the materials necessary for men's needs who produce wealth" (Meek 1962a:95). Without the material products of the earth, no one could survive. The sterile and proprietary classes consumed the output of the productive class.

In an analogous manner, Adam Smith claimed that labour, instead of land, is the origin of value and produces all commodities. Productive labourers add value to things that survive the period of production and yield a profit to their employers, whereas unproductive labourers consume the output of productive labour. Without labour to gather things in the wild, even the spontaneous gifts of nature could not be consumed. Both Quesnay and Smith were, therefore, guilty of the materialist fallacy that began with Hobbes. They looked back in time to discover the physical origin of those things which have value. From the neoclassical perspective, this is also a retrospective fallacy, because neoclassical economists hold that bygones are forever bygones.

The physical quantity of production is conceptually distinct from the value of the quantity produced.⁸ The physical quantity of production, indeed, conveys little economic meaning, unless production consists of a single crop, like corn; otherwise, one is comparing apples and oranges. The value of apples can, of course, be added to the value

of oranges, provided one uses the same measure of value. Quesnay valued physical quantities at market prices. "The value of the annual reproduction of the nation's wealth," Quesnay (Meek 1962a:150) explained, is ascertained by "all the work done and all the expenses incurred up to the sale of the products at first hand." Thus, the value of the gross product of agriculture is measure by the prices which the farmer receives in the market, not the price the wholesaler receives from the retailer nor the retailer from the consumer. Market prices at the farm gate are Quesnay's measure of value.

The value of the net product, Dupont de Nemours (1971 [1768]: 344–5) taught, equals the value of the gross product after deducting a fund to keep the farmer's capital intact in perpetuity. This fund replaces the current expenses consumed in production, restores the moveable capital used up in production and provides a profit for the farmer. The net product is the share of the gross product that goes to the proprietary classes. From the point of view of the farmer, it is a cost of production, because it is a contractually fixed payment that is renegotiated periodically and enforceable at law. From the point of view of the proprietor, according to Dupont (1971 [1768]:345), "It is the return (*prix*) from the expenses and the labour of clearing, draining, planting, building, etc. made in order to put the land in the state of being cultivated." It is ultimately a necessary cost of production. Without property rights in land and in moveable wealth, Quesnay (Kapp and Kapp 1949:104) explained, "the land would remain uncultivated. There would be neither proprietors nor peasants to make the necessary investments required in agriculture." Thus, both the *produit net* of the proprietary classes and the profit of the farmer are necessary costs of production, necessary in the sense that without them production would not be forthcoming. Whether the *produit net* gives society value for money is another question. In Marshallian terms, it is a pure surplus only if it exceeds the interest on invested capital and the allowance for capital consumption.

Indeed, the physiocratic definition of the *produit net* comes closer to Marshall's notion of a quasi-rent than to Ricardo's doctrine of pure rent or to Marx's concept of surplus value. Like a quasi-rent, the *produit net* is the income paid for the use of a long-lasting capital investment that required an original sacrifice to produce and a continuing cost to keep intact. In a steady state, both the *produit net* and the quasi-rent consist of two parts: an element of net income and an allowance for capital consumption. Both the *produit net* and the quasi-rent vary with the price of the product. Ricardian rent is paid for the use of those free gifts of nature which are scarce relative to their usefulness, which originally required no sacrifice to produce and which last in perpetuity without cost. Ricardian rent can be taxed away without affecting production, whereas "a properly organized tax," according to Quesnay,

should be regarded as a portion of the revenue taken out of the net product of the landed property of an agricultural nation; for otherwise it would not be subject to any rule keeping it in proportion to the nation's wealth, nor with the revenue, nor with the situation of tax-paying subjects; it would imperceptibly ruin everything before the administration became aware of it.

(Quesnay in Meek 1962a:238)

A pure surplus can be taxed away without affecting production. In contrast, the physiocrats generally held that only a part of the *produit net* is taxable,⁹ though, on occasion, they speak as if the whole net product is a pure economic surplus. Quesnay (Meek 1962a:201) and the other physiocrats repeatedly stated that the proprietors are responsible for “maintaining and improving their properties.” Marx’s surplus value is paid to the owners of capital who form a distinct social class, like Quesnay’s proprietary classes, but Marx does not treat the repair and replacement of the constant capital as part of surplus value. Marx would classify the *avances foncières* as constant capital. Surplus value is calculated after accounting for the constant capital used up in production, whereas Quesnay treats the maintenance of the *avances foncières* as being paid out of the *produit net*. Marx and Quesnay also have different theories of the origin of value. Marx held that labour is the sole value-creating substance, whereas land is the source of wealth for Quesnay. Marx (1963–71:1, 44) interpreted the *produit net*, however, as being the product of labour,¹⁰ which led him to call the physiocrats “the true fathers of modern political economy.”

In his theory of the regulation of value, Quesnay distinguished between what Smith called the natural and the market price or what Marshall would later call value in the long period and in the temporary period. Pufendorf and Cantillon had earlier made the same distinction. Quesnay called Smith’s natural price or Marshall’s long period price, “the fundamental price of commodities.” It covers all the necessary costs of production, including the recovery of the farmer’s necessary expenses and the *produit net* of the proprietors. Cantillon (1931 [1755]:121) similarly referred to the three rents which a farm must make: one for the rent of the landowner, one for the operating expenses of the farm and one for the profit of the farmer. These constitute the necessary costs of production, which Quesnay explained as follows:

The fundamental price of commodities is determined by the expenses or costs which have to be incurred in their production or preparation. If they are sold for less than they have cost, their price sinks to a level at which a loss is made. If they are sold at a price which is high enough to yield a gain sufficient to encourage people to maintain or increase their production, they are at their proper price.

(Quesnay in Meek 1962a:93)

Thus, the fundamental price of commodities equals their cost of production. It is equivalent to the zero profit, competitive equilibrium solution of Léon Walras.¹¹ If the price is above the cost of production, farmers expand production. This is a “proper price” (*bon prix*), because it brings growth and prosperity. If the price is below the fundamental price, it would “necessitate the abandonment of production of the produce whose price was constantly limited to such a low level” (Meek 1962a:94). The profit of the cultivators is a necessary cost of production. “If the sovereign imposes taxes on the cultivator himself,” Quesnay (Meek 1962a:82) explained, “if they swallow up his profit, there is a decline in cultivation and a diminution in the proprietors’ revenue.” When price is above all the necessary costs of production, output increases; when it is below, production falls. This explains the dynamic adjustment of production.

Quesnay wanted all the internal and external restrictions on the grain trade removed, because then grain would sell at a high and stable price, or *bon prix*. He opposed the mercantilist policies of Colbert, which isolated French grain from the world market and isolated one local market from another. With free trade, the price of grain would never deviate much from the average price on the world market. It would be relatively stable and sufficiently high to provide for economic progress. Farmers would no longer face local surpluses and low market prices. Consumers would no longer face local shortages, high market prices and occasional starvation. Surpluses and shortages occur in the temporary period in those years when a good crop or poor crop hits a local market. In the temporary period, market prices are determined by supply and demand.¹²

Quesnay (Meek 1962a:90) recognized Aristotle's distinction between value in use and value in exchange, but he argued that "these two values rarely have any connection with one another." Turning to the familiar paradox of value, Quesnay (Meek 1962a:90) observed, "A diamond, the least useful of items of exchangeable wealth, almost always has a market value which greatly exceeds the market value of wealth in the form of food." Like Smith, Ricardo and Marx, he focused his attention on the exchangeable value of wealth rather than its utility.

The Tableau Économique

It has become fashionable to represent the *Tableau Économique* as an input-output table.¹³ Wassily Leontief (1951:9), indeed, recognized this similarity in his *The Structure of the American Economy*: "The statistical study presented in the following pages may be best defined as an attempt to construct, on the basis of available statistical materials, a *Tableau Économique* of the United States for 1919 and 1929." In contrast, the table presented below is cast in the form of an interlocking system of national income accounts, which Quesnay evidently intended his *Tableau* to represent. Thus, he wrote to Mirabeau circa 1758, enclosing an early copy of the *Tableau* in the zig-zag form:¹⁴

I have tried to construct a fundamental *Tableau* of the economic order for the purpose of displaying expenditure and products in a way which is easy to grasp, and for the purpose of forming a clear opinion about the organization and disorganization which the government can bring about.

(Quesnay in Meek 1962a:108)

National income accounts display "expenditure and products in a way which is easy to grasp." Quesnay has only one productive sector, agriculture; and he does not discuss interindustry (more properly intraindustry) transactions between one agricultural producer and another, so he does not have a system of interindustry accounts. National income and product accounts measure the value added to output by all producers, but, by the physiocratic conception of things, neither the proprietary classes nor the sterile class add value to anything. They are consumers, not producers. The *Tableau Économique* cannot be an input-output table and still be true to physiocratic doctrine; it shows the income and expenditures that arise from production.

In his *Analyse du Tableau Économique*, Quesnay (Meek 1962a:150–67) divided the nation into three classes: the productive class, the proprietary classes and the sterile class. They may also be called the farmers, the proprietors and the artisans. The *Tableau Économique* in Table 5.1 presents an account for each class. Farmers produce the gross product, a part of which they retain. Proprietors and artisans purchase and consume or use up the rest of the gross product. Each account records income and expenditures as sources and uses of funds in milliards of constant livres, valued in terms of the *bon prix*, that is, “by the constant prices which are current among trading nations, in a situation where there is unremitting free competition in trade and complete security of property in the wealth employed in agriculture” (Meek 1962a:151). In his *Analyse*, Quesnay initially described this *Tableau* in the best possible state of cultivation, which depicts a prosperous, but stationary, economic optimum. T.Barna (1975:496) called this a “state of bliss.” Quesnay later discussed the progressive state and the declining state of society.

With an annual advance of two milliard livres, the farmers produce a gross product of five milliard livres, two milliard of which they sell to arti-

Table 5.1 The Tableau Économique^a (in milliard livres)

<i>I Productive Class</i>			
<i>uses</i>	<i>sources</i>		
Net product (II)	2 Purchases by:		
Nonfarm goods (III)	1 Sterile Class		
Retained by Productive	Food (III)	1	
Class to replace advances (I)	2 Materials (III)	1	
	Proprietary Classes (II)	1	
	Productive Class	2	
	(imputed) (I)		
Charges against the Gross Product	5 Gross Product	5	
<i>II Proprietary Classes</i>		<i>III Sterile Class</i>	
<i>uses</i>	<i>sources</i>	<i>uses</i>	<i>sources</i>
Nonfarm goods (III)	Net product (I)	Food (I)	1 Sales of nonfarm goods to:
1	2		
Food (I)	1	Materials (I)	1 Productive Class (I)
Purchases	2 Revenue	2	Proprietary Classes (II)
		Expenditures	2 Receipts

Note

a From data and description in *Analyse du Tableau*

Économique (Meek 1962a:150–67) arranged by the method in US Department of Commerce (1958) *U.S. Income and Output*. The Roman numerals indicate the account with which each transaction occurs.

sans in the form of foodstuffs and materials, one milliard of which they sell to the proprietors as foodstuffs and two milliards of which they retained on the farm to restore the advances necessary for production. The retained funds are treated as an imputed sale by farmers to themselves. Of the five milliard livres received by the farmers, a net product of two milliard is the rent of land, which the farmers are bound by contract to pay the proprietors. This leaves the farmers with three milliard livres to replace the capital consumed in production and to give the farmers a profit on their invested capital, which together consists of one milliard in manufactured goods purchased from the artisans, one milliard in agricultural products retained on the farm and one milliard in profits. Farmers originally advanced ten milliard to establish their farms, so that a profit of one milliard gives a rate of interest of ten per cent. Quesnay (Meek 1962a: 155) thought that farmers need to receive “an annual interest at least as high as that which is paid to idle rentiers.” The profit or interest is a necessary cost of production, because, without it, farmers would withdraw from agriculture.

The proprietary classes receive a net product of two milliard livres, which covers the rent of the proprietors, the tithes of the clergy and the taxes of the sovereign. They spend half on foodstuffs and half on the goods and services provided by the artisans. The sterile class receives one milliard from the farmers and another milliard from the proprietors and spends one milliard on food and another milliard on materials, but, Quesnay (Meek 1962a:152) observed, “nothing is involved here but the consumption or destruction of products, with no reproduction at all; for this class subsists only through the successive payment of the recompense due for its labour.” The expenditures by the proprietors and the artisans are just sufficient to provide farmers with the necessary funds to maintain production in a steady state. Where the agricultural potentialities of the nation are fully developed, the net product is at the maximum possible level. This is a physiocratic optimum.

The steady state presented in Table 5.1 supposes that the agriculture is in the best possible state, where large-scale farms cultivate all the arable land in the nation at the least possible cost, which requires that farmers be free to manage their properties as they think best, where internal and external free trade provide a high and stable price (*bon prix*) for grain, where private property in land and in capital is guaranteed by the sovereign and where taxes do not impede the cultivation of the land. The economy would spontaneously achieve the best possible state of its own accord, if it were not for bad economic policies that arrest development and impoverish the nation.

French agriculture was not in the best possible condition in the eighteenth century. The ruinous fiscal regime of Louis XIV left the state near bankruptcy. Small-scale, poverty-stricken peasant farmers could neither rent enough land nor acquire enough capital to produce the maximum possible net product. The inefficient and oppressive system of taxation, the excessive luxury of the rich and the restrictive economic policies of Colbert depressed much of the economy. These conditions led Quesnay to recommend that,

if the territory were not entirely cultivated and ameliorated, if roads were needed, if there were rivers to render navigable and canals to construct for the carriage of products, the proprietors ought to save on their spending on the *sterile class*, in order to make the expenditures necessary to increase their revenues and their enjoyments as much as may be possible.

(Oncken 1965 [1888]:318–19)

The purchase of luxury goods by the proprietary classes from the sterile classes did nothing to advance the wealth of the nation. New *avances foncières* by the proprietary classes, that is, new capital investments in the infrastructure and in the immovable improvements to agriculture, would increase production in agriculture until the productive classes could produce the greatest possible net product in agriculture. The physiocrats looked to the net product as a measured economic welfare.

Large-scale farms that produce grain at the lowest possible cost and that yield the greatest possible net product depend on the advances of the farmers. Farmers are the active agent of production, according to Quesnay.

It is the wealth of the farmers which renders the land fertile; the cultivation of the land entails considerable expenses, and the more these expenses are increased, the more fruitful the land is, and the greater are the gains for the country workers, the profits for the farmers, and the revenue for the proprietors which the land brings in.

(Quesnay in Meek 1962a:106)

The proprietors originally prepared the land for cultivation, and they remained responsible for maintaining and, when warranted, extending the *avances foncières*. The productive class provided the capital and directed the operation of the farms. Economic growth and national prosperity required the capital investments of both the proprietors and the farmers.

Taxation was a major issue for Quesnay, because the system of taxation was particularly onerous. The Proprietary Classes—the proprietors of land, the clergy and the sovereign—were exempt from taxes, so that only the ordinary citizen paid them, which were collected by tax farmers who purchased the legal right to extort taxes from the people by means foul and fair. The profit of the tax farmers equalled the excess of their collections over their purchase price. The inequity of the tax law and the arbitrary means of their collection provoked unrest and pushed France toward the Revolution.

The logic of his theory led Quesnay to advocate a single tax on the rent of land (*impôt unique*). Only the propriety classes had disposable income, which equalled that part of the net product (*produit net*) which exceeded the necessary charges to keep the *avances foncières* intact in perpetuity. Their great riches left them with a surplus after those maintenance charges, so they could afford to pay the taxes without suffering. They lived in luxury, not in poverty. Competition between farmers raised the rent they paid to the proprietors until no surplus remained. Farmers operated at their break-even point, so that they earned only the market rate of interest on their invested capital. If they received less, they would quit their farms. A tax on wages or on commodities would be counter-

productive at best and destructive at worst because wages of labour were at subsistence. Thus, Quesnay had an Iron Law of Wages.

The level of wages, and consequently the enjoyments which wage-earners can obtain for themselves, are fixed and reduced to a minimum by the extreme competition which exists between them.

(Quesnay in Meek 1962a:194)

If wages or necessities were taxed, labourers would be forced to emigrate, to beg or to steal for their subsistence. Even though a tax may be assessed on interest, on wages or on commodities, the incidence of the tax must ultimately be shifted to the rent of land, or the economy will stagnate and decline.

The idea of a single tax on the rent of land attracted many followers, including Henry George (1937 [1886]), the American, who dedicated his *Protection or Free Trade* “To the memory of those illustrious Frenchmen of a century ago: Quesnay, Turgot, Mirabeau, Condorcet, Dupont and their fellows who in the night of despotism foresaw the glories of the coming day.” George derived his theory from Ricardo, however, not from the physiocrats.

Security, liberty and property

Quesnay was an eighteenth century liberal, who opposed the mercantilist policies of preference and restraint introduced by Colbert, but he was more than a political economist. He was a great champion of individual liberty and private property. The emphasis by the physiocrats on the security of property and the rule of law no doubt reflects the arbitrary nature of government and consequent lack of security in France during the eighteenth century and early modern times. Dupont (1971 [1768]:346) put their political agenda in an aphorism: “No property without liberty; no liberty without security.”

L’Abbé Baudeau argued in his *Introduction a la philosophie économique* that instruction in economic ethics may prevent some unlawful usurpation of individual rights, but it cannot stop them all. A tutelary power is, therefore, necessary to protect the people. Baudeau (1971 [1771]:673) identified two necessary sorts of protection: first, “civil or judicial protection, which guarantees to each his properties and his liberty against particular usurpations;” and, second, “political or military protection, which guarantees the same properties, the same liberties, against the general usurpations that one would have to fear from outside of the society.” These correspond to the traditional duties of the sovereign. These traditional duties appear in Plato and Aristotle, and they were endorsed by Locke. The *avances foncières* of the proprietary classes, which include the sovereign, correspond to Smith’s third duty of the state: the erection of certain public works.

Quesnay argued that the protection of private property by a sovereign or civil magistrate was a necessary condition to promote the wealth of the nation. Eighteenth and nineteenth century liberals—Locke, Quesnay, Smith and Ricardo through to J.B.Clark and beyond—made this a fundamental duty of the state. “The property rights in land and

personal wealth should be guaranteed to the legitimate owners,” Quesnay (Kapp and Kapp 1949:104) wrote, “for this safety of property is the real basis of the economic order of society.”

Quesnay did not view property rights as an absolute right or universal claim. His programme of reform aimed to remove barriers to trade and curtail monopoly privileges, which certainly infringed upon those artificial property rights. Those restrictions were contrary to the natural order, because they were not “self-evidently the most advantageous to the human race.” They violated the utilitarian criterion of the greatest good for the greatest number.¹⁵ For the same reason, Quesnay supported the interests of capitalist farmers and justified the privileged position of the proprietary class, because they were essential to economic prosperity.

Quesnay endorsed Locke’s ethical theory of property rights, though Quesnay’s first concern was the seigniorial rights of the proprietors of the land. The right of man to the fruits of his labour was not only the ethical basis for private property, but it was also indispensable to the prosperity of the nation. The economic welfare of all the members of society depended on the security of private property.¹⁶ Without the security of private property, Quesnay (Meek 1962a:69) wrote, “everything is reduced to cunning, dissoluteness, injustice, wrangling, enmity, and partisanship.” With the security of property, however, individual self-interest will restore society to order and prosperity. Quesnay reads as if he were Adam Smith extolling the virtues of the invisible hand, where he wrote:

If the fruits of ownership and the recompense due to labour are restored and assured, men will of their own accord set themselves back again within the moral order. Here we find the true foundation of natural law and civil order

(Quesnay in Meek 1962a:69)

Thus, provided the state established a regime of positive law based on natural law, the economy possessed a self-righting mechanism. The physiocrats were optimists, whose natural order was the prosperous and happy state of society.

Their economic motto was *laissez-faire, laissez-passer*.¹⁷ Quesnay favoured free trade, especially the elimination of both the internal and external barriers to trade in grains. He thought free trade would produce a high and stable price for corn (*bon prix*), which would increase the wealth of the nation.

By the free and easy commerce of imports and exports, grains constantly have a more stable price, because the most stable price is that which passes between trading nations. This commerce always smooths out the annual irregularity of the harvests of nations by supplying those that have a shortage with the surplus of those that have an abundance, which always and everywhere restores production and prices to nearly the same level.

(Oncken 1965 [1888]:352)

If farmers could always sell their grain on the world market, they would receive a steady high price, so that local and national fluctuations in agricultural revenue might be

alleviated. Since national wealth comes from the net product of agriculture, anything that would stabilize a high price of grain would assure the reproduction of the national wealth. For Quesnay, a policy of laissez-faire would provide the best possible net product from agricultural production.

The physiocrats advocated freedom for a wide range of human activities, but, like property rights, the right to freedom was not universal. Dupont (1971 [1768]:562–3) listed the following freedoms: personal freedom to procure those things necessary for the satisfaction of each individual, freedom of occupation and work, freedom to employ movable capital, freedom of trade and commerce, freedom to profit from agriculture, freedom to make improvements to the land and freedom to exploit the land. Freedom required the government to provide security of property, to protect individual liberties and to give the citizens instruction in the immutable laws of the natural order. Magistrates ought to decide particular cases in accordance with the laws of the natural order reduced to positive laws by the sovereign. Quesnay (Meek 1962a:234–8) was quite prepared to advocate government intervention where he thought the free activities of private individuals might harm the production and reproduction of wealth, as in the cases of monopoly, the emigration of labour and capital, the excessive expenditure on luxuries and usurious interest rates. His proposal to establish government on the model of the despotism of China was unquestionably a grave violation of the principles of liberty. Perhaps he thought that only a despot could carry out his reforms in accordance with the natural order, “self-evidently the most advantageous to the human race.”

Conclusion

Quesnay presented distinct theories of the origin of value, the measure of value and the regulation of value. The characteristic assertion that “Land is the unique source of wealth” is a remote and untenable idea from the modern point of view. Yet, the physiocrats held that, as the source of wealth, land is the origin of value. Only agriculture creates value. All other economic activity consumes as much value as it produces, but agriculture produces a surplus, the *produit net*. The *produit net* is not surplus value in the sense of Karl Marx and his followers, however, because the proprietors must hire labour and incur other expense out of the funds provided by the *produit net* to keep their capital investments in the land (*avances foncières*) intact. Thus, the *produit net* is partly surplus value and partly variable capital in the terminology of Marx, that is, partly disposable income and partly capital consumption. The measure of value for Quesnay is the market price of the gross product of agriculture at the farm gate. The market regulates the value of commodities at their cost of production, which Quesnay called “the fundamental price of commodities.” Competition equates the net income of farmers to the interest on their capital. This is the zero profit solution of Léon Walras.

The Marquis de Mirabeau claimed that the *Tableau Économique* was one of the three greatest inventions in the history of civilization, the other two being the invention of writing and the invention of money. While Smith had some fun at the expense of the Marquis, he still recognized that the system of Quesnay was a great advance in political economy. The *Tableau* in Table 5.1 is cast in the form of an interlocking system of national income and product accounts instead of an input-output table, because,

according to physiocratic doctrine, only agriculture produces value. Therefore, the output of agriculture equals the gross national product. The proprietors and artisans are consumers, not producers, which, however unrealistic, flows from the assertion that land is the source of value.

In his *Analyse*, Quesnay turned his *Tableau* into an apparatus for analytical welfare economics. He began in an optimum state where farmers produce the best possible crop. He then discussed what would happen if the proprietors spent too much on luxuries and too little on capital improvements to the land, if trade restrictions prevented grain from selling at a high and stable price (*bon prix*), if farmers did not invest enough to produce at the least possible cost, if taxes diverted funds from producers and if the state did not provide for individual liberty and for the protection of private property. The *Tableau* pretended to look behind the veil of money to see the real forces at work in the economy; but, as Leo Rogin (1956:49) commented, “a normative theoretical model which is not susceptible of being translated into the realm of historical fact is not a scientific theory, but a utopian one.”

On the same day that the king threw Mirabeau in jail for his book on taxation, Madame du Hausset, lady-in-waiting to Madame de Pompadour, asked Quesnay why he had such a self-conscious look on his face when he stood before the king. “Madame,” Quesnay (Meek 1962a:29) replied, “When I am in the room with the king, I say to myself: There is a man who can have my head cut off; and this idea makes me uneasy.” As a cautious social revolutionary, Quesnay wanted to keep his head, so he published his books and articles anonymously, even though they contained an ideological justification for the privileged position of the most powerful members of society: the aristocracy, the clergy and the crown. The physiocrats had their day of glory in 1774, shortly before the death of Quesnay, when the young Louis XVI appointed Anne Robert Jacques Turgot to the high office of Comptroller-General of Finances. He supported many physiocratic policies, but his reforms received a hostile response. The policy of free trade in grain led to riots in the streets, while his attempt to reform feudal privileges provoked so much criticism from the nobles and the clergy that he was removed from office in 1776. “This marked the abrupt and complete end of physiocracy,” Eduard Heimann (1964 [1945]:63) has observed, “But it was also the end of the attempt at a revolution from above, which was the sole alternative to the real revolution, the revolution from below.”

6

Francis Hutcheson

Adam Smith's professor

A brief life of Francis Hutcheson

Francis Hutcheson was born on 8 August 1694, in Drumalig near Armagh in Northern Ireland. His father, John Hutcheson, was a Presbyterian minister, as was his grandfather, Alexander Hutcheson, who had originally immigrated from Scotland. As children, Francis and his brother Hans were sent to live with their grandfather in order to attend a local school for dissenters and there to obtain the rudiments of a classical education. At age fourteen he moved on to a dissenting academy in Killyleagh, which polished his knowledge of the classics and started him in philosophy. This prepared him for university.¹

In 1711 he entered the University of Glasgow, which had several eminent professors. Robert Simson, the geometer, translated a popular edition of Euclid's *Elements*, which is still in print. Gershom Carmichael, his professor of moral philosophy, was a recognized authority on natural law, especially the work of Samuel von Pufendorf. After his graduation, Hutcheson continued his education and his family tradition by studying for the ministry. John Simson, his professor of divinity, had a major influence on both his philosophy and his theology. Simson was something of a free thinker who sought to bring "new light" to the conservative Calvinist clergy of Scotland, but he found himself charged with heresy. While he was eventually forbidden to teach or to preach, he remained at the University. Hutcheson, like Simson, was also charged with heresy, but escaped censure. The belief in the innate benevolence of mankind placed Hutcheson closer to the "new light" of Simson than to the old Calvinist doctrine of original sin.

After six years of study at the university, he went back to Northern Ireland to minister to dissenting Presbyterians. Before he could settle into a congregation, however, he was invited to establish an academy for dissenters and nonconformists in Dublin. Life in Dublin during the early 1720s suited Hutcheson's interests in literature and philosophy, while his pleasant personality charmed the lettered society of Dublin and recommended his company to authority. He published his first and most original book anonymously in 1725, *An Inquiry into the Original of Our Ideas of Beauty and Virtue*. The book was well received, so he put his name on the second edition, which was published the following year. His *Inquiry* covers aesthetics, ethics and economics that he refined in his later books. It established his international reputation as a philosopher. He was one of the first moderns to treat aesthetics.

His *Inquiry* was written to promote and defend the doctrine of the moral sense presented by Anthony Ashley Cooper, Third Earl of Shaftesbury² (1995 [1711]:I, 262), who apparently first introduced the notion of a "natural moral sense." Hutcheson's belief

in the inherent benevolence of mankind prompted him to criticize the antithetical views expressed by Bernard Mandeville (1924 [1714]) in *The Fable of the Bees: or, Private Vices, Publick Benefits*, originally published in 1705 under the title of *The Grumbling Hive: or Knave Turn'd Honest*. Hutcheson was offended by the notion that selfish motives lie behind virtuous actions, that, for example, vanity inflated by a love of praise prompts people to act benevolently.³ He believed that people perceive moral excellence with an instinctive moral sense, like the sense of touch or taste. He criticized Mandeville again in his *Observations on "The Fable of the Bees"* published in 1726.⁴ Hutcheson (1989 [1758]: 114) recognized that self-interest leads people to desire natural goods because our senses show that "*Meats, Drink, Harmony, fine Prospects, Painting, Statues*" are immediately good and because our reason shows that "*Riches and Power*" are a means to improve our well-being, but he maintained that selfish motives should be subordinate to generous and social principles.

Hutcheson's moral philosophy was in the natural law tradition of Grotius, Pufendorf and Locke. He believed that the order of nature was established by a benevolent Deity and that mankind could discover the laws of nature by careful observation and by right reason without resorting to supernatural revelation. This is similar to the natural law philosophy of Quesnay and the physiocrats, whose ideas shared a similar line of descent. The first sentence of his *System* has an Aristotelian flavour: "The intention of moral philosophy is to direct men to that course of action which tends most effectually to promote their greatest happiness and perfection."⁵ Hutcheson (2002 [1726]:177) put the matter rather more famously in his *Inquiry*: "*That Action is best, which procures the greatest Happiness for the greatest Numbers*" Utilitarian principles appear repeatedly throughout Hutcheson's writings, which led to the utilitarian philosophy of Jeremy Bentham.

While still in Dublin, he enlarged upon his theory of the moral sense with *An Essay on the Nature and Conduct of the Passions and Affections with Illustrations on the Moral Sense* (1999 [1728]). With the death of Gershom Carmichael, his professor of moral philosophy, in the following year, Hutcheson was elected to fill the vacancy and returned to the University of Glasgow, where he would become Adam Smith's most influential professor.

Hutcheson arrived in Glasgow and began lecturing in 1730. His lectures were published posthumously as *A System of Moral Philosophy* in 1755, by which time Smith had become professor of moral philosophy. W.R. Scott (1966 [1900]:231) reported that the manuscript of the *System* "was used by Hutcheson for his class lectures about 1737." Smith attended these lectures in 1738–39. William Leechman, who wrote the Preface to Hutcheson's *System* (2000 [1755], xxxiii), mentioned that he lectured on the same material year after year, so the *System* probably reflects what Smith heard in class. Hutcheson published much of the same material in his text for undergraduates,⁶ *A Short Introduction to Moral Philosophy* (1747). Even though the *Short Introduction* was published before the *System*, it appears to have been written later, according to the evidence presented by Scott (1966 [1900]:244–9).

Adam Smith evidently followed Hutcheson when he prepared his own lectures. Smith had available to him the *Inquiry*, the *Short Introduction* and his recollection of the lectures by Hutcheson when he gave his first lectures on moral philosophy in the 1752–53 session.⁷ Scott (1966 [1900]: 235) has presented a table showing that "the order of

topics discussed in the economic portions of Hutcheson's *System* is repeated by Smith in his *Glasgow Lectures* and again in the *Wealth of Nations*”⁸ W.L.Taylor (1965) has filled in many informative details of Scott's table. He showed that Hutcheson influenced the substance of Smith's analysis, especially on the division of labour and the origin of money.⁹

As Smith followed Hutcheson, so Hutcheson followed those who went before him. In the foreword to his *Short Introduction*, Hutcheson declared with all candor that

The learned will at once discern how much of this compend is taken from the writings of others, from Cicero and Aristotle; and to name no other moderns, from Puffendorf's smaller work, de officio hominis et civis, which that worthy and ingenious man the late Professor Gershom Carmichael of Glasgow, by far the best commentator on that book, has so supplied and corrected that the notes are of much more value than the text.

(Hutcheson 1747:i)

Thus, Hutcheson followed Carmichael (2002), who had followed Pufendorf, Locke and others in his treatment of natural law and economics. In his turn, Pufendorf followed *De jure belli ac pacis* by Hugo Grotius (1964 [1625]). Like many other professors, Hutcheson began by teaching what he had been taught and modified his material as his ideas matured. The charge of plagiarism cannot very well be sustained against him, or against Smith, however, because they inherited a common tradition in the history of economic ideas stretching back to Plato and Aristotle.

In its opening chapters, *The Wealth of Nations* parallels the logic and embraces the substance of Hutcheson's economic analysis, though in a modified and more elaborate form. Hutcheson in his turn followed the discussion of the origin of civil society by Plato, Aristotle, Cicero, Grotius, Hobbes, Pufendorf and Locke. The influence of Hutcheson on Smith is evident on other topics, too, such as the theory of interest, his maxims on taxation, and, most important of all, the simple and obvious system of natural liberty.

The division of labour

Mandeville (1988 [1714]:II, 284) may have been the first to use the metaphor of “dividing labour” in reference to the specialization of work: “No number of Men, when once they enjoy Quiet, and no Man needs to fear his Neighbour, will be long without learning to divide and subdivide their Labour.” He then continued with a passage that Adam Smith rephrased:

if one will wholly apply himself to the making of Bows and Arrows, whilst another provides Food, a third builds Huts, a fourth makes Garments, and a fifth Utensils, they not only become useful to one another, but the Callings and Employments themselves will in the same

Number of Years receive much greater Improvements, than if all had been promiscuously follow'd by every one of the Five.

(Mandeville 1988 [1714]:II, 284)

He also mentioned “Watch-making” on the same page, which he may have derived from Sir William Petty. A few decades earlier, Petty illustrated the advantages of the division of labour with the empirical example of manufacturing a watch, a separate part being made by each labourer. However new the metaphor may have been, the concept can be traced back to antiquity. In his *Republic*, Plato related how the desire for a variety of different things and the superior productivity of specialized labour gave rise to buying and selling, the invention of money and the origin of the city of pigs. In his *System*, Hutcheson (2000 [1755]:I, 289–90) paraphrased and recommended to his readers the discussion of the division of labour in *De officiis* by Cicero, who had argued that the cooperation of many skilled labourers not only gives rise to the economic benefits of food, clothing, housing, health and security but also the customs, laws, rules of justice and conventions of civil society. Later, in his *Treatise*, David Hume (1964 [1739–40]:II, 259) gave a metaphysical explanation of how “the partition of employments” allowed mankind to rise above the cruel and necessitous state of nature. Like Plato, Cicero and Hutcheson, Hume traced the origin of justice, private property and the state back to the division of labour.

In his *Inquiry*, his *Observations*, his *System* and his *Short Introduction*, Hutcheson began his economic analysis of the division of labour in a state of nature that preceded the establishment of civil society. His view of the state of nature was remarkably different from the famous conditions depicted by Hobbes (1968 [1651]:186), who believed that the original condition of man was war, “where every man is Enemy to every man.” According to the economic analysis of Hobbes, progress is not possible under such conditions:

There is no place for Industry; because the fruit thereof is uncertain: and consequently no Culture of the Earth; no Navigation, nor use of the commodities that may be imported by Sea; no commodious Building; no Instruments of moving, and removing such things as require much force; no Knowledge of the face of the Earth; no account of Time; no Arts; no Letters; no Society; and which is worst of all, continual feare, and danger of violent death; And the life of man, solitary, poore, nasty, brutish, and short.

(Hobbes 1968 [1651]:186)

Hutcheson criticized Hobbes. He claimed that our moral faculty naturally binds all mankind together with benevolence and humanity. “This first state founded by nature is so far from being that of war and enmity,” Hutcheson (2000 [1755]:I, 281) claimed, “that it is a state where we are all obliged by the natural feelings of our hearts, and by many tender affections, to innocence and beneficence to all.”

The tradition of Plato, Aristotle, Cicero and many others suggests that Hutcheson emphasized the division of labour, because it lies at the economic foundation of civil

society. In his *System*, Hutcheson agreed with Pufendorf and other natural law philosophers that a solitary individual could scarcely survive in a state of nature:

Again, 'tis plain that a man in absolute solitude, tho' he were of mature strength, and fully instructed in all our arts of life, could scarcely procure to himself the bare necessities of life, even in the best soils or climates; much less could he procure any grateful conveniences. One uninstructed in the arts of life, tho' he had full strength, would be still more incapable of subsisting in solitude: and it would be absolutely impossible, without a miracle, that one could subsist in this condition from his infancy.

(Hutcheson 2000 [1755]:I, 287)

He also rejected the notion of a bygone Golden Age of idleness, abundance and wealth. Hutcheson thought, to the contrary, that in the earliest ages of mankind society would be based on the family and that families would join together in small communities for their mutual protection and to benefit from the advantages of the division of labour.

Earlier he had written in his *Observations on "The Fable of the Bees"* that, even if a man could survive on a minimum subsistence, he would gladly endure the toils of labour to obtain some of the pleasures of life. Labourers would gladly trade their leisure for a great variety of conveniences, even beyond the necessities of life. Using the images of Hugo Grotius, Hutcheson asked:

What man, who had only the absolute necessities of meat and drink, and a cave or a beast's skin to cover him, would not, when he had leisure, labour for farther conveniences, or more grateful food? Would not every mortal do so, except some few pretended gentlemen inured to sloth from their infancy, of weak bodies and weaker minds, who imagine the lower employments below their dignity? Does not the universal choice of mankind, in preferring to bear labour for the conveniences and elegancies of life, shew that their pleasures are greater than those of sloth, and that industry, notwithstanding its toils, does really increase the happiness of mankind? Hence it is that in every nation great numbers support themselves by mechanic arts not absolutely necessary since the husbandman is always ready to purchase their manufactures by the fruits of his labours, without any constraint; which they would not do if the pleasures or happiness of idleness were greater.

(Hutcheson 1989 [1758]:71–2)

The utilitarian principle of self-gratification leads them to trade their leisure time for the material pleasures of life. People employ the principle of opportunity cost when they compare one alternative to another. Individual choice drives the economic progress of mankind. Prosperity requires self-interest, though Hutcheson believed that men naturally temper their self-love with altruism.

In his *Republic*, Plato supposed that labourers were endowed by different abilities at birth. Given their innate abilities, he gave two reasons why the division of labour increases the volume of output that any group of labourers can produce: (1) specialization

increases their dexterity and (2) it allows work to be done at the right time. In his *System*, Hutcheson apparently considered labourers to be equally able before they specialize in an occupation, for he observed that

'tis well known that the produce of the labours of any given number, twenty, for instance, in providing the necessities or conveniences of life, shall be much greater by assigning to one, a certain sort of work of one kind, in which he will soon acquire skill and dexterity, and to another assigning work of a different kind, than if each one of the twenty were obliged to employ himself, by turns, in all the different sorts of labour requisite for his subsistence, without sufficient dexterity in any.

(Hutcheson 2000 [1755]:I, 288)

This suggests that anyone could learn any occupation. The improvement in dexterity arises from staying at a single task and not changing jobs. Hutcheson (2000 [1755]:I, 289) added a third set of reasons why the division of labour increases output when he wrote: "The inventions, experience, and arts of multitudes are communicated; knowledge is increased, and social affections more diffused."¹⁰ Among the ancients, Lucretius (1951) emphasize inventions and discoveries above all else.

Following Cicero, Hutcheson (2000 [1755]:I, 289) expanded his analysis where he noted that "Larger associations may further enlarge our means of enjoyment, and give more extensive and delightful exercise to our powers of every kind." The joint effort of many individuals can execute greater designs of more permanent and extensive benefit to society.

Again some works of the highest use to multitudes can be effectually executed by the joint labours of many, which the separate labours of the same number could never have executed. The joint force of many can repel dangers arising from savage beasts or bands of robbers, which might have been fatal to many individuals were they separately to encounter them. The joint labours of twenty men will cultivate forests, or drain marshes, for farms to each one, and provide houses for habitation, and inclosures for their flocks, much sooner than the separate labours of the same number. By concert, and alternate relief, they can keep a perpetual watch, which without concert they could not accomplish.

(Hutcheson 2000 [1755]:I, 289)

The benefits of the division of labour extend beyond the production of necessities and conveniences. Mankind can have some of the finer pleasures and social joys of life as well as defence against the violence of man and beast.

The necessity of barter

When labourers specialize in the production of a single commodity, they can produce not only a much greater quantity of things than if each became a jack-of-all-trades and tried

to produce a little of everything; they will also produce a surplus of a single commodity that is far beyond their needs. As Hutcheson put it in his *Inquiry*:

The *Labour* of each Man cannot furnish him with all Necessarys, tho it may furnish him with needless Plenty of one sort; Hence the *Right* of *Commerce*, and *alienating* our Goods; and also the *Rights* from *Contracts* and *Promises*, either to Goods acquir'd by others, or to their *Labours*.

(Hutcheson 2002 [1726]:287)

The division of labour, as Plato and Aristotle observed, requires a means of exchanging individual surpluses; otherwise, the surplus product of each labourer would stale in abundance. Exchange, whether by gift, by barter or by money, requires in its turn the institutions of property and contract, which Hutcheson thought would arise naturally prior to the establishment of civil society.

In his *System*, he elaborated on the relation between the division of labour and barter. With the extension of the division of labour, Hutcheson envisioned how each labourer

procures a great quantity of goods of one kind, and can exchange a part of it: for such goods obtained by the labours of others as he shall stand in need of. One grows expert in tillage, another in pasture and breeding cattle, a third in masonry, a fourth in the chace, a fifth in iron-works, a sixth in the arts of the loom, and so on throughout the rest. Thus all are supplied by means of barter with the works of complete artists.

(Hutcheson 2000 [1755]:I, 288–9)

Without the division of labour, Hutcheson (2000 [1755]:I, 289) emphasized, “scarce any one could be dextrous and skilful in any one sort of labour.”

Adam Smith (1976 [1776]:25) repeated a similar story in his second chapter, “Of the Principle which gives occasion to the Division of Labour.” He began by attributing the division of labour to “a certain propensity in human nature which has in view no such extensive utility; the propensity to truck, barter and exchange one thing for another.” Later, however, he echoed Hutcheson’s words where he wrote that

man has almost constant occasion for the help of his brethren, and it is in vain for him to expect it from their benevolence only. He will be more likely to prevail if he can interest their self-love in their favour, and show them that it is for their advantage to do for him what he requires of them.

(Smith 1976 [1776]:26)

Hutcheson made the same distinction in his *Inquiry*. Edwin Cannan (1937: lii–liv) argued that Mandeville made Smith see that “it is not from the benevolence of the butcher, the brewer or the baker that we expect our dinner, but from a regard to their own self-interest.” However, Smith’s language closely follows the words of Hutcheson (2002 [1726]:284): “*Benevolence* alone is not a Motive strong enough to *Industry*, to bear *Labour* and *Toil*...*Self-love* is really as necessary to the *Good* of the *Whole*, as

Benevolence.”¹¹ Hutcheson and Smith both claimed that benevolence was too weak a motive to promote trade.¹² Both held that self-love induces people to work and to barter.

Hutcheson traced both the origin of private property and the accumulation of wealth to the division of labour. Each separate labourer produces a surplus of his own product. These surpluses are, on the one hand, an accumulation of wealth; and, on the other hand, they are private property. Without a claim to the surplus, labour would not specialize in production and produce a surplus. In his *Inquiry*, Hutcheson explained that

Depriving any person of the Fruits of his own innocent Labour, takes away all motives to *Industry* from *Self-love*, or the nearer *Ties*; and leaves us no other motive than *general Benevolence*: nay, it exposes the *Industrious* as a constant Prey to the *Slothful*, and sets *Self-love* against *Industry*. This is the Ground of our *Right of Dominion* and *Property* in the *Fruits* of our *Labours*; without which *Right*, we could scarce hope for any *Industry*, or any thing beyond the Product of uncultivated Nature. *Industry* will be confin'd to our present Necessitys, and cease when they are provided for; at least it will only continue from the weak Motive of *general Benevolence*, if we are not allow'd to store up beyond present Necessity, and dispose of what is above our Necessitys, either in Barter for other kinds of Necessaries, or for the service of our Friends and Familys.

(Hutcheson 2002 [1726]:285–6)

Hutcheson justified private property on two grounds that came from Carmichael's interpretation of John Locke: first, the right of first occupancy; and, second, the right to the fruits of labour. Locke (1988 [1690]: 288) had written that whatever labour “removes out of the State that Nature hath provided, and left it in, he hath mixed his *Labour* with, and joyned to it something that is his own, and thereby makes it his *Property*.”¹³ Those things which a person removes from nature are acquired by occupancy. Hume also considered Locke's labour theory of property rights to be a species of occupancy.

Hutcheson distinguished between those individual rights which existed prior to civil power and those rights which arose under civil authority. He called them natural rights and adventitious rights: “The *natural* are such as each one has from the constitution of nature itself without the intervention of any human contrivance, institution, compact, or deed,” Hutcheson (2000 [1755]:I, 293) wrote, whereas the “*adventitious* arise from some human institution, compact, or action.” Natural rights arise in a state of nature where no one is subject to the power of any other person, where everyone lives in a state of natural equality and where everyone enjoys the right of natural liberty. All have a natural right to exercise their own powers, provided they do no injury to others and provided the public interest does not require any restriction of their liberty. These rights are natural because they arise from self-love and from the sense of benevolence by our moral faculty. Without the natural right to private property, society would be reduced to subsisting on the bare necessities of life. The main purpose of civil authority is to enforce the laws of nature and to punish those who violated them. Hutcheson (2000 [1755]:I, 319–20) reconciled the utilitarian principle of the greatest good for the greatest number with the

Lockean right to the fruits of labour: property is an incentive to work, while the produce of labour is a benefit to society.¹⁴

In the early stages of society, Hutcheson viewed each labourer as an independent entrepreneur, who undertakes to specialize in the production of a single commodity. They each produce a surplus that is beyond their own needs. This leads to barter. Once a system of exchanging their individual surpluses is established, people satisfy most of their needs from the produce of other labourers. Smith followed the analysis of Hutcheson for the early stages of civil society. The labourer appears as an independent businessman as well as a productive craftsman or farmer. Once more capital has accumulated, labourers are employed by masters who advance them their wages and provide them with the tools and materials of their work, as in Smith's famous example of the pin factory.

Hutcheson gave a different account of the accumulation of things from Adam Smith (1976 [1776]:277), who claimed that "the accumulation of stock must, in the nature of things, be previous to the division of labour." Smith does not address the question of who produced the original stocks of things that supplied the weaver with his tools, his materials and his maintenance. His theory of accumulation apparently takes place in the advanced state of civil society. Hutcheson thought that surpluses of different things accumulate in the hands of individual labourers as soon as they specialize in production. In his *System*, Hutcheson declared

'tis plain that our acquisition by labour in any one sort of goods may extend far beyond our own present consumption and that of our families; and they may be stored up for the future: nay it may extend beyond all present and future consumption; as we may employ the surplus as a matter of beneficence, or of barter for goods of different kinds which we may need. Otherways each one would be obliged to practise all sorts of mechanick arts by turns, without attaining dexterity in any; which would be a publick detriment.

(Hutcheson 2000 [1755]:I, 328–9)

The accumulation of surpluses arises simultaneously with the division of labour. They are part of the same process. The division of labour produces a surplus of the product of each labourer that is beyond the needs in present consumption. Thus, barter becomes a necessity.

The invention of money

The difficulty of barter leads to the invention money, as Aristotle (1912:16) said long ago: "barter introduced the use of money." Barter requires a double coincidence: a man who wants to buy one product must find a seller who wants to buy an equal value of his product. This condition is not easily satisfied, as Hutcheson (2000 [1755]:II, 56) explained by way of example: "The man who wants a small quantity of my corn will not give me a work-beast for it, and his beast does not admit division. I want perhaps a pair of shoes, but my ox is of far greater value, and the other may not need him." Many

authorities discussed this problem before Hutcheson, so it was not original with him. Pufendorf wrote, for example:

But after we began to desire such a variety of things for convenience or pleasure, it was certainly not easy for every man to possess the things which another would wish to exchange for his own, or which were equal in value to the other's things.

(Pufendorf 1927 [1673]:72)

Money allows labourers to sell their surplus produce for money and buy the products of other labourers with money. For a commodity to serve as money, Hutcheson (2000 [1755]:II, 55) argued "it must be generally desired so that men are generally willing to take it in exchange." Thus, money is a general claim on commodities that everyone will accept, which was Aristotle's definition of money. Gold and silver satisfy this condition better than other commodities, according to Hutcheson (2000 [1755]:II, 55–6), because they are portable, scarce, divisible and durable. Here, he may also have been following Pufendorf (1927 [1673]:73), who made the same points about gold and silver.

The measure of value

The invention of money as a medium of exchange and a store of value logically leads to the question of money as a measure of value. Since gold and silver vary in their value like every other commodity, economists looked for an invariable measure of value. Landlords were particularly interested in preserving the value of their rental incomes as inflation reduced the real value of rents payable in money. Pufendorf suggested that land itself would best maintain its value, because, taking the good years with the bad, the produce of land tends to maintain its value. By similar reasoning, Petty and Locke also recommended grain as a stable measure of value over long periods of time.

Hutcheson carried this theory further when he argued that grain and beef were the best measures of value because they require a constant sacrifice of labour to produce them, assuming technology does not change.

But a days digging or ploughing was as uneasy to a man a thousand years ago as it is now, tho' he could not then get so much silver for it: and a barrel of wheat, or beef, was then of the same use to support the human body, as it is now when it is exchanged for four times as much silver. Properly, the value of labour, grain, and cattle, are always pretty much the same, as they afford the same uses in life, where no new inventions of tillage, or, pasturage, cause a greater quantity in proportion to the demand. 'Tis the metal chiefly that has undergone the great change of value, since these metals have been in greater plenty, the value of the coin is altered tho' it keeps the old names.

(Hutcheson 2000 [1755]:II, 58)

This implies that the labour embodied in the production of cattle and grain is an invariable measure of value, provided technical progress does not increase the productivity of labour.

A few pages later Hutcheson equated “so many days labour” with “a fixed quantity of goods”:

The most invariable salary would be so many days labour, or a fixed quantity of goods produced by plain inartificial labourers, such goods as answer the ordinary purposes of life. Quantities of grain come nearest to such a standard.

(Hutcheson 2000 [1755]:II, 62–3)

Since Hutcheson restricted his examples to agriculture, he was a long way from stating that labour sacrifice is a universal measure of value. He pointed in the direction of Smith’s (1976 [1776]:50) claim that “Labour alone, therefore, never varying in its own value is alone the ultimate and real standard by which the value of all commodities can at all times and places be estimated and compared.”

The origin and regulation of value

How values are measured is conceptually distinct from two related questions: (1) the metaphysical question of what is the origin, cause, source or essence of value, and (2) the empirical question of what regulates or determines relative values in the marketplace. Hutcheson did not influence Smith much on either the origin or regulation of value. Smith began chapter five on the component parts of price with his famous example of the beaver and the deer, which was a pure labour theory of value. The labour necessary to produce things explains why they have value, what they are worth and the rule for exchanging them. Labour accounts for the origin, measure and regulation of value.

Hutcheson (1747:209) had a metaphysical theory of the origin of value based on utility: “The ground of all price must be some *fitness* in the things to yield some use or pleasure in life; without this, they can have no value.” He followed Pufendorf (1927 [1673]:70), who wrote that things have value “in so far as they bring men some pleasure or use.” This was in the Aristotelian tradition of the schools. The origin of value is metaphysical concept because it traces value to a first essence or a cause of causes. Adam Smith, in contrast to Hutcheson, was closer to the labour theory presented by John Locke (1988 [1690]:296), who thought it would “be but a very modest Computation to say, that of the *Products* of the Earth useful to the Life of Man 9/10 are the *effects of Labour*”

In his *Inquiry*, Hutcheson (2002 [1726]:284) did paraphrase the labour theory of Locke: “probably nine Tenths, at least, of things which are useful to Mankind, are owing to their *Labour and Industry*.” This was, however, in a discussion of property rights. In his chapter on the values of goods in his *System*, Hutcheson (2000 [1755]:II, 53) made it clear that he held a utility theory of the origin of value: “The natural ground of all value or price is some sort of use which goods afford in life; this is prerequisite to all estimation.”¹⁵

Hutcheson held different theories of the origin and regulation of value. His statement of the paradox of value makes it clear that value-in-use did not regulate value-in-exchange. His theory is similar to the one held by Pufendorf.

Some goods of the highest use, yet have either no price or but a small one. If there's such a plenty in nature that they are acquired almost without any Labour, they have no price; if they may be acquired by easy common labour, they are of small price. Such is the goodness of God to us, that the most useful and necessary things are generally very plentiful and easily acquired.

(Hutcheson 1747:210)

Thus, the market price of things and their usefulness are unrelated.

For civil society, Smith explained the regulation of value in terms of the market price and the natural price in both the *Wealth of Nations* and his *Glasgow Lectures*, LJ(A) and LJ(B). The market price is determined in a Marshallian temporary or market period, when supply comes from a previously produced stock of things. On any market day, the price of any commodity that is brought to market depends upon the higgling and bargaining of the buyers and sellers. The natural price corresponds to the Marshallian long-run competitive equilibrium price, which tends to equal the cost of production. All of the inputs necessary for production must be paid at least as much as they can earn elsewhere; otherwise, production will not be forthcoming. If the market price exceeds the natural price, production will tend to expand; when it falls below it, production declines.

Hutcheson, in contrast, did not go much beyond the analysis of Pufendorf (1927 [1673]:71), who explained prices in term of demand and the difficulty of acquiring or producing different articles.¹⁶ Hutcheson (2000 [1755]:II, 54) explained that “we shall find that the prices of goods depend on these two jointly, the *demand* on account of some use or other which many desire, and the *difficulty* of acquiring, or cultivating for human use.” Demand arose from any customary, fanciful or natural use of things. The difficulty of acquiring things included the toil of labour, the skill of the labourer, the customary dignity or station of the labourer,¹⁷ the scarcity of the materials and the bounty of the harvest. The price should include all the costs of production including the interest of money. He does not explain the dynamic adjustment of prices to their equilibrium values.

Interest and taxes

Hutcheson presented both an ethical and an economic theory of interest or, more generally, of incomes from property. His ethical theory was directed against legal rates of interest that may discourage industry and trade. England, France and many other countries had statutory interest rates. These statutes reflected the ancient doctrine of the Church and can be traced back to Aristotle, who condemned interest on the grounds that money is barren. Hutcheson's economic theory of interest followed the monetary theory of interest advanced by John Locke. He extended this theory to explain the natural course of interest rates as society progresses.

W.R.Scott (1966 [1900]:241) and J.A.Schumpeter (1954:332n) have called Hutcheson's ethical justification for interest a "fructification" theory. Following Grotius and Pufendorf, Hutcheson (2000 [1755]:II, 71) observed that "Some goods bear natural fruits or increase, as lands, stocks, herds, gardens. The grant of these fruits naturally deserves a price or rent." Other goods do not bear any fruit, but they may have cost as much labour or money as fruitful goods. It is only just, therefore, that their proprietor may charge a price for their use, as in the case of renting a house. Furthermore, Hutcheson continued,

If in any way of trade men can make far greater gains by help of a large stock of money, than they could have made without it, 'tis but just that he who supplies them with the money, the necessary means of this gain, should have for the use of it some share of the profit, equal at least to the profit he could have made by purchasing things naturally fruitful or yielding a rent. This shows the just foundation of interest upon money lent, tho' it be not naturally fruitful. Houses yield no fruits or increase, nor will some arable grounds yield any without great labour. Labour employed in managing money in trade, or manufactures, will make it as fruitful as any thing. Were interest prohibited, none would lend, except in charity; and many industrious hands, who are not objects of charity, would be excluded from large gains in a way very advantageous to the publick.

(Hutcheson 2000 [1755]:II, 71–2)

Collecting rents, making profits and charging interest can all be justified by the prosperity they bring to society. Without loans at interest, many enterprises could not exist. The Lockean right of landlords and capitalists to the fruits of their property is, thus, in harmony with the utilitarian principle of the public good. Hutcheson was not a doctrinaire advocate of laissez-faire. He did not advocate the abolition of statutory interest rates, but maintained that a legal rate of interest could prevent extortion, provided the legal rate was not far above the market rate.

The market rate of interest is regulated by the natural course of events, not by the statutes of the legislature. On this point, Hutcheson concurred with Locke (1991 [1692]:262), who had argued that the rate of interest depends on the quantity of money in circulation. Hutcheson expanded on this doctrine by contending that interest rates tend to be high in new countries with little money and low in wealthy countries with a great deal of money:

In a country newly settled, or but beginning to trade, where few hands and little money are employed that way, great profits are made by small sums: and as in such places more land-rents are purchased for any given sum than in countries flourishing in trade, and abounding with money; an high interest is reasonable, and no man would lend except upon an high interest.

(Hutcheson 2000 [1755]:II, 72)

Whereas

When many hands and much wealth are employed in trade, as men can be supported by smaller gains in proportion upon their large stocks, the profit made upon any given sum employed is smaller, and the interest the trader can afford must be less. As money grows plentier, and bears less interest in loans, more incline to purchases of lands than formerly; and this demand raises the rates of lands, so that smaller land-rents can be obtained for any sum.

(Hutcheson 2000 [1755]:II, 72)

The statement that profits fall “When many hands and much wealth are employed in a trade” is close to Smith’s (1976 [1776]:105) competition theory that profits fall “When the stocks of many rich merchants are turned into the same trade,” but then Hutcheson returned to Locke’s monetary theory of interest when he continued with “as money grows plentier.” Adam Smith also maintained that interest rates tend to be high in new colonies and low in wealthy countries, but he had a real theory of the rate of interest, not a monetary theory. For Smith, interest rates fell because capital accumulated, not because the quantity of money increased.

The brief discussion of taxation by Hutcheson foreshadowed the four maxims on taxation recommended by Smith. First, taxes should be convenient, as in the case of taxes on luxuries. Second, they should be easily collected without much expense. Third, they should be proportional to the wealth of the taxpayer. Smith thought taxes should be proportional to revenue rather than assets. A proportional tax on assets would probably be a highly progressive tax on income, because assets are less equally distributed than income in most societies. Smith’s fourth maxim was certainty, which may be why Hutcheson recommended a frequent census to ascertain the wealth of different people. On one point, Smith and Hutcheson were far apart. Like Hume after him, Hutcheson (2000 [1755]:II, 341) advocated “duties upon foreign products and manufactures, for such duties are often necessary to encourage industry at home, tho’ there were no publick expences.” Thus, Hutcheson did not endorse a key plank in the liberal platform of *laissez-faire*, even though he was a strong advocate of natural liberty.

Conclusion

The order and substance of the topics in the *Wealth of Nations*, especially in the early chapters, owes more to Francis Hutcheson than any other predecessor of Adam Smith. Most of the individual topics in the early chapters had been discussed by other authorities, going back to antiquity. Hutcheson explained how the division of labour greatly increases production due to improved dexterity, to not changing tasks and to inventions. These specialized labourers produce surpluses of their own commodities that are beyond their own needs. Self-love prompts them to exchange one surplus for another so that everyone could enjoy a great variety of different commodities. The inconvenience of barter leads to the invention of money as a medium of exchange. As a measure of value, money is variable over long periods of time. Hutcheson hinted that labour

sacrifice, especially in the production of grain, may be considered an invariable measure of value. This economic analysis of the hypothetical history of mankind is the conceptual foundation on which the *Wealth of Nations* rests.

The number of instances where Smith followed Hutcheson's theories and language are so close and so numerous that there can be little doubt that Hutcheson had a larger influence on him than any of his predecessors, though Smith derived some of his ideas from many other sources: Petty, Locke, Mandeville, Cantillon, Quesnay and Hume to mention some of the most prominent authorities. The doctrine that economic progress and prosperity is the unintended consequence of the pursuit of self-interest under a regime of natural liberty may be the most important contribution by Hutcheson to the liberal ideology of Adam Smith.

7

David Hume

Adam Smith's best friend

A brief life of David Hume

David Hume was the son of Joseph Home, the laird of the estate of Ninewells near Berwick and a member of the Faculty of Advocates in Edinburgh. David adopted the phonetic spelling of the family name. They spent summers at Ninewells and winters at their home in Edinburgh, where David was born on 26 April 1711 (OS). His father died in 1713, when David was still an infant. This left his mother to raise him and his older brother and sister, John and Katherine. Their modest income permitted both John and David to attend the University of Edinburgh, which then corresponded more to a high school specializing in the classics than to a modern university. David matriculated at age eleven and left without a degree at fourteen, which was common at the time. John, as the eldest, came into the estate, while David was expected to continue the family tradition in law, which he did not relish, though he ultimately proved himself a proficient legal scholar as his *History of England* attests. After reading law for a time, he became engrossed in the study of philosophy, ancient and modern; but his modest income did not permit him to devote himself entirely to this passion. He went to Bristol to try his hand at commerce, which did not prove a success. To reduce his expenses and still pursue his studies, he left Britain to live more frugally in rural France, first at Reims and then at La Flèche. After four years of immersion in philosophy, he had nearly completed *A Treatise of Human Nature*, his *magnus opus*. Still only 26 years old, he sailed for London to find a publisher.¹

The first two parts of the *Treatise*, on human understanding and on the passions, were published two years later in 1739. The third part, on morals, appeared in 1740. His purpose was to apply the experimental method of the natural sciences to the science of man.² This grand design met with a feeble response from the public, which disappointed Hume (1985 [1777]:xxxiv), who said his *Treatise* “fell dead-born from the press, without reaching such distinction, as even to excite a murmur among the zealots.” Despite his disappointment, he was soon at work on his *Essays*, which he revised and expanded over the course of his life. The first fifteen essays appeared in 1742; the last was added almost twenty years later. Since he was still in need of money, he accepted the position of tutor to the Marquis of Annandale in 1745 and later the post of diplomatic secretary to General St Clair in France and again in Vienna and Turin. These positions gave him time to revise his *Treatise* and publish it in a new form. He recast the first part as *An Enquiry concerning Human Understanding* and the third part as *An Enquiry concerning the Principles of Morals*.³ They appeared separately in 1748 and 1751, respectively. Hume

(1985 [1777]:xxxvi) believed that the *Principles of Morals* was “of all my writings, historical, philosophical, or literary, incomparably the best.”

Norman Kemp-Smith (1941) has argued that Francis Hutcheson was the most important influence on the moral philosophy of David Hume, because Hume accepted his argument that feeling comes before reason in making value judgements, whether of morality or of beauty. In a letter of 16 March 1740, before the third part of the *Treatise* on morals appeared, Hume (Greig 1932:I, 40) wrote to Hutcheson that, “since Morality, according to your Opinion as well as mine, is determin’d merely by Sentiment, it regards only human Nature & human Life.” In an early edition of his *Enquiry concerning Human Understanding*, in a passage later omitted, Hume remarked,

a late Philosopher has taught us, by the most convincing Arguments, that Morality is nothing in the abstract Nature of Things, but is entirely relative to the Sentiment or mental Taste of each particular Being; in the same Manner as the Distinctions of sweet and bitter, hot and cold, arise from the particular feeling of each Sense or Organ. Moral Perceptions therefore, ought not to be class’d with the Operations of the Understanding, but with the Tastes or Sentiments.

(Hume 1964 [1751]:IV, 10n)

A footnote identified the late philosopher as Mr Hutcheson, who, therefore, occupies an important step on the road from Locke and Berkeley to Hume.⁴

His essays on economics came out in 1752 in a book entitled *Political Discourses*, “The only work of mine,” Hume (1985 [1777]:xxxvi) remarked, “that was successful on the first publication.” It was reissued as the second part of *Essays: Moral, Political, and Literary*. Essays were a popular form of publication in Hume’s day. Samuel Johnson, for example, had found some success with “The Rambler,” not to mention the much earlier and highly successful *Essays, Moral, Economical, and Political* by Francis Bacon, originally published in 1597.

After failing to obtain a professorship at the University of Edinburgh and then at the University of Glasgow, he was elected Keeper of the Advocates’ Library in Edinburgh in 1752. This position did not pay a great deal, but it gave him access to a fine library of 30,000 volumes. During this period he wrote the *History of England, From the Invasion of Julius Caesar to the Revolution of 1688* in six volumes, published separately between 1754 and 1762. As a matter of historical method, he deliberately began with the last period, the reign of the last Stuarts, and then moved back to the early Stuarts, to the Tudors and finally to more ancient times, though the whole *History* was later reissued in chronological order. This method naturally led him to focus his attention on those issues and events in the past which would shape the nation in the future even though their consequences may not have been foreseen at the time. The book was a model of historical research and English prose as well as a commercial success. It went through several editions in Hume’s life and sold thousands of copies.

By this time, Hume was an internationally famous historian and philosopher, and nowhere more so than in France. Perhaps for this reason, he was appointed secretary to Lord Hertford, the new Ambassador to France, where he was greeted with adulation. In the absence of the Ambassador, he served as chargé d’affaires. In Paris, he met and

became friends with many distinguished men of letters: d'Alembert, Buffon, Diderot, Quesnay, Mirabeau, Helvetius, Turgot and Rousseau, whose friendship ended in bitterness. His company was sought by the ladies, especially the celebrated Marie-Charlotte-Hippolyte de Campet de Saujeon, Comtesse de Boufflers-Rouverel.

David Hume's best friend was Adam Smith, whose *Wealth of Nations* appeared shortly before Hume died. Smith, who was executor of his estate, wrote a glowing tribute to Hume after his death:

Upon the whole, I have always considered him, both in his lifetime and since his death, as approaching as nearly to the idea of a perfectly wise and virtuous man, as perhaps the nature of human frailty will permit.

(Smith, quoted in Hume 1985 [1777]:xlix)

As his executor, Smith withheld Hume's *Dialogues concerning Natural Religion* from publication, apparently on the grounds that it might damage the sale of his *History*; but in 1779 Hume's nephew arranged for its publication.

The origin of justice, property and the state

Hume based his theory of justice, property and the state on economic analysis. While the *Political Discourses* contain his best known essays on economics, his theory of justice also rests on economic principles, though this is often overlooked. The most fundamental principle of economics is the notion that goods are scarce relative to the wants of mankind. Scarcity makes economizing necessary. In his *Treatise of Human Nature*, Hume (1964 [1739–40]:II, 267–8) proposed that it is “*only from the selfishness and confin'd generosity of men, along with the scanty provision nature has made for his wants, that justice derives its origin*” In those circumstances where the affection between people is so warm that they regard their property to be held in common, as in the case of good friends and married couples, or where anything exists in sufficient abundance to satisfy everyone, as in the case of air, Hume (1964 [1739–40]:II, 267) wrote, “justice and injustice would be equally unknown among mankind.” The self-love of mankind and the scarcity of goods makes justice necessary.

To explain the origin of justice, he looked back to a metaphysical state of nature to discover the circumstances that led to the establishment of society. The idea of tracing human institutions back to a state of nature evidently had such a grip on the imaginations of seventeenth and eighteenth century philosophers that even David Hume could not escape from it, despite his manifesto to base knowledge on observation and experience. In that original state of things, Hume claimed that

Of all the animals, with which this globe is peopled, there is none towards whom nature seems, at first sight, to have exercis'd more cruelty than towards man, in the numberless wants and necessities, with which she has loaded him, and in the slender means, which she affords to the relieving these necessities.

(Hume 1964 [1739–40]:II, 258)

The wants of mankind are unlimited. For a person living in isolation, the necessities of food, clothing and shelter are not easily satisfied; but, fortunately, another necessity leads to the formation of communities. "This necessity," wrote Hume (1964 [1739–40]:II, 259), agreeing with Aristotle, "is no other than that natural appetite betwixt the sexes, which unites them together, and preserves their union, till a new tie takes place in their concern for their common offspring." Self-love and the passion between the sexes are among the psychological foundations of Hume's theory of human behaviour.⁵

Hume called the Hobbesian state of nature a philosophical fiction. A hypothetical world filled with war, violence and injustice is a fantasy. Those laws of justice which give stability to the possession of property are the most necessary condition for the establishment of society. The first rudiments of justice arose in the family. This is the simple and obvious origin of the rules of justice. "Every parent," wrote Hume (1964 [1739–40]:II, 265), "in order to preserve peace among his children, must establish it; and from these first rudiments of justice must every day be improv'd, as the society enlarges." The origin of justice explains the origin of property. Since property rights are essential to the well-being of society, Hume (1964 [1751]:IV, 179) added in his *Principles of Morals* "that public utility is the *sole* origin of justice."

Our sense of justice, observed Hume (1964 [1739–40]:II, 268), arises "*from artifice and human conventions*" Those conventions which govern property become increasingly complex as society progresses. Hume (1964 [1739–40]:II, 276n) found John Locke's labour theory of property too simplistic, namely, the theory that "everyone has a property in his own labour; and when he joins that labour to any thing, it gives him the property of the whole." He observed that the very idea of joining our labour to anything is merely a figure of speech. For that matter, the whole labour theory of value, which is based on the concept of the labour embodied in the production of a commodity, is really a metaphor that describes the work performed. Locke's theory was only one of several possibilities. In his *Treatise* and in his *Principles of Morals*, Hume (1964 [1739–40]:II, 276–82) presented several alternative theories of property rights that are similar to Roman law: (1) occupancy or the right of first possession, which may be impossible to ascertain after the passage of time; (2) prescription, where long possession conveys title to the owner; (3) accession, or the goods derived from our property, such as the fruit of our garden; and (4) succession or inheritance.⁶

After the possession of property is well-established, the translation of property by consent, that is, by mutual exchange, is also necessary, because, Hume (1964 [1739–40]:II, 288) observed, some people "are possess'd of a greater quantity of any species of goods than they have occasion for, and at the same time suffer the want of others." He did not, however, pursue the theory of exchange and had less of a theory of the regulation of value than even Hutcheson.

While Hume did not consider Locke's labour theory to be the sole justification of private property, he did endorse the moral principle that labourers are entitled to the fruits of their labour, because it is a species of the right of first occupancy or possession. If property arose from labouring, labour was entitled to it; however, if property came from inheritance, the heir was entitled to it. In his *Principles of Morals* Hume wrote:

Where a man bestows labour and industry upon any object, which before belonged to no body; as in cutting down and shaping a tree, in cultivating

a field, &c., the alterations which he produces, causes a relation between him and the object, and naturally engages us to annex it to him by the new relation of property.

(Hume 1964 [1751]:IV, 277n)

Again, in his *Enquiry concerning Human Understanding*, Hume (1964 [1748]: IV, 73) insisted that “The poorest artificer, who labours alone, expects at least the protection of the magistrate, to ensure him the enjoyment of the fruits of his labour.” He justified Locke’s principle on the utilitarian grounds that it promotes the public interest, not on the grounds that it is in harmony with the laws of nature. Hume (1964 [1752]:III, 296–7) repeated the argument yet again in “Of Commerce:” “Every person, if possible, ought to enjoy the fruits of his labour, in a full possession of all the necessities, and many of the conveniences of life.” This tends to promote equality, which he explained in a comment that suggests the principle of diminishing marginal utility: “such an equality is most suitable to human nature, and diminishes much less the *happiness* of the rich than it adds to the poor.” It gives encouragement to industry and augments the power of the state.

Hume invoked the principle of diminishing marginal utility again in his *Principles of Morals*. The nation is so wealthy that, in theory, every individual should be able to enjoy all the necessities and many of the conveniences of life, if all property were equally divided among the people. “It must also be confessed,” wrote Hume (1964 [1751]:IV, 188), “that, wherever we depart from this equality, we rob the poor of more satisfaction than we add to the rich.” What may be true in theory, however, may be impossible in practice. Therefore, Hume denounced the Levellers, the religious sect from the Civil War, as political fanatics. They had advocated a more equal, if not a perfectly equal, distribution of property. Hume thought that people were inherently unequal in ability and ambition, so that a regime of perfect equality would destroy the incentive to work and industry.

But historians, and even common sense, may inform us, that, however specious these ideas of *perfect* equality may seem, they are really, at bottom, *impracticable*; and were they not so, would be extremely *pernicious* to human society. Render possessions ever so equal, men’s different degrees of art, care, and industry will immediately break that equality. Or if you check these virtues, you reduce society to the most extreme indigence; and instead of preventing want and beggary in a few, render it unavoidable to the whole community.

(Hume 1964 [1751]:IV, 188)

While latter-day marginal utility theorists, like A.C.Pigou (1920:89), were confident that a policy which transferred income from the rich to the poor would increase the economic welfare of society, provided that it did not reduce the total output of society, Hume emphasized that it would inevitably reduce the total production and make everyone poorer. Furthermore, he argued that a policy of equality could only be maintained by a regime of tyranny.

The administration of justice is the principal advantage of civil government, though by no means the only advantage. Civil magistrates must be sufficiently secure in their

position that they can judge things in terms of the long-term interests of society instead of their own immediate self-interest. The good magistrate values the future of society more highly than someone obsessed with personal self-gratification. Where self-love rules, society will fall into an impoverished and violent Hobbesian state of nature, which Hume had rejected as unrealistic.

In his essay “Of the Original Contract,” Hume, the historian, agreed with the position of Cantillon and belittled the notion of Locke, who thought that governments were founded by the consent of the people in an original contract:

Almost all the governments, which exist at present, or of which there remains any record in story, have been founded originally, either on usurpation or conquest, or both, without any pretence of a fair consent, or voluntary subjection of the people.

(Hume 1964 [1752]:III, 447)

The head of an army or faction can rule over a much larger body of people by force or fraud. Even if there was an original contract, the agreement may have occurred so long ago that no one has any memory of it; and those terms may have changed many times in the course of history without any consent of the governed or their representatives.

Labour as the origin of value

Land and labour were the only factors of production in that original state of things which preceded the accumulation of capital. For this reason, Petty inferred that all things originally came from land and labour. Locke added that nine-tenths, if not 99 per cent, of the value of things is due to labour. Thus, he made labour the principal cause or origin of value. Locke may well have influenced Hume, who proclaimed a labour theory of the origin of commodities in his essay on “The Stoic.”⁷

Every thing is sold to skill and labour; and where nature furnishes the materials, they are still rude and unfinished, till industry, ever active and intelligent, refines them from their brute state, and fits them for human use and convenience.

(Hume 1964 [1752]:III, 203–4)

Labour is, therefore, the active agent that transforms raw materials into things fit for human use. Land is simply a free gift of nature before it is first occupied or appropriated. Hume apparently influenced Smith, who stated in the first sentence of the *Wealth of Nations* that labour is the source of all commodities. In his essay “Of Commerce,” Hume (1964 [1752]:III, 293) wrote that “Every thing in the world is purchased by labour.” In the *Wealth of Nations*, Smith (1976 [1776]:48) appears to paraphrase Hume where he wrote, “Labour was the first price, the original purchase-money that was paid for all things.” In a primitive state of nature, Smith gave a pure labour theory of value with his example of the beaver and the deer. In that state of things, labour is the origin, measure

and regulator of value. Hume did not carry his labour theory so far, but he left Smith with the concept that labour is the origin of value.

If labour is the original source of all commodities, then capital goods and all other commodities that exist today are the product of “past labour,” as Petty put it. In his essay “Of Refinement in the Arts,” Hume (1964 [1752]:III, 302) accepted the doctrine that commodities “are a kind of *storehouse* of labour.” Instead of turning this concept into a labour theory of exchange value, however, he used it to support his preference for manufacturing over agriculture. In his essay “Of Commerce,” Hume (1964 [1752]: III, 294) repeated the doctrine that commodities are canned, embodied, crystalized or stored up labour: “Manufacturers encrease the power of the state only as they store up so much labour.” Again,

A public granary of corn, a storehouse of cloth, a magazine of arms; all these must be allowed real riches and strength in any state. Trade and industry are really nothing but a stock of labour, which, in times of peace and tranquility, is employed for the ease and satisfaction of individuals; but in the exigencies of state, may, in part, be turned to public advantage.

(Hume 1964 [1752]:III, 294)

In a similar fashion, Petty and Cantillon held the view that durable goods are superior to perishable goods. The physiocrats claimed that agricultural labourers are the productive class, because they produce a surplus above their subsistence, whereas labourers employed in manufacturing and trade are the sterile class, because they merely transform raw materials into finished goods. In contrast, Hume (1964 [1752]:III, 294) claimed that in agricultural societies “All the labour is there bestowed upon necessaries.”⁸ These necessities are soon consumed, whereas manufacturing societies produce a surplus that accumulates in the form of capital goods. Smith would call manufacturers productive labourers, because their efforts survive the period of production.

Hume favoured industry, commerce and foreign trade, because they increased “the power of the state, as well as the riches and happiness of the subject.” Their products consist of a stock of labour.

Foreign trade, by its imports, furnishes materials for new manufactures; and by its exports, it produces labour in particular commodities, which could not be consumed at home.... And the public is also a gainer, while a greater stock of labour is, by this means, stored up against any public exigency; that is, a greater number of laborious men are maintained, who may be diverted to the public service, without robbing any one of the necessities, or even the chief conveniencies of life.

(Hume 1964 [1752]:III, 295)

Thus, commodities are “nothing but a stock of labour,” because manufacturing “produces labour in particular commodities.” This idea is repeated, maintained or extended by Adam Smith, David Ricardo and Karl Marx. It is essential to the labour theory of value.

Prices, incomes and taxes

While Hume presented a labour theory of the origin of value, he did not have a labour theory of the regulation of value, that is, a theory of value in exchange or market prices. He typically explained market prices in terms of supply and demand, though he recognized that prices have three component parts: rent, wages, and profit or interest. These factor prices correspond to three factors of production: land, labour and capital, which he called stock. Factor prices vary from country to country and from time to time as population grows and capital accumulates.

In his *Treatise*, Hume began his hypothetical history in the earliest ages of mankind, when a solitary labourer would have lived in extreme poverty. Due to the division of labour, society supplied mankind abundantly with the necessities of life. Even though wants multiply as society progresses, Hume, (1964 [1739–40]:II, 259) wrote, man is “in every respect more satisfied and happy, than ’tis possible for him, in his savage and solitary condition.”

When every individual person labours a-part, and only for himself, his force is too small to execute any considerable work; his labour being employ’d in supplying all his different necessities, he never attains a perfection in any particular art; and as his force and success are not at all times equal, the least failure in either of these particulars must be attended with inevitable ruin and misery. Society provides a remedy for these three inconveniences. By the conjunction of forces, our power is augmented: By the partition of employments, our ability encreases: And by mutual succour we are less expos’d to fortune and accidents. ’Tis by this additional *force, ability, and security*, that society becomes advantageous.

(Hume 1964 [1739–40]:II, 259)

The partition of employments is simply another name for the division of labour. Hume did not dwell on the concept, perhaps because it was well-known to him through the recent works of Hutcheson and Mandeville as well as the ancient works of Plato, Aristotle and Cicero. As workers specialize in particular trades, they perfect their skills and increase their abilities. They can, therefore, produce a greater quantity of commodities than if they all worked separately and tried to produce their own subsistence by themselves. Unlike Adam Smith, who treated labourers as homogeneous before they specialize in an occupation, Hume (1964 [1739–40]:II, 283) followed Plato and argued that different men “are by nature fitted for different employments, and attain to greater perfection in any one, when they confine themselves to it alone.” Land and labour are, therefore, both heterogenous for Hume.

Population grows, as society progresses. The necessity of food and the passion between the sexes, with which Hume began his theory of justice, correspond to the two postulata in *An Essay on the Principle of Population* by T.R.Malthus:

I think I may fairly make two postulata.

First, that food is necessary to the existence of man.

Secondly, that the passion between the sexes is necessary, and will remain in nearly its present state.

(Malthus 1986 [1798]:I, 8)

While Malthus does not cite the *Treatise*, he does cite Hume's *Essays*. In the "Preface" to the 1803 edition, Malthus acknowledged the influence of Hume on the ideas in his *Principle of Population*, along with that of Robert Wallace, Adam Smith and Dr Price. In his essay "Of the Populousness of Ancient Nations," Hume captures the essence of the Malthusian principle of population.

Where each man had his little house and field to himself, and each county had its capital, free and independent; what a happy situation of mankind! How favourable to industry and agriculture; to marriage and propagation! The prolific virtue of men, were it to act in its full extent, without that restraint which poverty and necessity imposes on it, would double the number every generation.

(Hume 1964 [1752]:III, 398)

According to Malthus, food is the ultimate check to the growth of population. If food were not scarce, if it were available in unlimited quantities, population would grow at a geometrical rate. Hume wrote his essay to criticize Montesquieu's claim that the ancient world was more populous than modern Europe. His essay focused on the habits, customs, commerce and government of different nations to show that the modern world is more populous than the ancient.

Despite his embryonic theory of population, Hume did not think that wages tend to fall to subsistence. In his analysis of a tax on those commodities which are consumed by the common people, he considered all the plausible options, which was typical of his economic analysis. In a passage reminiscent of Petty's reasoning, he thought that such a tax could have three possible consequences:

either that the poor must retrench something from their way of living, or raise their wages, so as to make the burden of the tax fall entirely upon the rich. But there is a third consequence, which often follows upon taxes, namely, that the poor encrease their industry, perform more work, and live as well as before, without demanding more for their labour. Where taxes are moderate, are laid on gradually, and affect not the necessities of life, this consequence naturally follows; and it is certain, that such difficulties often serve to excite the industry of a people, and render them more opulent and laborious, than others, who enjoy the greatest advantages.

(Hume 1964 [1752]:III, 356)

If workers could reduce their consumption, wages could not be at subsistence, though Hume opposed a tax on necessities. The best tax was on luxuries, because it was, to some extent, a voluntary tax.

Hume's theory of rent is an extension of Locke's proposition that rent arises from the unequal appropriation of land. In the early and rude days of society, when population has

just grown beyond the savage state, Hume maintained that a great inequality of property would exist, so that

while some possess large tracts of land, others are confined within narrow limits, and some are entirely without any landed property. Those who possess more land than they can labour, employ those who possess none, and agree to receive a determinate part of the product.

(Hume 1964 [1752]:III, 322)

This is the origin of rent. The inequality of property originally gave rise to the inequality of the social classes: wealthy landlords and propertyless tenants. "The latter," wrote Hume (1964 [1752]:III, 306), "are necessarily dependent, and fitted for slavery and subjection; especially where they possess no riches, and are not valued for their knowledge in agriculture; as must always be the case where the arts are neglected." In this uncultivated age, Hume (1964 [1752]:III, 317) thought the rent of land could not be very great, because "the landlord himself, dwelling in the neighbourhood, is content to receive his rent in the commodities raised by the farmer."

As society progresses and production increases, consumer tastes become more refined. In this situation, Hume argued that people

live not always at home, nor are content with what can be raised in their neighbourhood, there is more exchange and commerce of all kinds, and more money enters into that exchange. The tradesmen will not be paid in corn; because they want something more than barely to eat. The farmer goes beyond his own parish for the commodities he purchases, and cannot always carry his commodities to the merchant who supplies him. The landlord lives in the capital, or in a foreign country; and demands his rent in gold and silver, which can easily be transported to him.

(Hume 1964 [1752]:III, 317)

In this state of society, the rent of land must evidently be much greater than it was in earlier ages, where it would not bear the freight much beyond the neighbourhood. This theory resembles the regional development of society from village to market town to capital city presented by Cantillon. Hume's theory of the progress of rent is a good example of what Rotwein (Hume 1955:cx) called the analysis of "the historical phases of economic activity."⁹

While Hume (1964 [1752]:III, 359) accepted the idea that the distribution of land was originally very unequal, as Locke had claimed, though for a different reason, he emphatically denied the assertion by Locke, and later by the physiocrats that "all taxes fall ultimately upon land." "I cannot readily imagine," Hume continued, "why the landed gentleman should be the victim of the whole, and should not be able to defend himself, as well as others are." Everyone will try to shift a tax on to someone else.

Hume also rejected Locke's theory that the rate of interest had declined over the previous two centuries because of the large quantities of gold and silver that had been imported from America. He thought that the increase in the quantity of money would only raise prices and that the decline in interest was due to the decline in profits. Profits

and interest moved together. In his essay “Of Interest,” Hume explained that the decline in profits was due to the accumulation of stock:

when commerce has become extensive, and employs large stocks, there must arise rivalships among the merchants, which diminish the profits of trade, at the same time that they encrease the trade itself. The low profits of merchandise induce the merchants to accept more willingly of a low interest.

(Hume 1964 [1752]:III, 327)

“Rivalships among the merchants” is similar to Hutcheson’s (2000 [1755]: II, 72) argument that profits depend on the number of competitors. Smith presented a similar idea, which may have come from Hutcheson or Hume, or from both Hutcheson and Hume. The idea that an increase in competition or rivalry would depress profits is contrary to the ideas of both the classical and neoclassical followers of Smith. Ricardo and Marx, for example, gave wholly different theories of the falling rate of profit. However, A.A.Cournot (1963 [1838]) gave a solid theoretical justification for it. Cournot began his price theory with monopoly, moved to duopoly and finally presented the competitive case: as competition increases, profits fall. What is true for one industry could be extended to the whole economy.

High or low interest arises from the same circumstances that produce high or low profits, to wit, riches or poverty of the nation due to the thriving or depressed state of commerce and trade.¹⁰

High interest arises from *three* circumstances: A great demand for borrowing; little riches to supply that demand; and great profits arising from commerce: And these circumstances are a clear proof of the small advance of commerce and industry, not of the scarcity of gold and silver. Low interest, on the other hand, proceeds from the three opposite circumstances: A small demand for borrowing; great riches to supply that demand; and small profits arising from commerce: And these circumstances are all connected together, and proceed from the encrease of industry and commerce, not of gold and silver.

(Hume 1964 [1752]:III, 322)

The same forces which cause the rent of land to rise cause the profits of stock to fall. In the early and uncultivated state of society, where peasants lack skill and merchants have little stock, the rent of land is low and the profits of stock high. “But,” wrote Hume (1964 [1752]:III, 306), “where luxury nourishes commerce and industry, the peasants, by a proper cultivation of the land, become rich and independent; while the tradesmen and merchants acquire a share of property.” In this advanced state of society, land yields high rents while commerce and industry earn low profits. Adam Smith also concluded that profits fall and rents rise as society progresses.

Smith (1976 [1776]:353–4) endorsed Hume’s criticism of Mr Locke as well as Mr Law and Mr Montesquieu, among others, who had argued that an increase in the quantity of money caused a decrease in the rate of interest: “This notion, which at first sight seems

so plausible, has been so fully exposed by Mr Hume, that it is, perhaps, unnecessary to say anything more about it.” He then went on to restate Hume’s argument that an increase in the quantity of money would inflate all prices, so that the nominal value of both interest payments and capital assets would rise together. The ratio of interest payments to the value of capital stock would, therefore, remain in the same proportion, which suggests that money is neutral.

Foreign trade and laissez-faire

Hume’s most famous economic doctrines are his statement of the quantity theory of money and the related price-specie-flow mechanism.¹¹ These doctrines allowed him to demonstrate that the mercantilist policy of running a favourable balance of trade to obtain gold was self-defeating. This policy, sometimes called bullionism, was Smith’s narrow definition of mercantilism. He claimed that it confused accumulating bullion with enriching the nation.

The quantity theory of money has an ancient pedigree. It was well-known long before the time of David Hume (1964 [1752]:III, 316), who thought that “it seems a maxim almost self-evident, that the prices of every thing depend on the proportion between commodities and money, and that any considerable alteration on either has the same effect, either of heightening or lowering the price.” Hume connected the change in the quantity of money and the corresponding change in the price level to the balance of trade.

Suppose four-fifths of all the money in GREAT BRITAIN to be annihilated in one night, and the nation reduced to the same condition, with regard to specie, as in the reigns of the HARRIES and EDWARDS, what would be the consequence? Must not the price of all labour and commodities sink in proportion, and everything be sold as cheap as they were in those ages? What nation could then dispute with us in any foreign market, or pretend to navigate or to sell manufactures at the same price, which to us would afford sufficient profit? In how little time, therefore, must this bring back the money which we had lost, and raise us to the level of all the neighboring nations? Where, after we have arrived, we immediately lose the advantage of the cheapness of labour and commodities; and the farther flowing in of money is stopped by our fulness and repletion.

(Hume 1964 [1752]:III, 333)

Hume did not explain how the money was annihilated. When the quantity money increases on the same supposition, it is sometimes called B-52 money or helicopter money. Money appears overnight without any explanation of how it got into the system: by gold mines? by trade? by the banking system? by the government printing press? John Locke made the same supposition, for which he was criticized by Cantillon. Cantillon wanted to know the process by which money bid prices up or down.

The price-specie-flow theory was a powerful criticism of mercantilist policies, because it showed that no sooner would a policy that restricts imports and encourages

exports lead to a favourable balance of trade than the net inflow of gold and silver would increase the quantity of money and raise domestic prices. As domestic prices rose, domestic goods would become more expensive for foreigners to buy, while foreign wares would become cheaper to import. Thus, imports would tend to exceed exports and reverse the flow of gold and silver. Hume may have derived the price-specie-flow theory from Cantillon, who extended Locke's propositions, as previously discussed. Adam Smith went on to demonstrate that restrictive policies reduce the wealth of the nation, so that the best policy was free trade.

Most of the time, Hume was an advocate of laissez-faire and an opponent of mercantilism, where mercantilism here refers the broad system of preference and restraint described by Adam Smith.¹² Mercantilism does not fairly describe the views of any particular person or group of people. It typically signifies a system of government policy based on commercial favouritism, grants of monopoly privilege, restraints on trade, government subsidies, discriminatory taxes and similar forms of state intervention in the marketplace. Hume (1985 [1777]:324) was not a fully converted free trader, however, since he still advocated some protectionist measures, such as "a tax on German linen" to encourage home manufactures or "a tax on brandy" to increase the sale of rum and support the southern colonies.

Hume (1985 [1777]) presented several positive arguments in favour of free trade in his essay "Of the Jealousy of Trade." He thought it was wrong to view foreign trade as an exchange in which one party gained and the other party lost. Trade was not a zero sum game, as Locke apparently thought. Both parties gain from trade. If Germany, France and Spain grew more prosperous, they would buy more from Great Britain. The prosperity of one would enhance the prosperity of the others. If all countries were poor and miserable, no country would have a market for its wares. Furthermore, he argued that most of the improvements in British industry had been introduced from abroad. Britain imitated the inventions of its trading partners. Finally, it is also obvious that no country could have an advantage in the production of all commodities because of the diversity of geniuses, climates and soils that different countries possess.

In his *History of England*, he severely criticized a long series of mercantilist policies. He cited laws that prohibited the export of money or horses, that fixed the prices of bows and arrows, of woollen cloth and hats, that regulated the wages of masons, bricklayers and tilers and that gave exclusive privileges to corporations, all of which Hume (1983 [1778]:III, 77–9) thought depressed industry. Elizabeth, who did not have sufficient revenues to pay her servants and courtiers, resorted to the expedient of granting them patents of monopoly, which they then sold to others, who charged what the traffic would bear. A partial list of monopolized commodities includes the following:

Currants, salt, iron, powder, cards, calf-skins, fells, pouldavies, ox-shin-bones, train oil, lists of cloth, pot-ashes, anniseeds, vinegar, seal-coals, steel, aquavita, brushes, pots, bottles, saltpeter, lead, accidents, oil, calamine stone, oil of blubber, glasses, paper, starch, tin, sulphur, new drapery, dried pilchards, transportation of Iron ordnance, of beer, of horn, of leather, importation of Spanish wool, of Irish yarn.

(Hume 1983 [1778]:IV, 344)

While James I called in or annulled many of these patents, he granted a monopoly of nearly all the foreign trade of England to exclusive companies. At one point, as Hume (1983 [1778]:V, 20) reported, “the whole trade of London was confined to about 200 citizens, who were easily enabled, by combining among themselves, to fix whatever price they pleased both to the exports and imports of the nation.” Parliament did not abolish these exclusive companies, sometimes for centuries; but, beginning with the commonwealth, people tended to ignore their prerogatives, so that their monopoly powers eroded. In this way, Hume (1983 [1778]:VI, 148) observed, “commerce increased by the encrease of liberty.” He thought that a prosperous class of merchants and peasants was the best possible defence against political tyranny. Adam Smith (1976 [1776]:412) claimed that David Hume was the only writer who had noticed that “commerce and manufactures gradually introduced order and good government, and with them, the liberty and security of individuals.”

Conclusion

Adam Smith (1976 [1776]:790) called David Hume “by far the most illustrious philosopher and historian of the present age” and praised him for advancing the cause of liberty. He connected economic liberalism with political liberalism and moral philosophy with political economy. Politics, morals, history and economics appear in all his major works: his *Treatise* and *Enquiries*, the *Essays* and his long *History*. Smith continued the historical point of view in his account of economic progress from earliest times to the modern day. Both Hume and Smith described the Malthusian population principle, the falling rate of profits and rising rents. Hume’s writing on value theory was light, but the impact was heavy. He gave Smith the doctrine that commodities are a storehouse of labour because labour is the active agent that produces all commodities. This is an essential proposition of the labour theory of value. It points to why the labour necessary to produce Smith’s beaver and his deer regulate their value in exchange.

8

Adam Smith and the labour theory of value

A brief life of Adam Smith

Adam Smith (1723–90) was born in the burgh of Kirkcaldy across the Firth of Forth from Edinburgh.¹ His mother, Margaret Douglas, was the daughter of the laird of Strathenny. His father, also named Adam Smith, died before his birth. He had been Clerk to the Courts Martial and Councils of War in Scotland and Controller of His Majesty's Customs in Kirkcaldy. These were responsible positions with a steady income, which allowed him to provide for his family. An often cited incident occurred when, at the age of three, Adam was kidnapped by vagrants or tinkers on a visit to Strathenny Castle. Stories vary about how his uncle later rescued him. In his boyhood, he attended the Kirkcaldy Burgh School and lived in town with his mother.

In 1737, at the age of fourteen, he entered the University of Glasgow, where he received his undergraduate education. The university was an autonomous corporation with a modern and independent spirit, unlike many other universities which had kept to the traditions of the teaching monasteries. Smith studied moral philosophy under the never-to-be-forgotten Francis Hutcheson, whose ideas on economics, ethics and aesthetics influenced David Hume and inspired Smith. Robert Simson, the translator of Euclid's *Elements*, taught mathematics. Smith was particularly interested in mathematics and natural philosophy, which is called science today.

Upon graduation, Smith was awarded a Snell Exhibition, a sort of scholarship, to Balliol College, Oxford, but he did not enjoy his stay there. He spent much of his time studying languages, literature and science, to which his early essays on Johnson's *Dictionary*, on Italian poetry and on the *History of Astronomy* bear witness.² Smith's mastery of the English language no doubted contributed to the success of the *Wealth of Nations*. While the Snell Exhibition obliged him to take holy orders, the courts declined to enforce such contracts, so Smith did not enter the clergy. The unhappy state of education at Oxford may lie behind the statement by Smith (1976 [1776]:773) that "In England, it becomes every day more and more the custom to send young people to travel in foreign countries immediately upon their leaving school, and without sending them to any university."

In 1745, the Scottish highlanders rebelled against George II in order to restore the Stuart line to the throne. The faculty at Balliol tended to sympathize with the Jacobite cause, though their Scottish students did not. After invading England and then retreating back to Scotland, the Jacobite rebellion ended in April of 1746 at Culloden Field. The intellectual, theological and political climate at Oxford did not appeal to Smith which may be one reason he quit Oxford and returned to Edinburgh in late 1746, where he sought suitable employment.

During his period in Edinburgh, he earned some money and gained a reputation for learning by delivering public lectures. We know something of these presentations from his *Lectures of Rhetoric and Belles Lettres* (Smith 1983). It was about this time that he first met David Hume, who would become his best friend. In 1751, the University of Glasgow appointed him professor of logic and, in the next year, professor of moral philosophy, the chair earlier held by Hutcheson. To supplement his income, Adam Smith boarded students in his residence at the university, one of whom was the Hon. Thomas Petty Fitzmaurice, the great grandson of Sir William Petty and the younger brother of the second Earl Shelburne, later Prime Minister. Smith reported on the progress of Thomas to his older brother, who was also named William Petty, by stating

Nothing, I have often imagined, would give more pleasure to Sir William Petty, your Lordship's ever honoured ancestor, than to see his representative pursuing a Plan so suitable to his own ideas which are generally equally wise and public spirited.

(Smith 1977:32)

Smith was, therefore, familiar with the ideas of Sir William Petty, some of which found their way into the *Wealth of Nations*, though they may also have come by way of Locke or Cantillon.

In 1759, Smith published *The Theory of Moral Sentiments*. It analysed those passions which govern how people judge right and wrong. While we cannot suffer the pain or enjoy the pleasure of other people, Smith argued, we have a natural sympathetic response to their circumstance by imagining ourselves in their place. This moral sympathy is the basis of our moral judgements. The *Moral Sentiments* earned him the approbation of the public. At the end of the book, Smith announced the plan of his life's work.

I shall in another discourse endeavour to give an account of the general principles of law and government, and of the different revolutions they have undergone in the different ages and periods of society, not only in what concerns justice, but in what concerns police, revenue, and arms, and whatever else is the object of law.

(Smith 1976 [1759]:342)

This course of study is evident in the notes from two sets of lectures taken by students. Smith (1978) delivered them in the academic years of 1762–63 and 1763–64, referred to as LJ(A) and LJ(B), respectively. While they cover the wide range of subjects, the core is political and economic theory. Smith (1976 [1759]:341–2) criticized Plato, Aristotle, Cicero and the ancient moralists in general for failing to develop the principles on which to base the positive laws of all nations, but praised Hugo Grotius, whose “laws of war and peace, with all its imperfections, is perhaps at this day the most complete work that has yet been given upon this subject.” In his *Lectures*, LJ(B), Smith (1978:397) ranked Hobbes second to Grotius. While the *Wealth of Nations* contains some material on jurisprudence, its main focus is economics. He did not complete his life's plan of work.

The fame of Adam Smith as a teacher and philosopher attracted the attention of Charles Townshend, the Chancellor of the Exchequer, who was looking for a tutor to

escort his stepson, the Duke of Buccleuch, on a continental tour. The terms were generous, a pension of £300 a year for life. In addition, Smith no doubt wanted to meet the leading intellectuals of France. The tour began with a stop in Paris where David Hume served at the British embassy. After a long stay in Toulouse, Smith accompanied the Duke and his younger brother, who had joined them, to Geneva, where Smith met Voltaire. They then travelled on to Paris. Hume recommended Smith to the company of Quesnay, Turgot, Morellet, Necker, D'Alembert and the society of the French enlightenment.

Smith (1976 [1776]:674) sympathized with Quesnay's idea that a "regimen of perfect liberty and perfect justice" tends to promote the health of the human body as well as the political body, but he thought that Quesnay had not considered how the natural effort of everyone to better their own condition "is a principle of preservation capable of preventing and correcting, in many respects, the bad effects of political economy, in some degree, both partial and oppressive." Smith emphasized how the pursuit of self-interest under the rule of competition provided a self-righting mechanism for the economy. He certainly did not accept the characteristic physiocratic doctrine that farmers are productive and manufacturers unproductive labourers. Smith (1976 [1776]:678) concluded: "This system, however, with all its imperfections is, perhaps, the nearest approximation to the truth that has yet been published upon the subject of political oeconomy." At the request of Smith, Dr Quesnay attended on the Duke of Buccleuch when he fell ill. On his recovery, Smith and the Duke returned to England.

After spending a few months in London, Smith went back to Kirkcaldy where he spent most of the next decade writing the *Wealth of Nations*. It appeared in 1776 and immediately received the acclaim of the public. This led to Smith's being appointed Commissioner of Customs for Scotland. As fate would have it, instead of abolishing tariffs, he earned a substantial income collecting them. He spent the rest of his days in Scotland performing the duties of his office, revising his books and, near the end of his life, serving as Rector of the University of Glasgow. He died in 1790.

Labour as the origin of value

The traditional theory of value from Aristotle through Samuel von Pufendorf was the idea that things have value because of their usefulness to mankind. Even John Locke (1988 [1690]:294), who explained that most of the value of commodities originated from the current labour and the past labour necessary for their production, added that "the intrinsick value of things depends only on their usefulness to the Life of Man."³ He distinguished between the intrinsic value and the marketable value of things. The market price of any thing, Locke (1991 [1692]:254) thought, depended on "its quantity in proportion to its vent, for this alone regulates the Price." In a similar vein, Ferdinando Galiani (1924 [1751]: 290) argued that labour "is the sole source of value," but he added that prices are "regulated by the same principles of scarcity and utility." Thus, for Locke and for Galiani, the original source of value was conceptually distinct from what regulated market prices: labour was the origin of value, whereas supply and demand regulated market prices. Adam Smith adopted the same disjointed philosophy of value.⁴

In his paradox of value,⁵ Adam Smith repeated two concepts of values found in Aristotle: value in use and value in exchange. The owner of a shoe, for example, could either wear it, which was its value in use, or sell it, which was its value in exchange. Smith defined the word value in the same two senses.

The word VALUE, it is to be observed, has two different meanings, and sometimes expresses the utility of some particular object, and sometimes the power of purchasing other goods which the possession of that object conveys. The one may be called “value in use;” the other, “value in exchange.” The things which have the greatest value in use have frequently little or no value in exchange; and on the contrary, those which have the greatest value in exchange have frequently little or no value in use. Nothing is more useful than water: but it will purchase scarce any thing; scarce any thing can be had in exchange for it. A diamond, on the contrary, has scarce any value in use; but a very great quantity of other goods may frequently be had in exchange for it.

(Smith 1976 [1776]:44–5)

Smith’s opinion of the usefulness of diamonds appears rather conventional and judgmental. Value in use is an individual, introspective and subjective matter, which lies behind exchange; value in exchange is an objective and social phenomenon, which is observed in the market. The paradox of value illustrates that use value is essential to exchange value, but does not regulate it. David Ricardo and Karl Marx similarly claimed that utility was essential to value, but that it did not determine prices. The air is useful, for example, but free. Smith did not connect utility with price, because he did not have a utility theory of consumer demand.⁶

Thomas Hobbes changed the traditional perspective of value theory. He introduced a production theory of value, which replaced the Aristotelian theory based on demand or utility, at least in the English speaking world.⁷ Hobbes (1968 [1651]:295) claimed that land and labour were the original sources of all commodities. Sir William Petty, his junior colleague, turned this idea into a theory of value. He claimed that land and labour originally produced all commodities and that land and labour could measure the value of them. Labour was the active agent of production, while land was passive. For Petty (1963 [1665]:110), capital goods were merely “past labour.” John Locke (1988 [1690]:296) used this theory to support his theory of property rights. He thought that labour accounted for 90 per cent, if not 99 per cent, of the value of most commodities, land being almost worthless. Richard Cantillon refined Petty’s theory. David Hume (1964 [1752]:III, 302) reformed it, when he neglected land and called commodities “a kind of *storehouse* of labour.”

Adam Smith began the *Wealth of Nations* with the bold assertion that national wealth is due to labour. He established labour as the philosophical foundation of classical economics. The first sentence of the book states that

The annual labour of every nation is the fund which originally supplies it with all the necessities and conveniencies of life which it annually

consumes, and which consist always either in the immediate produce of that labour, or in what is purchased with that produce from other nations.
(Smith 1976 [1776]:10)

This passage contains two principles which apply throughout the *Wealth of Nations*: that labour produces all commodities and that wealth consists of consumer goods.

First, it claims that the annual labour of the nation produces “all its necessities and conveniencies.” This applies to “every nation,” both primitive societies where people live in a state of nature, and civil societies where land is appropriated and capital is accumulated. Since international trade occurs only after the accumulation of capital and the division of labour, the first sentence must clearly apply to civil society.

The omission of capital is striking, especially in such a celebrated book on capitalism. Apart from “the spontaneous Products of Nature,” which Locke (1988 [1690]:295) also mentioned, Smith treated land as productive only when labour worked it or gathered things from it. Labour produced commodities from the physical things found in nature. Smith used the expression “produce of labour” to refer to aggregate output of society dozens of times,⁸ though sometimes he referred to “the produce of land and labour.” In a passage reminiscent of Locke’s state of nature, Smith wrote:

The wood of the forest, the grass of the field, and all the natural fruits of the earth, which, when land was in common, cost the labourer only the trouble of gathering them, come, even to him, to have an addition price fixed upon them. He must give up to the landlord what his labour either collects or produces.

(Smith 1976 [1776]:67)

The spontaneous produce of the land would spoil in the field without the work of the labourer. The rent of the landlord comes from the produce of labour.

Second, his first sentence defines the wealth of the nation in terms of consumption. By wealth he meant the economic welfare of the nation. Elsewhere Smith (1976 [1776]:660) wrote: “Consumption is the sole end and purpose of all production.” These first principles were not a radical departure from received theory. The first passage in Cantillon’s *Essai* carried the same message, except that Cantillon, following Petty, attributed the production of consumer goods to both land and labour. Smith dropped land as a source of value.⁹

In Book I, Smith taught that the division of labour directly increases the wealth of nations for three reasons:

first, to the increase of dexterity in every particular workman; secondly, to the saving of the time which is commonly lost in passing from one species of work to another; and lastly, to the invention of a great number of machines which facilitate and abridge labour, and enable one man to do the work of many.

(Smith 1976 [1776]:17)

Plato, Aristotle, Lucretius, Cicero, Grotius, Pufendorf, Petty, Mandeville, Hutcheson, Hume, among authorities whom Smith cited in one place or another, had previously given one, another or all three of these reasons. The theory of society inherited by Smith began in a primitive state where people lived in poverty on the spontaneous produce of the earth. The division of labour explains how civil society arose from a state of nature.¹⁰ This was the received tradition in economics.

What about capital? At the end of the chapter on the division of labour, Smith listed the labour immediately necessary to produce the coarse woollen coat of a day labourer.

The shepherd, the sorter of the wool, the wool-comber or carder, the dyer, the scribbler, the spinner, the weaver, the fuller, the dresser, with many others, must all join their different arts in order to complete even this homely production.

(Smith 1976 [1776]:22)

In addition, he included the labour previously needed to produce the capital goods used to make the woollen coat: “What a variety of labour too is necessary in order to produce the tools of the meanest of those workmen!” He then listed the labour needed to make the shears of the shepherd.

The miner, the builder of the furnace for smelting the ore, the feller of the timber, the burner of the charcoal to be made use of in the smelting-house, the brick-maker, the brick-layer, the work-men who attend the furnace, the mill-wright, the forger, the smith, must all of them join their different arts in order to produce them.

(Smith 1976 [1776]:23)

This long passage resembles the account by John Locke of all the labour necessary to produce the bread we eat. Both mentioned, for example, felling timber, dying cloth, making ropes, building ships and working iron. Labour produces commodities, including capital goods, out of the things found in nature.

In Book II, Smith taught that capital indirectly extends the division of labour, but capital goods are simply the product of so much labour, as he made clear in his much disputed chapter on productive and unproductive labour.¹¹ The analytic significance of productive labour in the *Wealth of Nations* arises from the fact that the stock of capital is a collection of physical things. The title of the chapter reveals his purpose: “Of the Accumulation of Capital, or of productive and unproductive Labour.” Productive labour adds value to physical things that survive the period of production, whereas unproductive labour does not. The song of the opera singer, for example, vanishes in the instant of its performance. Unproductive labourers are not the same as service industry workers, however, because transportation workers add value to physical things when they move them from one place to another. Capital goods are a subset of the output of productive labour, which “is, as it was, a certain quantity of labour stocked and stored up to be employed, if necessary, upon some other occasion” (Smith 1976 [1776]:330). Capital is not an original factor of production; it is accumulated labour. It is what Petty called “past labour” and what Hume called “a stock of labour.”

Edwin Cannan (1937:xxxix) claimed that the introduction of capital theory and unproductive labour in Book II “were of course due to the acquaintance with the French *Économistes* which Smith made during his visit to France with the Duke of Buccleuch in 1764–6.” Smith probably borrowed the phrase “productive labour” from Quesnay, but he did not borrow his definition of productive labour from him. His discussion of productive labour matches the treatment by Sir William Petty (1963 [1676]:269–70). Smith even used the same examples as Petty: clothing, furniture and housing. They both favoured labour that produces physical commodities, the more durable, the better. Smith (1976 [1776]:347) wrote: “The expense too, which is laid out in durable commodities, is favourable, not only to accumulation, but to frugality.” This reflects the materialist fallacy begun by Hobbes and upheld through Marx. Smith (1976 [1776]:674–9) ridiculed the physiocratic notion that agricultural labourers are productive because they reap a surplus from the seeds they sow. The productiveness of capital was also discussed by Petty, Locke and Hutcheson, among others, before the time of the physiocrats, though without the emphasis given to it by Quesnay.

With the division of labour, each worker produces a surplus of one commodity, but wants a variety of different commodities. This leads first to exchange by barter and then to the invention of money as a long line of economists from Plato and Aristotle through Hutcheson and Hume had previously discussed. Smith (1976 [1776]:37) presented much the same scenario.

When the division of labour has been once thoroughly established, it is but a very small part of a man’s wants which the produce of his own labour can supply. He supplies the far greater part of them by exchanging that surplus part of the produce of his own labour, which is over and above his own consumption, for such parts of the produce of other men’s labour as he has occasion for.

(Smith 1976 [1776]:37)

He later makes use of the traditional idea that the surplus product of one labourer is exchanged for the surplus product of another labourer in his labour measure of value. Smith (1976 [1776]:25) initially attributed the exchange of surpluses to “a certain propensity in human nature which has in view no such extensive utility; the propensity to truck, barter, and exchange one thing for another.” Warren Samuels and Willie Henderson (2003) argue that this may have been merely a rhetorical argument. Smith later adopted the idea that exchange arises from the utilitarian principle of self-love, as explained by Hutcheson.

Smith presented much the same definition of money as Aristotle, Pufendorf and Hutcheson, among others, in his fourth chapter, “Of the Origin and Use of Money.” After the division of labour has been established, labourers exchange their surpluses for money in order to avoid the inconvenience of barter.

Every prudent man in every period of society, after the first establishment of the division of labour, must naturally have endeavoured to manage his affairs in such a manner, as to have at all times by him, besides the peculiar produce of his own industry, a certain quantity of some one

commodity or other, such as he imagined few people would be likely to refuse in exchange for the produce of their industry.

(Smith 1976 [1776]:37–8)

Money is, therefore, a general claim on commodities that everyone accepts. After giving a detailed account of the history and origin of money from the ancient world to modern times, along the lines of Hutcheson, Smith (1976 [1776]:44) described how “money has become in all civilized nations the universal instrument of commerce, by the intervention of which goods of all kinds are bought and sold, or exchanged for one another.” While it functions as an indispensable medium of exchange here and now, it is an imperfect measure of value or store of value over long periods of time.

Measures of value: the real price of commodities versus the real price of labour

Smith needed an invariable measure of value for two reasons: one theoretical, the other practical. His theory required an invariable measure of value to determine whether one nation was richer than another or whether a particular nation had grown wealthier over time. Without a universal measure of value, Smith could not inquire into the nature and causes of the wealth of nations. His theory of measurement followed the approach of Petty and Cantillon. They claimed that land and labour were the origin of value, so they tried to measure values by the par between land and labour. Smith had a labour theory of the origin of value, so he sought a labour measure of value. As a practical matter, Smith wanted an invariable measure of value so that landlords could rent their lands on long-term leases and continue to receive a constant income in real terms, that is, in terms of what their money could buy. Since the value of money had declined after the discovery of the rich gold and silver mines in America, Smith argued, following Petty, Locke and Hutcheson, among others, that grain was a more stable measure of value than money.

He confused his readers, however, by presenting two different labour measures of value, which he called the real price of commodities and the real price of labour. Since labour alone is the origin, source or cause of all value, he defined the real price of commodities as the sacrifice of labour necessary to produce commodities. This is the toil, trouble, pain, disutility or physic cost of the labour incurred in the production of commodities. The real price of commodities is his universal measure of value. The real price of labour, in contrast, is the subsistence that labourers can purchase with their wages, which Smith called a popular, not a universal, measure of value.

David Ricardo (1951 [1821]:14) criticized Smith for making his standard measure equal to the quantity of labour that an object can hire, purchase or command on the market: “Sometimes he speaks of corn, at other times of labour, as a standard measure; not the quantity of labour bestowed on the production of any object, but the quantity which it can command in the market.” But Ricardo misread Smith, which led others to misread him, too.¹² Labour command has no specific meaning for Smith. Sometimes he used the expression labour command to refer to the labour sacrifice necessary for production, which he called the real price of commodities; and sometimes he referred to labour command as the subsistence of labour, which is the real price of labour.

Smith began Chapter 5, “Of the Real and Nominal Price of Commodities, or of their Price in Labour and their Price in Money,” with a notoriously ambiguous paragraph.

Every man is rich or poor according to the degree in which he can afford to enjoy the necessities, conveniencies, and amusements of human life. But after the division of labour has once thoroughly taken place, it is but a very small part of these with which a man’s own labour can supply him. The far greater part of them he must derive from the labour of other people, and he must be rich or poor according to the quantity of that labour which he can command, or which he can afford to purchase. The value of any commodity, therefore, to the person who possesses it, and who means not to use or consume it himself, but to exchange it for other commodities, is equal to the quantity of labour which it enables him to purchase or command. Labour, therefore, is the real measure of the exchangeable value of all commodities.

(Smith 1976 [1776]:47)

This passage comes out of the long history of the theory of the origin of society, in which individuals barter the surplus product of their own industry for the surplus product of the labour of other people. This scene was described by many authorities from Plato through Hutcheson. Smith repeated it in the preceding chapters,¹³ where labourers exchange their surpluses with one another. Since labour is only thoroughly subdivided in civil society, this passage does not concern those primitive societies which preceded the accumulation of capital and the division of labour. It applies to civil society, where each labourer produces a surplus of one commodity and wants to exchange it for the produce of other labourers, as Smith had previously explained:

the certainty of being able to exchange all that surplus part of the produce of his own labour, which is over and above his own consumption, for such parts of the produce of other men’s labour as he may have occasion for, encourages every man to apply himself to a particular occupation, and to cultivate and bring to perfection whatever talent or genius he may possess for that particular species of business.

(Smith 1976 [1776]:28)

The first paragraph of Chapter 5 means that each labourer wants “to enjoy the necessities, conveniencies and amusements of life” that come “from the labour of other people, and he must be rich or poor according to the quantity of that labour which he can command.” Here, labour command means the labour necessary for the production of commodities, which equals the whole production.

On the same page, Smith (1976 [1776]:47–8) defined “the real price of every thing” as the labour embodied in commodities: “they contain the value of a certain quantity of labour which we exchange for what is supposed at the time to contain the value of an equal quantity.” This idea flows from the first sentence of the *Wealth of Nations*, where Smith asserted that “the annual labour of every nation is the fund which originally

supplies it with all the necessities and conveniences of life which it annually consumes.” As labour is the origin of value, so labour sacrifice is the real price of commodities.

Labour command is also used in the sense of labour necessary for production, or embodied in production, in the next paragraph, which criticizes the claim by Hobbes that wealth is power. The power that a fortune conveys, Smith explained,

is the power of purchasing; a certain command over all the labour, or over all the produce of labour which is then in the market. His fortune is greater or less, precisely in proportion to the extent of this power; or to the quantity either of other men’s labour, or, what is the same thing, of the produce of other men’s labour, which it enables him to purchase or command.

(Smith 1976 [1776]:48)

The “command over all the labour” refers to “all the produce of labour.” What is the same thing? The quantity of “other men’s labour” is the same thing as “the produce of other men’s labour,” because labour is the origin, source or cause of value. In this passage, labour embodied also means labour command, as Vincent Bladen (1975:511) maintained.¹⁴

Smith assumed that labour was homogeneous, that labourers possess the same innate abilities and the same preferences for different occupations.¹⁵ When labourers do the same work, they make the same sacrifice at all times and in all nations.

Equal quantities of labour, at all times and places, may be said to be of equal value to the labourer. In his ordinary state of health, strength and spirits; in the ordinary degree of his skill and dexterity, he must always lay down the same portion of his ease, his liberty, and his happiness. The price which he pays must always be the same, whatever may be the quantity of goods which he receives in return for it. Of these, indeed, it may sometimes purchase a greater and sometimes a smaller quantity; but it is their value which varies, not that of the labour which purchases them.

(Smith 1976 [1776]:50)

The produce of labour varies from time to time and from place to place, but the sacrifice of labour is an absolute value that is constant over time and space. As Smith (1976 [1776]:51) put it: “Labour alone, therefore, never varying in its own value, is alone the ultimate and real standard by which the value of all commodities can at all times and places be estimated and compared. It is their real price; money is their nominal price only.” Thus, labour sacrifice is the real price of commodities.¹⁶

As a practical matter, Smith also considered money and corn as measures of value, which Petty, Locke and many others had done before him. Money is a perfect measure of value for each transaction, taken one at a time, because equal values are given in exchange. It is also relatively stable for short time periods, but the discovery of new gold and silver mines had reduced the value of money slowly. Corn is a more stable measure of value than money for long time periods, because the division of labour cannot be carried so far in agriculture as it can in manufacturing. Therefore, the labour sacrifice

needed to produce a bushel of corn does not change much over long periods, as Hutcheson previously claimed. Good and bad harvests, however, cause the price of corn to fluctuate from season to season, while the value of money remains relatively stable. Since neither money nor corn is an invariable measure of value, Smith (1976 [1776]:54) adopted labour as “the only universal, as well as the only accurate measure of value, or the only standard by which we can compare the values of different commodities at all times and at all places.”

Since labour is also bought and sold, it has a real and nominal price like commodities. The real price of labour is the subsistence that the money wages of labour can purchase. Subsistence varies with the advancing, stationary or declining state of society. It measures the economic welfare of labour.

In this popular sense, therefore, labour, like commodities, may be said to have a real and a nominal price. Its real price may be said to consist in the quantity of the necessities and conveniencies of life which are given for it; its nominal price, in the quantity of money.

(Smith 1976 [1776]:51)

The subsistence of labour by itself cannot measure the wealth of nations, because national wealth (or welfare) is total consumption. It includes the consumer goods distributed to the landlord and the capitalist as well as the labourer. “There is no country in which the whole annual produce is employed in maintaining the industrious,” Smith (1976 [1776]:71) observed; “the idle every where consume a great part of it.” Therefore, the wages or subsistence of labour cannot be Smith’s universal measure of value, as so many authorities claim,¹⁷ which is why Smith labelled it “popular.”

The regulation of value in primitive society

The labour theory of value, as it is commonly understood, states that the labour necessary to produce different commodities determines their value in exchange. This proposition is intended to explain market prices, where prices are simply relative values. It is a theory of the regulation of value, and it is conceptually distinct from the origin of value and the measure of value. If the whole value of each commodity arises from the labour needed to produce it, then the quantity of labour employed in producing each commodity determines the value of it. This may be called an absolute labour theory of value. The theory holds, however, if the relative values of different commodities are proportional to the labour necessary to produce them, as Ricardo maintained.

Adam Smith captured the imagination of classical economists with his labour theory of the regulation of value, but he only applied it to “that early and rude state of society which precedes both the accumulation of stock and the appropriation of land.” It holds true solely in a state of nature.

If among a nation of hunters, for example, it usually costs twice the labour to kill a beaver which it does to kill a deer, one beaver should naturally exchange for or be worth two deer. It is natural that what is usually the

produce of two days or two hours labour, should be worth double of what is usually the produce of one day's or one hour's labour.

(Smith 1976 [1776]:65)

This is an absolute labour theory of value, because it maintains that labour alone produces the whole value of each commodity. Labour must evidently be homogeneous for the work of different labourers to be commensurable. In primitive society, labour is the origin, measure and regulator of value. "In this state of things," Smith (1976 [1776]:65) concluded, "the whole produce of labour belongs to the labourer." Neither landlords nor employers share in the produce of labour.

Smith devoted only three paragraphs, a total of eight sentences, to his labour theory of exchangeable value, but it had an enormous impact. It became the foundation of Ricardian and Marxian economics. Curiously, he introduced it briefly in a chapter which was devoted to showing that, in civil society, the price of most commodities has three component parts: wages, profit, and rent.

These three component parts of price include, of course, whatever is necessary to maintain and replace the capital goods used up in production, as Smith remarked on several occasions. The whole price of any commodity is either immediately or ultimately made up of wages, profit and rent. For example, Smith accounted for the cost of keeping capital intact in the price of corn.

A fourth part, it may perhaps be thought, is necessary for replacing the stock of the farmer, or for compensating the wear and tear of his labouring cattle, and other instruments of husbandry. But it must be considered that the price of any instrument of husbandry, such as a labouring horse, is itself made up of the same three parts; the rent of the land upon which he is reared, the labour of tending and rearing him, and the profits of the farmer who advances both the rent of this land, and the wages of this labour.

(Smith 1976 [1776]:68)

That part of gross output which "is destined for replacing a capital," Smith (1976 [1776]:335) explained, is larger in rich countries than in poor countries, because more capital is accumulated and annually consumed in rich than in poor countries. Capital consumption accounts for the difference between the gross and net product of the nation.¹⁸

The regulation of value in civil society

For civil society, Smith abandoned his labour theory of the regulation of value, though he still maintained that all production is due to labour. He also kept his labour sacrifice measure of value. He introduced a cost of production theory to explain the determination of market prices.

As soon as stock has accumulated in the hands of particular persons, some of them will naturally employ it in setting to work industrious people, whom they will supply with materials and subsistence, in order to make a profit by the sale of their work, or by what their labour adds to the value of the materials.

(Smith 1976 [1776]:65–6)

Notice that it is labour, not capital, that “adds to the value of materials.” Capital is simply accumulated labour. “In this state of things,” Smith (1976 [1776]:67) pointed out, “the whole produce of labour does not always belong to the labourer.” Notice again, the whole produce is due to labour. Labour is the origin, source or cause of value. Continuing with his hypothetical history of mankind, Smith (1976 [1776]:67) added, “As soon as the land of any country has all become private property, the landlords, like all other men, love to reap where they never sowed, and demand a rent even for its natural produce.” Material things are gifts of nature. While the whole annual produce in civil society is still due to labour alone, its exchangeable value is divided among the labourer, the landlord and the capitalist.

Labour sacrifice is still his measure of value in civil society, even though the price of most commodities is now paid out as wages, profit and rent. “The real value of all the different component parts of price, it must be observed, is measured by the quantity of labour which they can, each of them, purchase or command,” Smith (1976 [1776]:67–8) claimed. “Labour measures the value not only of that part of price which resolves itself into labour, but of that which resolves itself into rent, and of that which resolves itself into profit.” The quantity of labour that each can command is the output they can command, since all output is due to labour.

In the terminology of Smith, the annual produce of labour and the exchangeable value of it are two equal, but conceptually distinct, magnitudes. The annual produce of society equals the total labour necessary for production, where labour alone produces all commodities, land being a gift of nature, whereas, in civil society, the exchangeable value of that produce is distributed as wages, profit and rent. Thus, Smith stated:

The whole of what is annually either collected or produced by the labour of every society, or what comes to the same thing, the whole price of it, is in this manner originally distributed among some of its different members. Wages, profit, and rent, are the three original sources of all revenue as well as of all exchangeable value.¹⁹

(Smith 1976 [1776]:69)

The whole of what is produced by labour equals “the whole price of it,” but the exchangeable value of it is distributed to the landlord, the labourer and the capitalist. The national product equals national income.

Smith repeated this story a few pages later in a rather confusing passage, in which labour command now means the real price of labour, that is, the wages of labour.

As in a civilized country there are but few commodities of which the exchangeable value arises from labour only, rent and profit contributing

largely to that of the far greater part of them, so the annual produce of its labour will always be sufficient to purchase or command a much greater quantity of labour than what was employed in raising, preparing, and bringing that produce to market. If the society were annually to employ all the labour which it can annually purchase, as the quantity of labour would increase greatly every year, so the produce of every succeeding year would be of vastly greater value than that of the foregoing.

(Smith 1976 [1776]:71)

“The annual produce of its labour” still equals the quantity of labour that was “employed in raising, preparing, and bringing that produce to market,” but labour does not receive all of what it produced. The national product can hire or command a greater quantity of labour than the share of production distributed to labour. In this case, labour command refers to the subsistence or wages of labour, which Smith called the real price of labour. Labour produces the national product, but labour receives only part of its product. The rest goes to landlords and capitalists.

Smith does not have a simple adding up theory of value, as some authorities maintain.²⁰ The landlord and the employer share in the produce of labour, so that the sum of wages, profit and rent necessarily equals the whole produce of labour, a proposition which he repeated many times, for the nation in the aggregate, if not for each single commodity. He does not address the question of reconciling the labour necessary to produce a single commodity with its natural price. The attempt to reconcile them by Ricardo forced him to modify his labour theory of value, and it entangled Marx in the transformation problem.

Adam Smith was the father of both classical and neoclassical value theory. While his labour theories of the origin, measure and regulation of value may appear erroneous, perhaps even unintelligible, from the neoclassical point of view, they became the starting point for David Ricardo, Karl Marx and the whole classical school. Ricardo (1951 [1821]:13) claimed, for example, that labour “is really the foundation of the exchangeable value of all things.” Marx (1961–62 [1867–94]:I, 38) called labour “the value-creating substance.” At the same time, Smith’s supply and demand theories of the market and natural price became the neoclassical standard of analysis for over a century. They reappear in a more elegant and modified form in the *Elements of Pure Economics* by Léon Walras and the *Principles of Economics* by Alfred Marshall.

Smith began his analysis of commodity prices by assuming that the factor market is in a state of equilibrium. This is a Marshallian partial equilibrium assumption. For labour and capital, Smith (1976 [1776]:72) postulated: “There is in every society or neighbourhood an ordinary or average rate both of wages and profit in every different employment of labour and stock.” Similarly, for land, Smith (1976 [1776]:72) stated: “There is likewise in every society or neighbourhood an ordinary or average rate of rent.” This defines static equilibrium in the factor market: “These ordinary or average rates,” Smith (1976 [1776]:72) allowed, “may be called the natural rates of wages, profit, and rent, at the time and place in which they commonly prevail.” In his theory of income distribution, he discussed the dynamic changes in the natural rates of wages, profit and rent as society progresses.

The natural price of any commodity breaks down into the natural rates of wages, profit and rent which must be paid to bring a commodity to market. This may be called a necessary cost theory of value, following Ronald Meek,²¹ because land, labour and capital must receive at least their natural prices; otherwise, supply will not be forthcoming. The natural price corresponds to the Marshallian long-run competitive equilibrium price. The market price corresponds to the equilibrium price in the Marshallian temporary period,²² where a previously produced stock of commodities is available for sale. The market price, Smith (1976 [1776]:73), said, “may either be above, or below, or exactly the same with its natural price.” Supply and demand regulate the market price.

Supply in the temporary period for Smith is the quantity brought to market, as in the theory of John Locke, whereas what he called the effectual demand equals the quantity demanded at the natural price.

The market price of every particular commodity is regulated by the proportion between the quantity which is actually brought to market, and the demand of those who are willing to pay the natural price of the commodity, or the whole value of the rent, labour, and profit, which must be paid in order to bring it thither. Such people may be called the effectual demanders, and their demand the effectual demand; since it may be sufficient to effectuate the bringing of the commodity to market.

(Smith 1976 [1776]:73)

The supply curve is perfectly inelastic, whereas the demand curve, whether elastic or inelastic, is downward sloping.

His analysis of excess demand and excess supply demonstrates that demand curves are downward sloping. On the one hand, an excess demand occurs when the quantity brought to market falls short of the quantity demanded at the natural price, so price rises.

When the quantity of any commodity which is brought to market falls short of the effectual demand, all those who are willing to pay the whole value of the rent, wages, and profit, which must be paid in order to bring it thither, cannot be supplied with the quantity which they want. Rather than want it altogether, some of them will be willing to give more. A competition will immediately begin among them, and the market price will rise more or less above the natural price.

(Smith 1976 [1776]:73–4)

With an excess demand, buyers bid up the price. On the other hand, an excess supply exists when the quantity supplied exceeds the quantity demanded at the long-run competitive equilibrium price.

When the quantity brought to market exceeds the effectual demand, it cannot be all sold to those who are willing to pay the whole value of the rent, wages and profit, which must be paid in order to bring it thither. Some part must be sold to those who are willing to pay less, and the low

price which they give for it must reduce the price of the whole. The market price will sink more or less below the natural price, according as the greatness of the excess increases more or less the competition of the sellers, or according as it happens to be more or less important to them to get immediately rid of the commodity.

(Smith 1976 [1776]:74)

Sellers cut price with an excess supply. Equilibrium exists when the quantity supplied equals the effectual demand and the market price equals the natural price.

When the quantity brought to market is just sufficient to supply the effectual demand and no more, the market price naturally comes to be either exactly, or as nearly as can be judged of, the same with the natural price.

(Smith 1976 [1776]:74)

This analysis of excess demand and excess supply is a precursor to the law of the establishment of the equilibrium price presented by Walras (1954 [1874–77]:105–6). Prices adjust to establish equilibrium.

Disequilibrium exists if the quantity brought to market does not equal the effectual demand, so that the market price does not equal the natural price. On the one hand, if the market price falls below the natural price, production decreases. If the quantity brought to market

exceeds the effectual demand, some of the component parts of its price must be paid below their natural rate. If it is rent, the interest of the landlords will immediately prompt them to withdraw a part of their land; and if it is wages or profit, the interest of the labourers in the one case, and of their employers in the other, will prompt them to withdraw a part of their labour or stock from this employment.

(Smith 1976 [1776]:74–5)

Output adjusts to establish equilibrium. In the case of a single commodity, such as barley, rent is a necessary cost of production which must be paid in order to produce the commodity, because landlords withdraw their land if they do not receive the ordinary or average rent of land. Wages and profits are similarly necessary costs of production. On the other hand, if the market price exceeds the natural price, output expands.

If, on the contrary, the quantity brought to market should at any time fall short of the effectual demand, some of the component parts of its price must rise above their natural rate. If it is rent, the interest of all other landlords will naturally prompt them to prepare more land for the raising of this commodity; if it is wages or profit, the interest of all other

labourers and dealers will soon prompt them to employ more labour and stock in preparing and bringing it to market.

(Smith 1976 [1776]:75)

Again, output adjusts to establish equilibrium, as in Marshall's analysis.²³ The long-run equilibrium price is a centre of gravity, or as Smith (1976 [1776]:75) put it: "The natural price, therefore, is, as it were, the central price, to which the prices of all commodities are continually gravitating." When the quantity brought to market does not equal the equilibrium amount, price adjusts. When the market price does not equal the natural price, output adjusts. Adam Smith, therefore, foretold the stability conditions of both Léon Walras and Alfred Marshall.²⁴

The analysis of the market and natural price by Smith shows how the economy possesses a self-righting mechanism, provided the pursuit of self-interest is constrained by the conditions of perfect competition. It is a theoretical analysis that only holds true where anyone can enter or quit any occupation or business at any time. It does not apply to the world of imperfect competition with manufacturing secrets, monopoly grants, exclusive privileges of corporations, statutes of apprenticeships and similar restrictions.

Distribution of income

Smith presented a static as well as a dynamic theory of income distribution. His static analysis explains inequalities in the wages of labour, the profits of stock and the rent of land. The rates of wages and profits in different occupations depend upon psychological factors that affect the supply of labour and capital, whereas rent depends on physical factors that affect the productivity of land. His dynamic analysis of economic growth encompasses his theory of income distribution as society progresses, stagnates or declines. As a country progresses, capital accumulates and population grows, while land is constant, so that factor proportions change. The proportions of land, labour and capital ultimately determine the natural rates of wages, profit and rent. Since land becomes increasingly scarce, rent tends to rise; and since wages may rise and cannot very well fall far below subsistence for long, logic implies that profits must ultimately tend to fall, though Smith did not construct a logically consistent, fully integrated and deterministic theory of income distribution. Ricardo predicted the same historical tendencies as Smith, but based them on his own theory.

His static theory of relative wages reconciles his assumption that all labourers are innately equal with the simple fact that money wages are often unequal. If labour is homogeneous in the sense that all labourers possess the same innate abilities and the same preferences for different occupations, then anyone may enter any occupation. Capital is also homogeneous before it is invested in any industry, so that competition tends to equalize the net advantages to capital in all industries. Where competition is perfect, Smith concluded:

The whole of the advantages and disadvantages of the different employments of labour and stock must, in the same neighbourhood, be

either perfectly equal or continually tending to equality. If in the same neighbourhood, there was any employment evidently either more or less advantageous than the rest, so many people would crowd into it in the one case, and so many would desert it in the other, that its advantages would soon return to the level of other employments.

(Smith 1976 [1776]:116)

The composite of all the terms and conditions of employment tend to equality, even though money wages may differ. If labour is not homogeneous, if, for example, an occupation required a rare talent, like the opera, competition cannot equalize its net advantages with other occupations. Occupations may form non-competing groups.²⁵ Similarly, if government policy or social convention restricts or encourages entry into particular occupations, their earnings may be permanently raised above or depressed below the earnings of otherwise comparable occupations.

Smith presented five circumstances that give rise to wage inequalities even under perfect competition: the agreeableness, learning time, constancy of employment, trustworthiness and riskiness of different occupations.²⁶ Of these five, only two affect the rates of profits: the agreeableness and riskiness of different employments of capital. Though these five circumstances “occasion considerable inequalities in the wages of labour and profits of stock,” Smith (1976 [1776]:131) observed, they “occasion none in the whole of the advantages and disadvantages, real or imaginary, of the different employments of either.” The net advantages tend to equality. Wage differentials are constant over time, because sacrifices of labour are the same at all times and places. While Smith’s theory has been subject to serious criticisms, Ricardo accepted his conclusion that wage differentials tend to remain historically constant.

Supply and demand regulate the natural rate of wages as society progresses, stagnates or declines. Wages depend upon the rate of capital accumulation relative to the rate of population growth. The demand for labour consists of a wages fund, which grows as capital accumulates. The accumulation of capital per capita bids up the wage of labour, which encourages the growth of the population. The supply of labour depends upon the subsistence of labour.

Every species of animals naturally multiplies in proportion to the means of their subsistence, and no species can ever multiply beyond it. But in civilized society it is only among the inferior ranks of people that the scantiness of subsistence can set limits to the further multiplication of the human species; and it can do so in no other way than by destroying a great part of the children which their fruitful marriages produce.

(Smith 1976 [1776]:97–8).

The availability of food limits the growth of population, which Malthus called the ultimate check in his *Essay on Population*. While Smith referred to Cantillon’s estimate that labourers must earn twice their subsistence in order to raise a family in which two children survive to maturity, he did not endorse Cantillon’s calculations. “The labour of the husband and wife together must, even in the lowest species of common labour,”

Smith (1976 [1776]:85–6) granted, “be able to earn more than what is precisely necessary for their maintenance.”

He traced the dynamic adjustment of population to capital accumulation through three states of civil society: the progressive, stationary and declining states. “The demand for men,” Smith (1976 [1776]:98) wrote, “like that for any other commodity, necessarily regulates the production of men.” In the progressive state, wages are sufficiently high to increase the size of the population and the supply of labour. If capital accumulates more rapidly than population grows, the natural rate of wages tends to rise; but, if the accumulation of capital should cease, population would continue to expand until wages fall to subsistence, at which point population growth would stop and society would be in the stationary state. Society would fall into a declining state, if anything should destroy a part of the capital stock and push wages below subsistence, causing population to decline.

North America was his example of a rapidly progressing state, which the growth of its population proved. “The most decisive mark of the prosperity of any country,” Smith (1976 [1776]:87–8) wrote, “is the increase of the number of its inhabitants.” In Europe, population did not double in 500 years, while it doubled in twenty or twenty-five years in North America. China had long been in a stationary state, according to Smith (1976 [1776]:89), even though it was “one of the most fertile, best cultivated, most industrious, and most populous countries in the world.” The failure of its laws and institutions to protect the private property of industrious people discouraged the accumulation of capital. Finally, Bengal was in a declining state because of the destructive administration of mercantile companies. “The difference between the genius of the British constitution which protects and governs North America,” Smith (1976 [1776]:91) wrote in the year of the American Revolution, “and that of the mercantile company which oppresses and domineers in the East Indies, cannot perhaps be better illustrated than by the different state of those countries.” As the prosperity of the nation depends upon the accumulation of capital, so this accumulated wealth requires government to establish a system for the administration of justice.

The natural rate of profit declines as the stock of capital accumulates, but not, according to Smith, due to an increase in the quantity of money, as Messrs Law, Locke and Montesquieu claimed. Profits fall in part because wages rise and depress profits and in part because markets become more competitive as capital accumulates.

The increase of stock, which raises wages, tends to lower profit. When the stocks of many rich merchants are turned into the same trade, their mutual competition naturally tends to lower its profit; and when there is a like increase of stock in all the different trades carried on in the same society, the same competition must produce the same effect in them all.

(Smith 1976 [1776]:105)

The rate of profit falls until the stationary state arrives, when, Smith noted (1976 [1776]:113), profits are “so low as to render it impossible for any but the very wealthiest people to live upon the interest of their money.” The idea that increasing competition reduces profits may well have come from Hutcheson (2000 [1755]:71), who argued that profits fall “when many hands and much wealth are employed in trade,” or from Hume (1964 [1752]:III, 326–7), who claimed that “when commerce has become extensive, and

employs large stocks, there must arise rivalships among the merchants, which diminish the profits of trade.” While leading authorities have criticized this idea,²⁷ it is consistent with the microeconomic theory of profits present by A.A.Cournot (1963 [1838]), who began his theory of prices with monopoly. Profits fall as the number of traders increases until the competitive solution obtains.

Smith presented three different theories of rent. While Smith did not always carefully separate his three theories, they are conceptually distinct. They asked different questions: What is the origin of rent or why is land scarce? When is rent a cost? When is rent a monopoly profit? Even though Ricardo relied on all three of Smith’s theories, his criticisms of them left Smith’s contribution in disrepute to this day.²⁸

First, sometimes value determines rent. Rent varies with the location and quality of land. Crop land, however, always yields a rent. As society progresses and population grows, rent increases because the quantity of land is fixed. This theory concerns the origin of rent and its historical progress. Smith (1976 [1776]:264) observed that

every improvement in the circumstances of the society tends either directly or indirectly to raise the real rent of land, to increase the real wealth of the landlord, his power of purchasing the labour, or the produce of the labour of other people.

(Smith 1976 [1776]:264)

Land becomes increasingly scarce in all of its alternative uses. A general tax on rent, that is, a tax on all the alternative uses of land, will not affect production, according to Smith (1976 [1776]:162), because “High or low wages and profit, are the causes of high or low price; high or low rent is the effect of it.” In this case, rent is a surplus that can be taxed away. This theory led to the doctrine of Ricardian rent. Smith differed from Ricardo, however, because he assumed that all land was appropriated as soon as a country was settled, so that the landlord could legally demand a rent for the use of uncultivated land.

Second, sometimes rent determines value because land has alternative uses. If the market price of a particular crop, such as barley, should fall below its natural price, the rent of that land will tend to fall below its natural rate. In this case, Smith (1976 [1776]:75) explained that rent is a necessary cost of production, so that “the interest of the landlords will immediately prompt them to withdraw a part of their land.” The alternative uses of land make rent a cost of production in each alternative use, not only to the farmer, but also to society.²⁹ D.H.Buchanan (1946 [1929]) presented a convincing reconciliation of Smith’s first two theories: when Smith discusses the distribution of income, he treats land as if it has only one use, so that rent can be taxed away; when he discusses the price of any particular crop, land has alternative uses, so that rent is a cost of production.

Third, sometimes, Smith (1976 [1776]:161) asserted, rent “is naturally a monopoly price.” Here, he offered several different examples, which are by no means the same: (1) the sugar plantations in the Caribbean, which earn a pure rent like Petty’s tin mines; (2) the vineyards of France of a peculiarly happy soil and situation, a case which Ricardo later accepted; and (3) the inequality of land holdings in Europe, a fact which Locke, Cantillon and J.S.Mill also analysed.³⁰ Since all land is appropriated and private property, landlords can refuse to supply their land, even if it is desert moor or a barren island,

unless they receive a rent. Smith appears to have been groping for a theory of rent, so it is not surprising that his followers did not fully understand him.

At the end of Book I, and again early in Book II, Smith returned to his thesis that labour produces the national product but that the exchangeable value of production is distributed to the landlord, the capitalist and the labourer.

The whole annual produce of the land and labour of every country, or what comes to the same thing, the whole price of that annual produce, naturally divides itself, it has already been observed, into three parts; the rent of land, the wages of labour, and the profits of stock; and constitutes a revenue to three different orders of people; to those who live by rent, to those who live by wages, and to those who live by profit.

(Smith 1976 [1776]:265)

Thus, Smith reasserted his theory that labour produces the whole national product, but that the exchangeable value of the national product divides into wages, profit and rent. Where Hobbes, Petty, Locke and Cantillon previously asserted that total production came from land and labour, and where Quesnay claimed that land is the unique source of wealth, Smith identified labour as the active agent which produces commodities from the free gifts of nature.

Natural liberty and economic welfare

The *Wealth of Nations* is the classic statement of economic liberalism. Smith's theory of justice supported his economic doctrine that a policy of natural liberty maximizes economic welfare. John Locke (1988 [1690]: 271) wrote that a state of liberty prevails in the state of nature, where the law of nature teaches that, since people are "all equal and independent, no one ought to harm another in his Life, Health, Liberty, or Possessions." Smith (1976 [1759]:82) presented a similar concept of justice based on sympathy or fellow-feeling in his *Theory of Moral Sentiments*: "Mere justice is, upon most occasions, but a negative virtue, and only hinders us from hurting our neighbour."³¹

He expanded on this idea in the *Wealth of Nations*. An exact administration of justice, Smith (1976 [1776]:708) wrote, requires the sovereign to protect, "as far as possible, every member of the society from the injustice or oppression of every other member of it." In primitive society, where there is little property, there is little need for an administration of justice. In civil society, however, "The acquisition of valuable and extensive property," Smith (1976 [1776]:710) explained, "necessarily requires the establishment of civil government," for it is only under the shelter of a civil magistrate that "the owner of that valuable property, which is acquired by the labour of many years, or perhaps of many successive generations, can sleep a single night in security." Notice: the property of the rich for Smith was originally acquired by labour. Where considerable capital has been accumulated, the civil magistrate is needed to protect the property of the rich from the invasion of the poor.³²

In the *Wealth of Nations*, Smith advocated the liberal policy of laissezfaire, which he gave the Lockean-sounding name of "natural liberty." He contrasted his system of natural

liberty with the mercantile system, which he defined in a narrow sense and in a broad sense. In the narrow sense, the mercantile system referred to those foreign trade policies which governments follow to obtain gold through a favourable balance of trade. Smith (1976 [1776]:450) claimed that these policies were based on the confused idea that wealth consists of money. In the broad sense, the mercantile system referred to the whole catalogue of government policies that give preferences to or imposed restraints on particular industries or occupations. The obvious and simple system of natural liberty required removing both foreign and domestic preferences and restraints.³³ Liberty promoted the economic interest of society, whereas the mercantile system gave benefits to special interest at the expense of the whole society.

All systems either of preference or of restraint, therefore, being thus completely taken away, the obvious and simple system of natural liberty establishes itself of its own accord. Every man, as long as he does not violate the laws of justice, is left perfectly free to pursue his own interest his own way, and to bring both his industry and capital into competition with those of any other man, or order of men. The sovereign is completely discharged from a duty, in the attempting to perform which he must always be exposed to innumerable delusions, and for the proper performance of which no human wisdom or knowledge could ever be sufficient; the duty of superintending the industry of private people, and of directing it towards the employments most suitable to the interest of the society.

(Smith 1976 [1776]:687)

The system of natural liberty removes the sovereign from the commercial affairs of the nation. Under the mercantile system of preference or restraint, the sovereign bestows favours on particular people by grants of monopoly power or exclusive privileges, by taxing or curtailing imports, by subsidizing exports, by distributing preferences to particular occupations and by sundry acts of state. These favours harm the rest of society which pays for them with higher prices or higher taxes or fewer goods. It is a small step to conclude that they are deprived of the fruits of their labour.

The state still had three duties to perform under the system of natural liberty. First, national defence is necessary to protect society from the invasion and violence from other nations. Second, a reasonable administration of justice is required to protect people from injury by others, especially injury to their property.³⁴ Plato, Aristotle, Locke and many others had long before recognized the duties of national defence and the administration of justice. Government intervention to provide justice and defence is not mercantilism, properly considered, because the object is the security of the people and their property, not the profits of merchants and manufacturers. Since markets do not and cannot spontaneously provide justice and security, state action is necessary. Third, Smith argued that the state should provide certain public works and institutions, such as roads, bridges and education.³⁵

Smith presented two different arguments that tie the economic interest of the whole of society to the political system of natural liberty. They explain why a policy of *laissez-faire* promotes the wealth of nations. The first argument is based on two premises: (1) his

assertion that capital should be allocated to different industries according to the value added to production and (2) his supposition that this value added is highest in agriculture, next in manufacturing and last of all in the wholesale and retail trades. The carrying trade, that is, the importing and exporting business for other countries, adds the least value to the national product because its principal activity occurs abroad.³⁶ It is in this context that Smith's famous reference to the invisible hand appears.³⁷

By preferring the support of domestick to that of foreign industry, he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention.

(Smith 1976 [1776]:456)

The profit motive leads the capitalist to prefer those industries which are most agreeable, putatively agriculture, and least risky, that is, domestic as oppose to foreign trade. A naive application of this idea logically implies that the government should intervene in the economy to promote artificially those industries with the highest value added, like agriculture, but this was certainly not Smith's intention.

His second argument shows that, when individuals pursue their own self-interest, the division of labour leads them to produce each commodity at the lowest possible cost. "It is the maxim of every prudent master of a family," Smith (1976 [1776]:456) wrote, "never to attempt to make at home what it will cost him more to make than to buy." The rule may be stated: buy or make, according to which is the cheaper. Individuals do not need instruction in it, though governments frequently do.

Smith applied this rule on several occasions. In the case of foreign trade, it explains the international division of labour and specialization of production.

If a foreign country can supply us with a commodity cheaper than we ourselves can make it, better buy it of them with some part of the produce of our own industry, employed in a way in which we have some advantage.

(Smith 1976 [1776]:457)

In the great trade between the town and the country, the town can manufacture goods cheaper than they can be made in the country, while the country provides the town with all the materials and supplies its needs for production and consumption.

The gains of both are mutual and reciprocal, and the division of labour is in this, as in all other cases, advantageous to all the different persons employed in the various occupations into which it is subdivided. The inhabitants of the country purchase of the town a greater quantity of manufactured goods, with the produce of a much smaller quantity of their own labour, than they must have employed had they attempted to prepare them themselves. The town affords a market for the surplus produce of the country, or what is over and above the maintenance of the cultivators, and

it is there that the inhabitants of the country exchange it for something else which is in demand among them.

(Smith 1976 [1776]:376)

Each provides a market for the surplus product of the other. J.S.Mill (1965 [1848]: 591) called this a vent-for-surplus theory,³⁸ which is manifest whenever people specialize in the production.

The rule of buying or making, according to which is the cheaper, applies as soon as the division of labour occurs, because people gain from trade even in the early ages of mankind.

In a tribe of hunters or shepherds a particular person makes bows and arrows, for example, with more readiness and dexterity than any other. He frequently exchanges them for cattle or for venison with his companions; and he finds at last that he can in this manner get more cattle and venison, than if he himself went to the field to catch them. From a regard to his own interest, therefore, the making of bows and arrows grows to be his chief business, and he becomes a sort of armourer.

(Smith 1976 [1776]:27)

This is often called the theory of absolute advantage, because, in the case of the bow and arrow maker as well as in the case of trade between the town and the country, each of the parties can produce their own commodity at a lower real cost than their trading partners. In the case of international trade, however, the real costs of foreign goods probably cannot be known and is, in any event, irrelevant. A gain from trade occurs whenever foreign goods can be purchased at a lower cost, given the foreign exchange rate, than they can be produced at home. Smith considered this to be an objective criterion.³⁹

Justice and taxation

As a moral philosopher, Smith must have been uncomfortable with the inherent contradiction presented by civil society. In primitive society, Smith (1976 [1776]:65) held that “the whole produce of labour belongs to the labourer,” so that the law of ownership conformed to Locke’s labour theory of property rights. Where land is appropriated and capital accumulated, however, Smith (1976 [1776]:67) declared that “the whole produce of labour does not always belong to the labourer.” The laws of justice deprived workers of the fruits of their labour. In his *Theory of Moral Sentiments*, Smith (1976 [1759]:84) explained that, in civil society, “The most sacred laws of justice” are those which guard first the life and person, second the property and possessions and last the personal rights of our neighbour. People who violate these rights would lose the indulgence of the impartial spectator, who does not condone hurting other people. In the *Wealth of Nations*, Smith (1976 [1776]:138) endorsed Locke’s labour doctrine of property rights for primitive society and at least held it to be an ideal for civil society: “the property which every man has in his own labour, as it is the original foundation of

all other property, so it is the most sacred and inviolable.”⁴⁰ To some extent, his policy prescriptions on taxation ameliorate the contradiction between the ideal and the real.

Smith (1976 [1776]:825–8) thought that taxes should be based on four maxims. They should be (1) in proportion to income, (2) certain in amount, (3) convenient in time and (4) economical in collection. These maxims, which Smith may have adapted from Hutcheson, offered the statesman practical advice, but they are not consistent with his theory of the incidence of taxation. The total wages earned by the inferior ranks of society greatly exceed the total rent and profits distributed to the superior ranks of society, yet only the luxuries of the poor can be taxed effectively. A tax on the necessary expenses of the poor “must always raise wages higher than they otherwise would be,” Smith (1976 [1776]:888) explained, so that “the final payment of this enhancement of wages must in all cases fall upon the superior ranks of people.” Thus, taxes cannot be proportional to income.

Furthermore, in his theory of the incidence of taxation, Smith contended that a tax on rent or on profit would not affect production, provided that the tax on rent applied to all the alternative uses of land and that the tax on profit applied to only the interest on capital, excluding any premium that may be necessary to induce the capitalist to enter risky or disagreeable occupations.

As a tax upon the rent of land cannot raise rents; because the neat produce which remains after replacing the stock of the farmer, together with his reasonable profit, cannot be greater after the tax than before it: so, for the same reason, a tax upon the interest of money could not raise the rate of interest; the quantity of stock or money in the country, like the quantity of land, being supposed to remain the same after the tax as before it.

(Smith 1976 [1776]:848)

This is consistent with his theory of rent, where “high or low wages and profit, are the causes of high or low price; high or low rent is the effect of it;” but not his theory of growth, where capital accumulation stops if profits are taxed away.

Smith (1976 [1776]:847–9) divided profits into three parts: pure interest, a premium for risky employments and a premium for disagreeable employments of capital (or discount for agreeable employments). A tax that reduced the return to either risky or disagreeable employments would divert capital to other employments, because riskiness and disagreeableness are real and necessary costs. It would reduce the output of such industries and raise the price of their products until investment in them would be as attractive as their alternatives, so that the tax would ultimately be paid by the consumer. A tax on the pure interest of a previously accumulated stock of capital is, according to Smith, more like a tax on a fixed quantity of land. It is a tax on a surplus, but Smith recommended against such a tax on practical grounds. As a practical matter, capital is commonly concealed, so that a tax on capital would be difficult to assess. Furthermore, unlike land, capital can be removed from the country, if taxes are too high.

Most classical economists accepted the policy of taxing the rent of land. Ricardo presented so rigorous a restatement of Smith’s theory that even neoclassical economists like Walras and Marshall agreed with much of it, despite all the criticisms of it. Their position reflects the notion that land is a free gift of nature which costs no effort to

produce. Rent tends to rise as society progresses without any sacrifice by the landlord. Therefore, the claim was made that it could be taxed away without affecting production. A tax on pure profits proved less appealing since it may reduce the rate of saving and retard capital accumulation. Smith's theory of the incidence of taxation is consistent with Locke's labour theory of property rights. If rent and pure profit were taxed away, labour would receive the value of what it creates in civil society just as it would in a Lockean state of nature.

Conclusion

The *Wealth of Nations* is a compendium of what came from the past and a guide of what was to come in the future. It gives Adam Smith's version of the received tradition in economics, which included Plato, Aristotle, Grotius, Pufendorf, Locke, Cantillon, Quesnay, Hutcheson and Hume, among many others. The earlier chapters explained how civil society arose out of the primitive condition of mankind, how the division of labour increased the productivity of each worker and how specialization at first required people to barter the surplus product of their labour for the surpluses of other labourers. The inconvenience of barter led to the invention of money. Later chapters completed the received tradition by explaining how the accumulation of valuable property requires the establishment of an administration of justice by the state.

J.A.Schumpeter, Jacob Viner and others criticized Smith because the *Wealth of Nations* contains many ideas that were not new or original.⁴¹ Unlike Grotius and Pufendorf, who footnoted hundreds of authorities, Smith cited few economic theorists. Aside from Hume, he typically cited them on points in dispute rather than in agreement, as in the cases of Cantillon, Davenant, Law, Locke, Montesquieu and Mun. Perhaps he should have warned his readers, as Francis Hutcheson (1747:i) had done in his *Short Introduction to Moral Philosophy*: "the learned will at once discern how much of this compend taken from the writings of others." A compendium of the received ideas can scarcely be wholly original. Smith put them in so coherent an order and published them in such a polished style that his successors felt safe to ignore his predecessors. Smith became the starting point for the study of economics.

His concepts of the origin, measure and regulation of value followed the tradition in economics that remained current until the end of the nineteenth century. His labour theory of the origin of value simplified the land and labour theories of Petty, Locke and Cantillon. His labour sacrifice measure of value may have come from Hutcheson. His theory of the exchangeable value of the beaver and the deer became the foundation of the classical labour theory of value of David Ricardo and Karl Marx. All of these labour theories may be considered metaphysical or metaeconomical because they cannot be related to empirical observation. Past labour is not knowable. They cannot stand up to such rigorous scientific tests as predictability, verifiability or falsifiability, though they can be made logically consistent.⁴² In contrast, his theory of regulation of prices in civil society runs in terms of supply and demand in the market period and in the long run. It explains how prices adjust when the quantity demanded and supplied are unequal in the market period and how the market price gravitates toward the natural price in the long run. This theory found its mature expression in the works of Léon Walras and Alfred

Marshall. Prices give people the necessary information to trade and competition established equilibrium prices. The market provides a self-righting mechanism for the economy.

Smith's most important contribution to economic philosophy was his concept of the obvious and simple system of natural liberty.⁴³ He first taught it in his early lectures and later presented it in a public lecture in 1755, over twenty years before he published the *Wealth of Nations*.

Little else is requisite to carry a state to the highest degree of opulence from the lowest barbarism, but peace, easy taxes, and a tolerable administration of justice; all the rest being brought about by the natural course of things.

(Stewart 1980 [1795]:322)

François Quesnay contributed his first works on economics, *Grains* and *Fermiers*, to *l'Encyclopédie* a year later in 1756. Since Smith's concept of natural liberty preceded the physiocratic doctrine of laissez-faire, it could not have come from Quesnay, though they both prescribed similar policies. The source of Smith's concept of natural liberty lies elsewhere. It comes from the line of thought that runs most immediately from Locke to Hutcheson to Hume.

9

David Ricardo

A brief life of David Ricardo

David Ricardo (1772–1823) was born in London, where his father was a respected member of the Stock Exchange. Earlier generations had lived in Portugal, but the persecution of the Jews evidently caused them to flee to Italy, then business opportunities brought them to Amsterdam. Abraham Ricardo, the father of the economist, was sent to London about 1760 to attend to his father's financial affairs. David Ricardo, the third of seventeen children, grew up in the Sephardic community of London. He received only an elementary school education before entering his father's firm at the age of fourteen. He soon mastered the business of the Stock Exchange, but parted company with his father over his marriage in 1793 to Priscilla Wilkinson, who was a Quaker. This forced David to establish his own firm, which also became successful on the Exchange.¹

While Ricardo began with little capital, he obtained credit from bankers and soon traded in substantial volumes of government paper and other stock, a term which applied to both debt and equity issues. During the Napoleonic Wars, the government ran large deficits to maintain its army and its allies in the field. The Treasury often had to float over ten million pounds of debt a year, which brought Ricardo into the business of contracting for government loans. He was a member of the syndicate that successfully bid for the issue of £14,200,000 in 1807, when the Chancellor of the Exchequer was Henry Petty Fitzmaurice, a descendant of Sir William Petty, a close friend of Ricardo and later, as the Marquis of Lansdowne, a prominent leader of the Whig Party. Ricardo made a fortune on the £36,000,000 issue of 1815, the terms of which were settled only four days before the victory at Waterloo. The market had been depressed by uncertainty over the war, but went to premium with victory. His share in the profits permitted Ricardo to retire in comfort from the Stock Exchange. His houses in the city and the country give some idea of his success and his wealth. The site of his London house is now occupied by the US Embassy in Grosvenor Square; his country estate at Gatcomb Park in Gloucestershire is now home to Princess Anne. The house came with over 5,000 acres of land. In retirement, he purchased a seat in Parliament, where he served until his early death at 51 years of age. His views on economic questions were held in high regard in Parliament.

The *Wealth of Nations* attracted Ricardo to economics after he saw a copy of it in 1799. Three political issues in economics were of primary importance to him: (1) the Restriction Act of 1797, which, Ricardo claimed, allowed the Bank of England to over-issue its currency and cause inflation; (2) the Corn Laws, which restricted the importation of grain and which Ricardo predicted would raise wages and depress profits in industry; and (3) the size of the National Debt, which was about twice as high relative to National Income at the end of the Napoleonic Wars as it was at the end of World War I.²

His career as an economist and as a controversialist began with three anonymous letters to the *Morning Chronicle* in 1809 criticizing the Bank of England. Ricardo published much the same material in *The High Price of Bullion*, which appeared in 1810. It soon went through four editions. The Restriction Act of 1797 absolved the Bank from redeeming their bank notes in gold or silver on demand. Ricardo argued that the Bank profited at the expense of the public by issuing too much paper money, which it lent out at interest. As a consequence, its currency depreciated in terms of gold and silver and in terms of the foreign exchange rate. These charges led to the bullion controversy, during which Ricardo became friends with the leading economists of the day: Francis Horner, James Mill, T.R. Malthus and Jeremy Bentham, among others. Parliament established a Select Committee with Horner as its chairman to investigate the claims and counter-claims by Ricardo and the Directors of the Bank. The Report of the Bullion Committee supported Ricardo's main point that currency should be fully convertible into specie, though it did not accept all his ideas.

Ricardo turned his attention to the Corn Laws, when they were being debated in Parliament. He presented his theory of rent in *An Essay on the Influence of a Low Price of Corn on the Profits of Stock*, which appeared on 24 February 1815. This was a busy month for new ideas in economics. T.R. Malthus (1815) and Edward West published much the same theory of rent earlier in the month, while the paper by Robert Torrens appeared on the same day as Ricardo's pamphlet. The theory has justly been called the Malthus-West-Ricardo theory, because all three of them published much the same theory.³ Ricardo acknowledged his debt to Malthus, but recorded that he did not read West until later. He argued that restrictions on the importation of corn raised its price, which increased the cost of labour and depressed the profits of stock. He reasoned that the nation would gain from free trade in grain.

The Principles of Political Economy and Taxation first appeared in 1817. The second edition contained relatively few alterations compared to the third edition of 1821, which became the standard work on value and distribution by Ricardo. He began with an extraordinarily convoluted chapter on the theory of value. Did he really have a labour theory of value as Karl Marx, Piero Sraffa and their followers believe? Or, did he have a cost of production theory of value that led to J.S.Mill, Alfred Marshall and his neoclassical interpreters? He clearly had both. Perhaps he never appreciated the importance of the differences between them in his own mind.

Ricardo corrects Smith

David Ricardo broke the tradition of explaining how society arose out of economic necessity in the earliest ages of mankind, a tradition which began with the moral philosophy of Plato and Aristotle and which had been carried forward by Grotius, Pufendorf, Locke, Hutcheson, Hume and Adam Smith. Ricardo did not have a classical education. He simply expanded on what Smith had written in the *Wealth of Nations* when he treated the hypothetical economy of the primeval world. Ricardo (1951 [1821]:6) advised his readers that his immediate purpose was to correct "those passages in the writings of Adam Smith from which he sees reason to differ." Ricardo apparently agreed with Smith, except where he explicitly or implicitly corrected him.

Adam Smith asserted in the first sentence in the *Wealth of Nations* that total output is originally due to labour, whereas Ricardo began his *Principles of Political Economy and Taxation* with the proposition that all output ultimately comes from the employment of labour and capital on the land:

The produce of the earth—all that is derived from its surface by the united application of labour, machinery, and capital, is divided among three classes of the community; namely, the proprietor of the land, the owner of the stock or capital necessary for its cultivation, and the labourers by whose industry it is cultivated.

(Ricardo 1951 [1821]:5)

Thus, Ricardo did not adopt Smith's theory that labour produces the whole national output, but he did accept his framework which divided society into three classes. He struggled to prove the theory that labour measures value and that labour regulates, governs or determines relative values.

Where Smith inquired into the nature and causes of the wealth of all nations from the earliest times to the present day, Ricardo (1951 [1821]: 5) restricted the scope of his analysis to value and distribution within a single country: "To determine the laws which regulate this distribution, is the principal problem in Political Economy." Smith also treated such broad topics as the organization of government, the administration of justice, the military, social classes, religion, education and politics, whereas Ricardo concentrated on political economy. As capital accumulates and as population grows, the income allotted to the different classes changes. Before he turned to the question of income distribution, he sought to correct and rehabilitate the labour theory of the regulation of value presented by Adam Smith.

Labour values

He quoted and endorsed Smith's (1976 [1776]:65) example of the beaver and the deer, where "the proportion between the quantities of labour necessary for acquiring different objects seems to be the only circumstance which can afford any rule for exchanging them for one another." Whereas Smith applied his labour theory of value only to that primitive society which preceded the accumulation of capital and the appropriation of land, Ricardo sought to apply it to civil society where income is divided into wages, profit and rent.

If we look to a state of society in which greater improvements have been made, and in which arts and commerce flourish, we shall still find that commodities vary in value conformably with this principle: in estimating the exchangeable value of stockings, for example, we shall find that their value, comparatively with other things, depends on the total quantity of labour necessary to manufacture them, and bring them to market.

(Ricardo 1951 [1821]:24–5)

His theory focused on the regulation and measurement of market prices. Even though he alluded to the metaphysical concept of labour as the origin of value, he was not much interested in such philosophical abstractions.

He did not always recognize the differences between the origin, the measure and the regulation of value. Indeed, he confounded all three of them in a single sentence where he wrote:

Adam Smith, who so accurately defined the original source of exchangeable value, and who was bound in consistency to maintain, that all things became more or less valuable in proportion as more or less labour was bestowed on their production, has himself erected another standard measure of value, and speaks of things being more or less valuable, in proportion as they will exchange for more or less of this standard measure.

(Ricardo 1951 [1821]:13–14)

Smith had a labour theory of the origin of value, the metaphysical notion that labour was “the original source of exchangeable value.” The statement that “all things became more or less valuable in proportion as more or less labour was bestowed on their production” expresses a labour theory of the regulation of value, which Smith only applied to primitive society. It explains what determines relative prices. A “standard measure of value” is conceptually distinct from both the origin and the regulation of value. Values can be measured in terms of gold, for example, but gold is not the original source of value and gold does not determine relative values.

While Ricardo repeatedly stated that the value of commodities is almost exclusively attributable to labour, he thought that capital also regulated the value of commodities. He made this clear in his criticism of Adam Smith’s example of the beaver and the deer.

Even in that early state to which Adam Smith refers, some capital, though possibly made and accumulated by the hunter himself, would be necessary to enable him to kill his game. Without some weapon, neither the beaver nor the deer could be destroyed, and therefore the value of these animals would be regulated, not solely by the time and labour necessary to their destruction, but also by the time and labour necessary for providing the hunter’s capital, the weapon, by the aid of which their destruction was effected.

(Ricardo 1951 [1821]:22–3)

Ricardo (1951 [1821]:13) wanted to account for the empirical phenomenon of value in exchange with a logically consistent theory that was based on the doctrine that labour “is really the foundation of the exchangeable value of all things, excepting those which cannot be increased by human industry.” However much he may have believed in Adam Smith’s labour theory of exchangeable value, the beaver and deer example proved to be a false analogy that was inconsistent with his ultimate cost of production theory of value. The time needed to kill the beaver or the deer and to provide the hunter’s capital cannot be explained by labour alone.⁴

Exceptions, qualifications and modifications

His attempt to justify the labour theory of value in exchange led him into a long series of exceptions, qualifications and modifications which ultimately demonstrated that relative values are governed by wages plus profits.

First, he began with Smith's distinction between value in use and value in exchange. Value in use depends upon the usefulness or utility of commodities, which is an individual and subjective matter, not a market phenomenon. "Utility then is not the measure of exchangeable value, although it is absolutely essential to it," Ricardo (1951 [1821]:11) wrote, where he probably meant utility does not "regulate," rather than "measure," value in exchange. "Possessing utility," Ricardo (1951 [1821]: 12) continued, "commodities derive their exchangeable value from two sources: from their scarcity, and from the quantity of labour required to obtain them." Like Smith, Ricardo excluded utility as an explanation of the origin, measure and regulation of value.

Second, where commodities are naturally or artificially scarce, their values are unrelated to the labour required to produce them, so he treated them as exceptions to his theory. Naturally scarce commodities for Ricardo (1951 [1821]:12) included "rare statues and pictures, scarce books and coins, wines of a peculiar quality, which can be made only from grapes grown on a particular soil." Monopolies were excluded because they make commodities artificially scarce. He had a long-run competitive equilibrium theory of exchangeable value. "In speaking then of commodities, of their exchangeable value, and of the laws which regulate their relative prices," where this time Ricardo (1951 [1821]:12) meant "regulate," "we mean always such commodities only as can be increased in quantity by the exertion of human industry, and on the production of which competition operates without restraint."

Third, Ricardo took account of the fact that labour comes in different qualities, such as a jeweller and a common labourer. Some types of labour produce more value than others; and, for that reason, they are paid higher wages. He initially let wages measure the quantity of labour.

In speaking, however, of labour, as being the foundation of all value, and the relative quantity of labour as almost exclusively determining the relative value of commodities, I must not be supposed to be inattentive to the different qualities of labour, and the difficulty of comparing an hour's or a day's labour, in one employment, with the same duration of labour in another. The estimation in which different qualities of labour are held, comes soon to be adjusted in the market with sufficient precision for all practical purposes, and depends much on the comparative skill of the labourer, and intensity of the labour performed. The scale, when once formed, is liable to little variation.

(Ricardo 1951 [1821]:20-1)

While this proposition appears to undercut the notion that values are determined by labour time, Ricardo (1951 [1821]:21) quoted and agreed with a passage from Book I, Chapter 5, of the *Wealth of Nations*, where Smith argued that the hardship or ingenuity of different occupations regulate relative wages, which are adjusted "not by any accurate

measure, but by the higgling and bargaining of the market, according to that sort of rough equality, which though not exact, is sufficient for carrying on the business of common life.”

He also quoted the conclusion to Smith’s theory of wage inequality in Book I, Chapter 10, which gave a theoretical reason for Ricardo’s conclusion that relative wages are historically constant.

We may fairly conclude, that whatever inequality there might originally have been in them, whatever the ingenuity, skill, or time necessary for the acquirement of one species of manual dexterity more than another, it continues nearly the same from one generation to another; or at least, that the variation is very inconsiderable from year to year, and therefore, can have little effect, for short periods, on the relative value of commodities.

(Ricardo 1951 [1821]:22)

It seems reasonable, then, to assume that Ricardo accepted Smith’s theory of the inequality of wages which was based on the assumption that labour is homogeneous before workers make their occupation choices. Ricardo apparently did not intend to explain market prices by market wages, but by the real sacrifices of labour. His measurement of the quantity of labour by the wages of labour is not, therefore, merely a circular argument. Presumably Ricardo assumed that labour was homogeneous; otherwise, the labour theory of value is nonsense, because different qualities of labour would be incommensurable.

Fourth, the quantity of labour employed in production includes not only current labour, but also “past labour,” to repeat Petty’s phrase. In a passage that is reminiscent of Locke’s accounting for all the labour necessary to produce a loaf of bread, Ricardo traced the value of stockings back to all the labour that went into them and brought them to market.

First, there is the labour necessary to cultivate the land on which the raw cotton is grown; secondly, the labour of conveying the cotton to the country where the stockings are to be manufactured, which includes a portion of the labour bestowed in building the ship in which it is conveyed, and which is charged in the freight of the goods; thirdly, the labour of the spinner and weaver; fourthly, a portion of the labour of the engineer, smith, and carpenter, who erected the buildings and machinery, by the help of which they are made; fifthly, the labour of the retail dealer, and of many others, whom it is unnecessary further to particularize. The aggregate sum of these various kinds of labour, determines the quantity of other things for which these stockings will exchange, while the same consideration of the various quantities of labour which have been bestowed on those other things, will equally govern the portion of them which will be given for the stockings.

(Ricardo 1951 [1821]:25)

While Locke used this sort of accounting to support his labour theory of property rights, Ricardo used it as an essential part of his labour theory of value. It is in this sense that the labour theory of value comes out of, but is distinct from, Locke's labour theory of property rights. If Ricardo had continued this retrospective rationalization of the quantity of labour bestowed on the production of the things needed to make stockings, he would have found it necessary to particularize a catalogue that "would be almost impossible, at least too long, to reckon up," to quote John Locke (1988 [1690]:298). The list would carry him back to the Stone Age.⁵

Fifth, since both current and past labour contribute to the production of commodities, they both affect the value of commodities. Wages and profits both regulate prices. "It is necessary for me also to remark," clarified Ricardo,

that I have not said, because one commodity has so much labour bestowed upon it as will cost 1000*l.* and another so much as will cost 2000*l.* that therefore one would be of the value of 1000*l.* and the other of the value of 2000*l.* but I have said that their value will be to each other as two to one, and that in those proportions they will be exchanged. It is of no importance to the truth of this doctrine whether one of these commodities sells for 1100*l.* and another for 2200*l.*, or one for 1500*l.* and the other for 3000*l.*; into that question I do not at present inquire; I affirm only that their relative values will be governed by the relative quantities of labour bestowed on their production.

(Ricardo 1951 [1821]:46–7)

In this example, relative values are proportional to relative profits as well as to relative wages, which led Frank H. Knight (1965 [1935]:146n) and later Schumpeter (1954:595) to observe that it was just as admissible to say that Ricardo had a capital theory of value. Ricardo clearly thought that total production was divided into wages, profit and rent, as Table 9.2 (page 176) illustrates, but that only wages and profits regulate prices.

"According as capital is rapidly perishable, and requires to be frequently reproduced, or is of slow consumption," Ricardo (1951 [1821]: 31) continued, "it is classed under the heads of circulating, or of fixed capital," to which he added the footnote: "A division not essential, and in which the line of demarcation cannot be accurately drawn." The existing stock of fixed capital is the product of "accumulated labour," according to Ricardo (1951 [1821]:34), whereas circulating capital purchases the subsistence of labour as well as the materials and supplies that are rapidly reproduced by labour. Both current and past labour contribute to the production of commodities.

Where enterprises employ different proportions of fixed and circulating capital, market prices are no longer proportional to the labour embodied in production, as Ricardo illustrated with a numerical example of a durable machine.

Suppose that for the labour of each workman 50*l.* per annum were paid, or that 5000*l.* capital were employed and profits were 10 per cent., the value of each of the machines as well as of the corn, at the end of the first year, would be 5,500*l.* The second year the manufacturers and farmer will again employ 5000*l.* each in the support of labour, and will therefore again sell

their goods for 5,500*l.*, but the men using the machines, to be on a par with the farmer, must not only obtain 5,500*l.*, for the equal capitals of 5000*l.* employed on labour, but they must obtain a further sum of 550*l.*; for the profit on 5,500*l.* which they have invested in machinery, and consequently their goods must sell for 6,050*l.* Here then are capitalists employing precisely the same quantity of labour annually on the production of their commodities, and yet the goods they produce differ in value on account of the different quantities of fixed capital, or accumulated labour, employed by each respectively.

(Ricardo 1951 [1821]:34)

The relative value of different commodities is no longer governed by labour alone, because profits become a greater percentage of price as fixed capital increases relative to circulating capital. Commodities produced in capital intensive industries will sell for more than commodities produced in labour intensive industries, even though they employ precisely the same quantity of labour. Prices would not be proportional to the labour necessary for production.

Sixth, the longer it takes to bring a commodity to market, the higher will be its price whatever the quantity of labour embodied in it, as Ricardo illustrated with another example in which profits accumulate like compound interest.

Suppose I employ twenty men at an expense of 1000*l.* for a year in the production of a commodity, and at the end of the year I employ twenty men again for another year, at a further expense of 1000*l.* in finishing or perfecting the same commodity, and that I bring it to market at the end of two years, if profits be 10 per cent, my commodity must sell for 2,310*l.*; for I have employed 1000*l.* capital for one year, and 2,100*l.* capital for one year more. Another man employs precisely the same quantity of labour, but he employs it all in the first year; he employs forty men at an expense of 2000*l.*, and at the end of the first year he sells it with 10 per cent. profit, or for 2,200*l.* Here then are two commodities having precisely the same quantity of labour bestowed on them, one of which sells for 2,310*l.*—the other for 2,200*l.*

(Ricardo 1951 [1821]:37)

The price of each commodity equals the wages of labour plus the compound profit on capital. The longer the period of production, the greater is the accumulated profit on capital. Later, in correspondence with T.R. Malthus and J.R. McCulloch, Ricardo (1951–73:IX, 303, 330–1, 358, among other places) also discussed how the value of a full-grown oak tree or well-aged wine greatly exceeds the value of the labour originally embodied in them. The same reasoning appears in Ricardo's (1951 [1823]:IV, 358–412) "Absolute Value and Exchangeable Value." Profits contribute to the value of commodities independently of the quantity of labour employed. In the first edition of his *Principles*, he even gave an extreme example of a machine that could produce a commodity without the aid of labour. Suppose, Ricardo (1909 [1817]:27) wrote, "that this machine, without any labour whatever, could produce a certain quantity of

commodities annually.” The value of those commodities would equal the profits on the capital invested in the machine plus the amortization charge on the machine.⁶ E.Cannan (1929:176) claimed that Ricardo was weak on capital “from the beginning and he weakened more and more as time went on and criticism multiplied.” Profits were a determinant of value in his first edition.

Commodities produced in more capital intensive industries, like steel making, and those that require a longer time to bring to market, like wellaged wine, are more valuable than other commodities, even though the same quantity of labour may be employed in their production. “The difference in value,” Ricardo (1951 [1821]:37) reasoned, “arises in both cases from the profits being accumulated as capital, and is only a just compensation for the time that the profits were withheld.” Profits accumulate like compound interest as time passes, which increases the value of commodities.

Seventh, relative values will only be proportional to the labour employed in production, if wages always accounted for the same percentage of the price of every commodity; but, this would only be true if the proportions of labour and capital are the same in every industry. Ricardo recognized that this is not the case. Some industries are more capital intensive than others and some commodities take longer to bring to market than others. The fact that commodities are produced with different capital structures required Ricardo to introduce

a considerable modification to the rule, which is of universal application when labour is almost exclusively employed in production; namely, that commodities never vary in value, unless a greater or less quantity of labour be bestowed on their production, it being shown in this section that without any variation in the quantity of labour, the rise of its value merely will occasion a fall in the exchangeable value of those goods, in the production of which fixed capital is employed; the larger the amount of fixed capital, the greater will be the fall.

(Ricardo 1951 [1821]:38)

If wages rise and profits fall as a proportion of price, the value of commodities that are produced with more fixed capital or that take longer to bring to market will fall in comparison with other commodities, because compound profits accumulate to a smaller sum. Thus, his own logic forced Ricardo to modify his labour theory of value, though he did not abandon it completely. He based his theory of comparative advantage on it in Chapter 7. In his chapter on “Value and Riches, Their Distinctive Properties,” Ricardo (1951 [1821]:273) stressed the idea that value is always due to labour: “The labour of a million of men in manufactures, will always produce the same value, but will not always produce the same riches.” In his chapter “On Currency and Banks,” Ricardo (1951 [1821]: 352) also explained the value of gold and silver by “the quantity of labour necessary to produce them.” Oswald St Clair (1965 [1957]:17–59) claimed that Ricardo simply tried to minimize the importance of all the modifications that he made to his thesis that relative values are regulated by the labour embodied in them.

Ricardo’s “considerable modification” turned his labour theory of value into a cost of production theory.⁷ Profits regulate value as well as wages. Profits plus wages determine prices, but Ricardo does not have a simple adding-up theory, because the united

application of labour, capital and land determine the total product. Wages, profit and rent exhaust the total product. Frank Knight (1965 [1935]:146n) noted that for Ricardo “value is approximately proportional to labour cost, but only on the ground that capital cost is proportional to labour.” Ricardo conceded as much in a letter to Malthus:

You say that my proposition “that with few exceptions the quantity of labour employed on commodities determines the rate at which they will exchange for each other, is not well founded.” I acknowledge that it is not rigidly true, but I say that it is the nearest approximation to truth, as a rule for measuring relative value, of any I have ever heard. You say demand and supply regulates value—this, I think, is saying nothing, and for the reasons I have given in the beginning of this letter—it is supply which regulates value—and supply is itself controlled by comparative cost of production. Cost of production, in money, means the value of labour, as well as profits.

(Ricardo 1951–73:VIII, 279)

Thus, Ricardo held that his labour theory was approximately true. Schumpeter (1954:594) agreed with Ricardo when he wrote that the labour theory of value was not logically exact, but an approximation to truth. This is apparently what George Stigler (1965 [1958]:333), who was Knight’s student, meant when he referred to Ricardo’s labour-quantity doctrine as an “empirical,” as opposed to an “analytical,” labour theory of value. Mark Blaug (1978:118) has agreed with Stigler’s interpretation.

Even if commodities are produced with identical capital structures, profits are also a cost of production in the sense of Meek’s necessary costs. Both profits and wages must be paid in order to bring a commodity to market. In his chapter “On the Natural and Market Price,” Ricardo wrote:

With the rise or fall of price, profits are elevated above, or depressed below their general level, and capital is either encouraged to enter into, or is warned to depart from the particular employment in which the variation has taken place.

(Ricardo 1951 [1821]:88)

Profits and wages are both necessary costs of production in each alternative use. After an exhaustive survey and critique of the literature, Terry Peach (1993:31) speculated that, despite all the modifications Ricardo made to his labour theory of value, Ricardo came to believe “with increasing force that ‘value’ *should* mean, or be related exclusively to, quantities of labour expenditure.”

Ricardo’s measure of value

The search for an invariable measure of value by Pufendorf, Petty, Locke, Cantillon, Hutcheson and Smith had the practical objective of protecting people from the effects of inflation. They wanted a standard of value in order to preserve the income and wealth of

individuals. Smith added the theoretical objective of measuring and comparing the wealth of nations at all times and places. Ricardo had a different theoretical objective. He wanted to know which commodities rose in value and which fell when the accumulation of capital and the growth of population caused wages to rise and profits to fall.

When commodities varied in relative value, it would be desirable to have the means of ascertaining which of them fell and which rose in real value, and this could be effected only by comparing them one after another with some invariable standard measure of value, which should itself be subject to none of the fluctuations to which other commodities are exposed. Of such a measure it is impossible to be possessed, because there is no commodity which is not itself exposed to the same variations as the things, the value of which is to be ascertained; that is, there is none which is not subject to require more or less labour for its production.

(Ricardo 1951 [1821]:43–4)

For Ricardo, a perfect measure of value would always require the same quantity of labour to produce it. Even if there were such a commodity, Ricardo argued, it would not be a perfect measure of the value of other commodities that did not have the same capital structure or that could not be brought to market in the same time. If wages rose and profits fell, the value of commodities produced in capital intensive industries would fall relative to other commodities.

For the sake of exposition, Ricardo (1951 [1821]:45–6) assumed that gold had a constant quantity of labour embodied in it and that it was produced under average conditions. It fit “nearly equal distant from the two extremes, the one where little fixed capital is used, the other where little labour is employed.” Thus, if wages rose and profits fell, all commodities produced with more labour intensive methods would rise in value, while those produced under more capital intensive conditions, like oak trees, would fall. The rise in the total value of commodities produced in labour intensive industries would equal the fall in the total value of capital intensive products. Gold may, therefore, be considered a stationary measure of value.⁸

Ricardo (1951 [1821]:43) criticized Smith’s universal measure of value on the grounds that “there is no commodity which is not itself exposed to the same variations as the things, the value of which is to be ascertained; that is, there is none which is not subject to require more or less labour for its production.”

It cannot then be correct to say with Adam Smith, “that as labour may sometimes *purchase* a greater, and sometimes a smaller quantity of goods, it is their value which varies, not that of the labour which purchases them;” and therefore, “that labour *alone never varying in its own value*, is alone the ultimate and real standard by which the value of all commodities can at all times and places be estimated and compared.”

(Ricardo 1951 [1821]:16–17)

The perfect measure of value for Smith was, however, the sacrifice, toil, trouble, pain, disutility or leisure foregone of labour, not some commodity with a constant quantity of

labour embodied in it. Smith rendered the sacrifice of labour constant by assumption. Ricardo discredited Smith by confusing the real price of commodities, i.e., the labour sacrifice per unit output, Smith's universal measure of value, with the real price of labour, i.e., the wages or subsistence of labour, Smith's popular measure of value. Smith used the phrase "labour command" to refer to both of his labour measures of value.

A theory of the measurement of value is, of course, categorically distinct from a theory of the regulation or determination of relative values. If wages rose and profits fell, Ricardo's perfect measure could predict, for example, that the value of a full-grown oak tree would fall, but it could not predict whether the tree would be worth one ounce or thirty ounces of gold. The price of the oak tree is regulated by its cost of production. If the cost of production equations for every commodity are known, the relative values of all commodities can be calculated for all possible rates of wages and profits without reference to an invariable measure of value, as Léon Walras (1954 [1874–77]:248–54) demonstrated with his *numéraire*, an arbitrarily selected commodity in terms of which the values of all other commodities are reckoned.⁹

Getting rid of rent

For Ricardo (1951 [1821]:67), "rent is that portion of the produce of the earth, which is paid to the landlord for the use of the original and indestructible powers of the soil." This curious definition is apparently intended to distinguish between land and capital. Capital goods depreciate from wear, tear and obsolescence, whereas accountants commonly treated land as a fixed quantity, even though poor farming methods can exhaust the powers of the soil. This distinction is necessary for Ricardo, because the principle which regulates the rent of land differs from that which determines the profit of capital. He criticized Adam Smith for sometimes using the term rent in the popular sense, when he referred to rent as whatever is paid to the landlord, which often includes the profit on improvements to the land as well as the rent of unimproved land. This is fair comment. But, Ricardo (1951 [1821]:68) then rejected Smith's claim that "the demand for timber, and its consequent high price, in the more southern countries of Europe, caused a rent to be paid for forests in Norway;" and he asserted that Smith's landlord would only earn a rent if he were paid for the use of his land after the original timber was removed. For Smith, rent is paid for the free gifts of nature, so that the virgin forests of Norway would earn a rent, not a profit. If a landlord planted the forests, both Smith and Ricardo would call the income derived from them a profit.

The historical constancy of the quantity of land is not a necessary condition for Ricardo's theory of rent. In his chapter "On the Rent of Mines," Ricardo (1951 [1821]:85) recognized that "Mines, as well as land, generally pay a rent to their owner; and this rent, as well as the rent of land, is the effect, and never the cause of the high value of their produce." Since the minerals in a mine are exhausted as the mine is worked, they are not fixed in quantity forever. The net rental income of Ricardo's mine and Smith's virgin forest are determined by the same principles as the rent of land; but the price or present value of the mine or forest is calculated from a finite stream of net rental income, instead of a perpetual stream of rent. Ricardo cannot consistently maintain that rent is only paid for the use of an historically constant factor of production.

The rent of land arises because land is useful and scarce. Nothing is given for the gifts of nature that are abundantly available, like water and air, however useful they may be.

With a given quantity of materials, and with the assistance of the pressure of the atmosphere, and the elasticity of steam, engines may perform work, and abridge human labour to a very great extent; but no charge is made for the use of these natural aids, because they are inexhaustible, and at every man's disposal.

(Ricardo 1951 [1821]:69)

In the case of land, Ricardo gave three different conditions that affect the rent: the quantity of land, the quality of the land and the location of the land. "If all land had the same properties, if it were unlimited in quantity, and uniform in quality, no charge could be made for its use," Ricardo (1951 [1821]:70) wrote, "unless where it possessed peculiar advantages of situation." Quality and situation differentiate parcels of land, so that each quality of land and each location of land should be treated as a separate input, as Walras (1954 [1874–77]:409) graphically illustrated. Land is heterogeneous. Each quality and each location earn a rent only if each is useful and scarce.

Ricardo began his theory of rent with a hypothetical account of the origin of society, which Smith called the early and rude state of society and which Hobbes and Locke called the state of nature. Ricardo had a slightly different conception.

On the first settling of a country, in which there is an abundance of rich and fertile land, a very small proportion of which is required to be cultivated for the support of the actual population, or indeed can be cultivated with the capital which the population can command, there will be no rent; for no one would pay for the use of land, when there was an abundant quantity not yet appropriated, and, therefore, at the disposal of whosoever might choose to cultivate it.

(Ricardo 1951 [1821]:69)

For Smith (1976 [1776]:161), all land was appropriated long before it was all cultivated; and, indeed, the landlord "sometimes demands rent for what is altogether incapable of human improvement." Once all the land is appropriated, it is no longer a free good no matter how abundant it may be. Landlords, Smith (1976 [1776]:67) wrote, "demand a rent even for its natural produce." Private ownership makes land artificially scarce even where it is abundant and uncultivated. It is in this sense that Locke, Cantillon and Smith considered rent to be a monopoly price.¹⁰

For Ricardo, rent does not arise until all the best land has been cultivated, so that society must bring poorer land into cultivation in order to feed the population. Continuing his hypothetical history of mankind, Ricardo described how

When in the progress of society, land of the second degree of fertility is taken into cultivation, rent immediately commences on that of the first

quality, and the amount of that rent will depend on the difference in the quality of these two portions of land.

(Ricardo 1951 [1821]:70)

See Table 9.1 for one of Ricardo's numerical examples of how diminishing returns occurs in agriculture. As successive doses of labour plus capital are taken into production, their marginal product declines: 180, 170, 160, 150, 140. The most productive land produces 180 quarters of corn for the first dose of labour plus capital employed on it. As population grows, the margin of cultivation must be extended to feed the people. When inferior land comes into production, which yields only 170 quarters, the superior land provides a rent of ten quarters to the landlord. As the third quality of land, which produces only 160 quarters, enters production, the proprietors of superior land can charge a rent equal to the amount by which production on their land exceeds the product of marginal land. When the third quality of land comes into production, the best land rents for 20 quarters and the second best land rents for ten quarters of corn.

The marginal cost of production rises as inferior land enters production, because the same expenditure yields a smaller output. Ricardo assumed that each dose of labour plus capital costs £720, so that the marginal cost of the last quarter of corn increases from £4.00 to £4.24 to £4.50 and so on, as the pressure of population extends the margin of cultivation. Therefore, the price of corn rises. Corn would not be grown unless the farmer and the labourer were paid as much as they could earn elsewhere. Rent on the more productive land rises as inferior lands come into cultivation. On the assumption that the subsistence of the labourer equals three quarters of corn plus £12 of manufactured goods per year, the wages of labour rise with the price of corn.

It often happens that before inferior lands are brought into production, Ricardo (1951 [1821]:71) wrote, "capital will be preferably

Table 9.1 Diminishing returns, rent and wages^a

<i>Marginal product in quarters of corn</i>	<i>Rent in quarters of corn</i>	<i>Price of corn at marginal cost</i>	<i>Wages at three quarters of corn + £12</i>
180	0	£4.00	£24.00
170	10	£4.24	£24.71
160	20	£4.50	£25.50
150	30	£4.80	£26.40
140	40	£5.14	£27.43

Note

a Ricardo (1951 [1821]:103), with pounds, shillings and pence converted to pound and new pence for the modern reader. Marginal cost equals £720 divided by the marginal product. An imperial quarter=8 bushels.

employed on the old land, and will equally create a rent, because rent is always the difference between the produce obtained by the employment of two equal quantities of capital and labour.” The poorest quality of land in production is called the extensive margin of cultivation, whereas the last dose of labour plus capital applied to land already in production is called the intensive margin of cultivation.

As more capital and labour are employed on old land and as more new land is cultivated, the cost of production rises on both the intensive margin of cultivation of old land and the extensive margin of cultivation of new land. As a consequence, the price of food rises, which Ricardo made clear in a passage that sounds like Smith.

Corn is not high because a rent is paid, but a rent is paid because corn is high; and it has been justly observed, that no reduction would take place in the price of corn, although landlords should forego the whole of their rent. Such a measure would only enable some farmers to live like gentlemen, but would not diminish the quantity of labour necessary to raise raw produce on the least productive land in cultivation.

(Ricardo 1951 [1821]:74–5)

On the margin of cultivation, the price of food is regulated by the wages of labour and the profit on capital. Since marginal land receives no rent, rent is not a determinant of price. In this way, Ricardo got rid of rent.

In principle, all the rent of land could be taxed away without affecting production. The consumer would pay the same price before the tax and after the tax, because the labour and capital on the margin of cultivation must be paid whether land is taxed or not. “Rent then, it appears,” wrote Ricardo (1951 [1821]:114), “always falls on the consumer, and never on the farmer.” During the course of the nineteenth century, the idea of financing government with a tax on land had many advocates, not least John Stuart Mill (1965 [1848]) and Henry George (1966 [1879]), though David Ricardo, as we shall see, was opposed to a disproportionate tax on land.

As society progresses, “the landlord is doubly benefited,” Ricardo (1951 [1821]:83) concluded: “First he obtains a greater share, and secondly the commodity in which he is paid is of greater value.” The tendency for landlords to claim a growing proportion of the national product could be offset by improvements to agriculture, such as improved machinery, crop rotation, better manure and new crops, all of which would tend to reduce the quantity of labour necessary for production and to reduce the price of corn.¹¹

Despite all his criticisms of Smith’s theory of rent, Ricardo followed Smith’s framework for analysing rent. First, the doctrine of Ricardian rent was a great improvement over Smith’s theory. The intensive margin provides a cleaner theory of rent than the extensive margin, because it arises from applying successive doses of labour plus capital to a fixed quantity of land of a uniform quality. It is a precursor of the neoclassical marginal productivity theory. Adam Smith is partly correct about the extensive margin of cultivation. Land is almost everywhere appropriated and made private property before it is cultivated. Uncultivated land is not free. Landlords will charge a rent for the use of poor, waste, extramarginal, uncultivated land.

Second, Ricardo accepted Smith’s argument that the rent is a necessary cost of production for any single crop, so that it cannot be taxed away. Ricardo (1951

[1821]:252) praised Smith on this point and quoted him at length: “Adam Smith’s argument is so able a statement of the view which I take of the subject of the tax on malt, and every other tax on raw produce, that I cannot refrain from offering it to the attention of the reader.” Smith (1976 [1776]:892) had written:

The rent and profit of barley land...must always be nearly equal to those of other equally fertile and equally well-cultivated land. If they were less, some part of the barley land would soon be turned to some other purpose; and if they were greater, more land would soon be turned to the raising of barley.

(Smith 1976 [1776]:892)

In those cases where taxes are proportional to the aggregate produce of land, Smith (1976 [1776]:836) also claimed such taxes “are in reality taxes upon rent.” Ricardo modified this idea. He thought that a tax on any commodity would raise its price, provided it was produced under competitive conditions. In agriculture, for example, the cost of production on the margin of cultivation determines the price of raw produce, so that, for Ricardo (1951 [1821]:157), “A tax on raw produce would not be paid by the landlord; it would not be paid by the farmer; but it would be paid, in an increase in price, by the consumer.” This suggests a perfectly inelastic demand curve for raw produce, because the quantity demanded and marginal cost of production do not fall as the price rises. However, Ricardo (1951 [1821]:173) accepted Smith’s doctrine that a tax on rent or a tax on land “would fall wholly on landlords, and could not be shifted to any class of consumers.”

Third, Ricardo also accepted the theory that rare wines sell at a monopoly price, as Smith had claimed. Ricardo (1951 [1821]:250) agreed with this conclusion, but he gave another explanation for the monopoly of rare wines: “their quantity cannot be increased, and their price is limited by the extent of the power and the will of the purchasers.” Ricardo hit upon a nice distinction between a monopoly profit and the rent of land. A monopoly profit arises from exploiting demand, whereas the rent of land arises from the conditions of supply. It is not at all clear from Ricardo’s account, however, that rare wines sold under monopoly conditions. He did not claim that the vineyards restrict their output to raise price. If the vineyards push the intensive margin of cultivation up to the point where price equals marginal cost, consumers would pay at least part of a tax.¹²

The doctrine of Ricardian rent has come in for its share of criticisms. Henry Sidgwick (1883:304n) observed that Ricardo had three theories of rent: an historical theory, a static theory and a dynamic theory that predicts the future. He recommended abandoning the historical theory. It described how land came to be scarce. This aspect of Ricardo’s theory is backward-looking. As Vilfredo Pareto (1964 [1896–97]:II, 109–19) and Frank Fetter (1977 [1901]:329–30) observed, Ricardo’s theory involves comparing rent under different sets of initial conditions—a new country and an old country, for example. If the initial conditions change, all gains are unexpected, and the rent of land is indistinguishable from any other windfall. Rent emerges not only as an unearned increment, but also as an unexpected increment. Anyone who buys a piece of land in the new state of equilibrium pays the present value of the proceeds expected from it, exactly as if he were purchasing a capital good. Any growth that is expected in rental income

would be reflected in the price of land. A neoclassical analysis of Ricardian rent appears in Chapter 11: Classical relics in neoclassical thought.

The Iron Law of Wages

Ricardo derived his theory of wages from *An Essay on the Principle of Population* by T.R.Malthus (1986 [1798]:8–9), who based his book on three critical assumptions: (1) “that food is necessary for the existence of man,” (2) “that the passion between the sexes is necessary, and will remain nearly in its present state” and (3) “that the power of population is indefinitely greater than the power of the earth to produce subsistence for man.” These assumptions led Malthus (1986 [1798]:9) to conclude: “Population, when unchecked, increases in a geometrical ratio. Subsistence increases in an arithmetical ratio.” While his ratios may have been more of a literary device than a scientific proposition, he thought that the tendency of population to grow more rapidly than subsistence would hold the wages of labour close to subsistence, though he recognized that the subsistence wage varies from class to class, from nation to nation and from age to age. The tendency of wages to fall to subsistence became known as the Iron Law of Wages. Ricardo accepted and thought highly of the Malthusian population theory. In his *Principles*, Ricardo (1951 [1821]: 398) stated “I am happy in the opportunity here afforded me of expressing my admiration.”

According to Ricardo (1951 [1821]:93), labour like any other commodity has a natural price and a market price. “The natural price of labour is that price which is necessary to enable the labourers, one with another, to subsist and to perpetuate their race, without either increase or diminution.” Ricardo (1951 [1821]:93) defined subsistence as “the quantity of food, necessities, and conveniences become essential to him from habit.” Population growth stops at subsistence. The market price of labour may be above or below the natural price. “When the market price of labour exceeds its natural price,” Ricardo (1951 [1821]:94) wrote, “the condition of the labourer is flourishing and happy.” Labourers will marry early and have large families, but the growth of population will tend to push the market wage back to subsistence, and perhaps even below it.¹³ “When the market price of labour is below its natural price,” Ricardo continued,

the condition of the labourers is most wretched: then poverty deprives them of those comforts which custom renders absolute necessities. It is only after their privations have reduced their number, or the demand for labour has increased, that the market price of labour will rise to its natural price, and that the labourer will have the moderate comforts which the natural rate of wages will afford.

(Ricardo 1951 [1821]:94)

“However much the market price of labour may deviate from its natural price,” Ricardo (1951 [1821]:94) concluded, “it has, like commodities, a tendency to conform to it.” This gloomy prospect for the working poor led Thomas Carlyle (1983 [1850]:56) to call economists the “Respectable Professors of the Dismal Science.” Ricardo did not view the

future as grimly as Carlyle's epithet suggests. He qualified the Iron Law with four conditions.

First, the demand for labour depended upon the accumulation of capital, which Ricardo (1951 [1821]:95) defined as the "food, clothing, tools, raw materials, machinery &c. necessary to give effect to labour." Unlike neoclassical theory, where the demand for labour depends upon the expected demand for production, Ricardo thought of the demand for labour in terms of a wages fund, a previously accumulated stock of things. The doctrine of the wages fund is not totally without merit. Since most people worked in agriculture, it is obvious that a stock of foodstuffs and other supplies must exist to sustain the population until the harvest, even though the crop would only be planted in the expectation of selling it.

In an improving society, Ricardo claimed that the market rate of wages may be above the natural rate for an indefinite period,

for no sooner may the impulse, which an increased capital gives to a new demand for labour be obeyed, than another increase of capital may produce the same effect; and thus, if the increase of capital be gradual and constant, the demand for labour may give a continued stimulus to an increase of people.

(Ricardo 1951 [1821]:95)

The market rate of wages depends on a race between capital accumulation and population growth. Malthus had calculated that "under favourable circumstance population may double in twenty-five years," but Ricardo (1951 [1821]:98) thought, "under the same favourable circumstances, the whole capital of a country might possibly be doubled in a shorter period." The market wage could, therefore, steadily rise.

Second, as society progresses and population grows, the margin of cultivation must be extended in order to feed the population. The extra food requires more labour to produce, which raises the price of corn, the basic subsistence of the labourer. The natural rate of wages tends to rise, as Table 9.1 illustrates. "As, however, the improvements in agriculture, the discovery of new markets, whence provisions may be imported," Ricardo (1951 [1821]:93) explained, "may for a time counteract the tendency to a rise in the price of necessities, and may even occasion their natural price to fall." Thus, technical progress and free trade may offset the tendency of wages to fall to subsistence.

Third, the natural price of labour is not necessarily fixed for all time. "It varies at different times in the same country, and very materially differs in different countries," Ricardo (1951 [1821]:96–7) reasoned, following Malthus, because "it essentially depends on the habits and customs of the people." Human behaviour may change.

The friends of humanity cannot but wish that in all countries the labouring classes should have a taste for comforts and enjoyments, and that they should be stimulated by all legal means in their exertions to procure them. There cannot be a better security against a superabundant population.

(Ricardo 1951 [1821]:100)

While Ricardo did not elaborate on how the “comforts and enjoyments” of life tend to mitigate against poverty, he no doubt had in mind the discussion by Malthus of how the population principle varies from class to class in England. A gentleman would refrain from marriage if it reduced him to the status of a moderate farmer or lower class tradesman; and, Malthus (1986 [1798]:27) continued, “the sons of tradesmen and farmers are exhorted not to marry...til they are settled in some business, or farm, that may enable them to support a family.” If the poor could enjoy a substantial increase in their standard of living, the Iron Law of Wages might be broken.

Fourth, Malthus and Ricardo thought the Poor Laws ran counter to the best interest of both society and the poor. “Instead of making the poor rich,” Ricardo (1951 [1821]:106) wrote, “they are calculated to make the rich poor.” The Poor Laws cause the funds needed for the subsistence of the poor to grow over time. They had been in effect for so long a time, however, that they had shaped the habits of the poor and had made the poor dependent on the assistance of their parish. Since the laws could not be repealed without causing “overwhelming distress,” Ricardo (1951 [1821]:106) maintained that “their abolition should be effected by the most gradual steps.” Classical economists usually advocated gradual changes in policy regimes. After their repeal, Ricardo (1951 [1821]:105) contended that “like all other contracts, wages should be left to the fair and free competition of the market, and should never be controlled by the interference of the legislature.” The policy of *laissez-faire* should apply to the labour market.

The Iron Law of Wages did not hold true for the remainder of the nineteenth century, precisely because three of Ricardo’s qualifications escaped from the pound of *ceteris paribus*. Capital accumulated more rapidly than population grew. Technical progress in agriculture reduced the cost of producing food, while the repeal of the Corn Laws, for which Ricardo had fought, allowed cheaper grains to flow in from abroad. Finally, the birth rate fell as people moved from the country to the city. The reform of the Poor Laws did not follow the policy of gradual removal advocated by Malthus and Ricardo. Destitution and pauperism remained serious problems into the twentieth century.¹⁴

The falling rate of profits

Ricardo divided the total output of society into three parts: wages, profits and rent. Since the Iron Law of Wages fixes real wages at subsistence and since rent rises with diminishing returns in agriculture, profits must evidently fall as society progresses, but Ricardo presented a subtler theory of the falling rate of profits in his *Principles*. He based it on his theory of value.

Supposing corn and manufactured goods always to sell at the same price, profits would be high or low in proportion as wages were low or high. But suppose corn to rise in price because more labour is necessary to produce it; that cause will not raise the price of manufactured goods in the production of which no additional quantity of labour is required. If, then, wages continued the same, the profits of manufacturers would remain the

same; but if, as is absolutely certain, wages should rise with the rise of corn, then their profits would necessarily fall.

(Ricardo 1951 [1821]:110–11)

Profits fall in manufacturing as the rise in corn prices raises wages. The rate of profits falls throughout the economy, because capitalists reallocate their capital from industry to agriculture until the rate of profits gravitates to equality everywhere.

The doctrine of Ricardian rent states how the extra output attributable to successive doses of labour plus capital declines on the margin of cultivation. This raises the marginal cost of producing corn, as illustrated in Table 9.1 above. Ricardo assumed in his example that labourers spend half their wages on corn at subsistence, so that the natural wage of labour must rise in order to allow labourers to perpetuate their numbers. Table 9.2 shows how the rise in the price of corn increases the revenue of a farmer who grows 180 quarters of corn and how the nominal wages paid to ten labourers must increase to keep them at subsistence. Landlords gain twice, because not only does rent go up in quarters of corn, but the price of corn rises, too. Profits decline because rent takes a bigger share of output.

The decline of profits in Table 9.2 does not depend on the rise in the wages in manufacturing. It applies to agriculture only. In his *Essay on Profits*, Ricardo (1951 [1815]:18) wrote:

Profits of stock fall only, because land equally well adapted to produce food cannot be procured; and the degree of the fall of profits, and the rise of rents, depends wholly on the increased expense of production.

(Ricardo 1951 [1815]:18)

Profits fall because rent claims a larger proportion of agricultural output as the margin of cultivation extends to inferior lands. Competition tends to equalize the rate of profits between agriculture and manufacturing, subject to such differences as may exist in their riskiness and agreeableness. L.L.Pasinetti (1977:8–12) depicts this as a “one sector model,” since the manufacturing sector is not essential to it.

On the supposition that the farmer originally employed £3,000 of capital, Ricardo (1951 [1821]:117) calculated that, as society progresses, the rate of profit would fall as follows: 16.0 per cent, 15.7 per cent, 15.5 per cent, 15.2 per cent and 14.8 per cent. Since Ricardo assumed that manufacturing was a constant cost industry, industrialists cannot raise

Table 9.2 Wages, rent and profit for a farm initially on the margin^a

<i>Revenue on 180 quarters of corn</i>	<i>Wages for 10 labourers</i>	<i>Profit</i>
£720.00	£240.00	£0.00 £480.00
£762.35	£247.06	£42.35 £472.94

£810.00	£255.00	£90.00	£465.00
£864.00	£264.00	£144.00	£456.00
£925.71	£274.29	£205.71	£445.71

Note

a Ricardo (1951 [1821]:113–16) with pounds, shillings and pence converted to pounds and new pence for the modern reader. Based on Table 9.1.

prices. The rise in wages reduces the profits of manufacturers. Thus, profits fall in both agriculture and manufacturing. They fall until

the very low rate of profits will have arrested all accumulation, and almost the whole produce of the country, after paying labourers, will be the property of the owners of land and the receivers of tithes and taxes.

(Ricardo 1951 [1821]:120–1)

Without advances in technology or the importation of cheaper food, the economy would approach the stationary state, from which, Ricardo (1951 [1821]:108) wrote, “I trust we are yet far distant.” Smith, Ricardo and Marx all predicted a falling rate of profit as society progresses.

Money and trade

David Ricardo is best known today for the economic policies that are popularly called monetarism and globalization. His monetary theory and policy became the fundamental arguments for the nineteenth century gold standard, which lasted until the beginning of World War I. The attempt to revive it after the war did not succeed, so that it was ultimately replaced by the arrangements of Bretton Woods Conference in 1944. His theory of comparative advantage became the foundation of the policy of free trade. While Adam Smith and other economists proposed similar policies, they were eclipsed by Ricardo. The literature on the theory and policy of money and trade is so enormous that no attempt will be made to review it here.¹⁵ Ricardo’s theories of money and trade are relevant here, because he stated them in terms of the labour theory of value.

Ricardo (1951 [1821]:352) repeated his simple labour theory of value in his chapter “On Currency and Banks,” where he declared that “Gold and silver, like all other commodities, are valuable only in proportion to the quantity of labour necessary to produce them, and bring them to market.” The labour cost of producing gold limits the demand for it. “The demand for money is regulated entirely by its value,” Ricardo (1951 [1821]:193) explained, so that “if it were of half the value, double the quantity would be required.” Where gold is money, a medium of exchange, the value of gold is the reciprocal of the commodity price level. If the value of money falls by half, the commodity price level would double, that is, inflation would be 100 per cent. If all prices, including all incomes, change proportionately, money has no real effect on the economy. People may have twice as much gold as before, but they can only buy exactly the same basket of commodities as before. In this case, money is said to be “neutral.”

While it may be tempting to conclude that Ricardo believed in the neutrality of money, nothing could be further from the truth. His first publications on economics concerned the operations of the Bank of England, which, he claimed, over-issued their currency after the Restriction Act of 1797 released the Directors of the Bank from the obligation of redeeming their bank notes in specie on demand. The Bank issued currency when they made loans to their customers, on which they charged interest. Before 1797, anyone who received their bank notes could demand that the Bank convert them into gold or silver coin. If the Bank failed to meet these demands, the Directors would be bankrupt. For this reason, the Bank had always been careful to keep their coffers amply stocked with bullion. In 1797, fear of a French invasion caused a panic and a run on the banking system. To avoid bankruptcy, the Government released the Bank from the legal requirement of redeeming their notes in gold or silver coin. Without the requirement of convertibility, the bank could lend more notes to their customers and earn more interest, thereby, increasing their profits. The Bank was then a private corporation.

In an analysis that Wicksell would later develop, Ricardo explained how the demand for bank loans depended on a comparison between the rate of interest at which the Bank lends and the rate of profit that businesses could earn on the borrowed money. The market rate of interest reflected the rate of profits.

If they charge less than the market rate of interest, there is no amount of money which they might not lend,—if they charge more than that rate, none but spendthrifts and prodigals would be found to borrow of them.

(Ricardo 1951 [1821]:364)

If the Bank charged less than the market rate of interest, this would not alter the rate of profits. It would, Ricardo (1951 [1821]:364) argued, “alter only the value of money which they thus issued.” As the Bank increased the quantity of money in circulation, they would cause inflation, but the effect was far from neutral.

In his pamphlet on “The High Price of Bullion,” Ricardo (1951 [1810]) explained how the price of gold rose as the paper money depreciated. It depreciated because the Bank over-issued it, which prompted Ricardo to express outrage at the directors of the Bank.

The Bank directors have imposed upon these holders of money all the evils of a maximum. To-day it is their pleasure that 4*l* 10*s* shall pass for 3*l* 17*s* 10½*d*, to-morrow they may degrade 4*l* 15*s* to the same value, and in another year 10*l* may not be worth more. By what an insecure tenure is property consisting of money or annuities paid in money held!

(Ricardo 1951 [1810]:95–6)

Ricardo believed that the security of property was a sacred trust on which the survival of civilization depended. Money was not neutral, because inflation reduced the value of all assets fixed in terms of money. It redistributed income and wealth from bondholders, for example, who were Ricardo’s customers, to debtors. If money were neutral, Ricardo would have had no interest in monetary theory or policy. Once the value of money was re-established at its ancient standard, Ricardo recommended and Parliament agreed that

bank notes be convertible into gold on demand. This was the fundamental principle of the gold standard.

The theory of comparative advantage was the fundamental principle of free trade. Ricardo illustrated comparative advantage with the labour theory of value, though it can easily be stated in terms of modern theory. He compared two countries, England and Portugal, producing two commodities, cloth and wine. In the case of England, Ricardo (1951 [1821]: 135) supposed that to produce “cloth may require the labour of 100 men for one year; and if she attempted to make the wine, it might require the labour of 120 men for the same time,” whereas, in the case of Portugal, to produce wine “might require only the labour of 80 men for one year, and to produce the cloth in the same country, might require the labour of 90 men for the same time.” As he stated the problem, Portugal has an absolute advantage in the production of both cloth and wine, because Portugal can produce a unit of both commodities with less labour than England. Why would Portugal trade if both commodities can be made cheaper at home?

The top panel in Table 9.3 shows the number of labourers that are needed to produce one unit of cloth and one unit of wine in England and Portugal, respectively. The middle panel shows the quantities produced in

Table 9.3 Comparative advantage^a

A Labourers necessary to produce each unit of output

	Cloth	Wine
England	100	120
Portugal	90	80

B Output before trade

	Cloth	Wine
England	1	1
Portugal	1	1
Total output	2	2

C Output after trade

	Cloth	Wine
England	$2\frac{1}{6}$	0
Portugal	0	$2\frac{1}{8}$
Total output	$2\frac{1}{6}$	$2\frac{1}{8}$

Source: Adapted from Ricardo (1951 [1821]:135).

the absence of trade. For both countries combined, the total output of each commodity is two units. The bottom panel shows the effect of specialization and trade. England can produce cloth relatively cheaper than Portugal, the relative cost being $\frac{5}{6}$ ths versus $\frac{9}{8}$ ths. Portugal can produce wine relatively cheaper than England, the relative costs being $\frac{8}{9}$ ths versus $\frac{5}{6}$ ths. If England specializes in cloth by shifting 120 labourers out of wine production into cloth production, cloth production can increase to $2\frac{1}{6}$ th units. Similarly,

if Portugal specializes in wine by moving 90 labourers from the production of cloth to wine, wine output can rise to $1\frac{1}{8}$ th units. Now, the combined total output of both commodities is greater than before trade. While the total labour embodied in production is the same before and after trade, Ricardo (1951 [1821]:128) observed that specialization and trade tend “to increase the mass of commodities, and therefore the sum of enjoyments.” Thus, free trade increases the wealth of nations.¹⁶

The theory of comparative advantage presented by Ricardo is based on several simplifying assumptions. First, he assumed that commodities are produced at a constant cost, though production under conditions of diminishing returns would not affect his general conclusion. Second, he supposed that labour and capital cannot readily move from one country to another. Third, the comparative advantage of different countries arises from differences in their cost of production. If relative costs were everywhere the same, no gain from trade could occur. Countries have different costs, Ricardo (1951 [1821]:134) thought, because they have different natural and acquired endowments, which determine “that wine shall be made in France and Portugal, that corn shall be grown in America and Poland, and that hardware and other goods shall be manufactured in England.” Poor countries will tend to specialize in labour intensive industries, Ricardo (1951 [1821]:349) argued, whereas in rich countries “capital will naturally flow, when trade is free, into those occupations wherein the least quantity of labour is required to be maintained at home.”¹⁷

Taxing the “toil” of the landlord and the “fruits” of the capitalist

Ricardo added the “toil” of the landlord to the “toil” of the labourer discussed by Locke and Smith. In addition, he thought that “the capitalist was entitled to enjoy unmolested the fruits of his capital, his skill, and his enterprise.” Good government required that the capitalist, the landlord and the labourer should all be entitled to whatever their labour or property produced. This was fundamental to the doctrine and ideology of eighteenth and nineteenth century liberalism.

John Locke justified private property on the grounds that labour is entitled to fruits of its labour. If the value of commodities is almost exclusively due to labour, the rent of land and the profits of capital may appear to be unfair and unjust. This line of reasoning gave rise to the doctrine that Property is Theft, which Proudhon made famous. Ricardo accepted the principle that all people were entitled to what they produce, but he extended this principle to the sacrifices of the landlord and the capitalist.

In the case of a tax on rent, he accepted Smith’s argument that such a tax would not affect production, but Ricardo thought it would be unjust to tax land exclusively. He turned Smith’s maxim that taxes should be assessed according to the ability to pay against him.

It must be admitted that the effects of these taxes would be such as Adam Smith has described; but it would surely be very unjust, to tax exclusively the revenue of any particular class of a community. The burdens of the State should be borne by all in proportion to their means: this is one of the four maxims mentioned by Adam Smith, which should govern all

taxation. Rent often belongs to those who, after many years of toil, have realised their gains, and expended their fortunes in the purchase of land or houses; and it certainly would be an infringement of that principle which should ever be held sacred, the security of property, to subject it to unequal taxation.

(Ricardo 1951 [1821]:204)

This adds the “toil” of the landlord to the “toil” of the labourer in the Lockean theory of property rights. Ricardo’s (1951–73 [1820]:V, 68–9) real concern, however, was “the sacredness of property, which constituted the great security of society.” He thought a disproportionate tax on property would be a disincentive to industry.

He explained this principle more thoroughly in a posthumous article in the *Scotsman*, in which he advocated extending the suffrage to more people. He stopped short of endorsing universal suffrage, because he thought the franchise should only be extended to people who believed that property rights were sacred. To do otherwise, Ricardo wrote, would sacrifice good government and economic prosperity.

The man of a small income must be aware how little his share would be if all the large fortunes in the kingdom were equally divided among the people. He must know that the little he would obtain by such a division could be no adequate compensation for the overturning of a principle which renders the produce of his industry secure. Whatever might be his gains after such a principle had been admitted would be held by a very insecure tenure, and the chance of his making any future gains would be greatly diminished; for the quantity of employment in the country must depend, not only on the quantity of capital, but upon its advantageous distribution, and, above all on the conviction of each capitalist that he will be allowed to enjoy unmolested the fruits of his capital, his skill, and his enterprise. To take from him this conviction is at once to annihilate half the productive industry of the country, and would be more fatal to the poor labourer than to the rich capitalist himself.

(Ricardo 1951–73 [1823]:V, 501)

Ricardo did not even suggest that the whole produce of society should belong to the labourer. Good government required that the capitalist, the landlord and the labourer should all be entitled to what they produce. He generalized the real sacrifices theory of property rights.

Conclusion

Ricardo misinterpreted Adam Smith’s theory of value, because he did not recognize the old distinctions between the origin, measure and regulation of value. Smith held that labour produced all commodities from the things found in nature. His labour theory of the origin of value replaced the Aristotelian theory based on utility, which he probably learned from Francis Hutcheson. Smith maintained that the labour necessary to catch a

beaver and a deer regulated their relative values in primitive society, but he turned to a cost of production theory for civil society, where profit and rent became component parts of price. Ricardo seized upon the example of the beaver and the deer and claimed that the quantity of labour bestowed on the production of different commodities regulated their relative values in civil society. He included the labour embodied in the capital goods used up in production, as Locke did in his example of the loaf of bread and Smith in his example of the woollen coat. He did not and could not deny that profits affected relative values, so his logic led him to a cost of production theory.

His theory of value influenced both the classical and neoclassical economists who came after him. Samuel Hollander (1985) has documented the pervasive influence of Ricardo on J.S.Mill. His *Principles of Political Economy* (1848) became the main textbook in classical economics for the second half of the nineteenth century. Chronologically and theoretically, it stands between the *Principles* of Ricardo (1821) and the *Principles* of Alfred Marshall (1890), which was the leading neoclassical textbook for the first half of the twentieth century. Ricardo's theories of diminishing returns in agriculture and constant returns in manufacturing became an increasing supply price and a constant supply price in the hands of Marshall, who explained the value of commodities by their marginal utility as well as their cost of production. The doctrine of Ricardian rent attracted such strange bedfellows as Léon Walras and Henry George. Alfred Marshall extended it to cover the notions of producers' surplus and the quasirent on existing capital goods. Marshall, Wicksteed, Barone and J.B. Clark, among others, generalized Ricardo's diminishing marginal product on the intensive margin of cultivation into the marginal productivity theory of the demand for all factor services. J.B.Clark also tried to prove that the marginal productivity theory justified private property in capital, but he did not address how the wealthy came into possession of their property. Marx (1904 [1859]:285–7) observed that the real basis for the distribution of income is the distribution of property, which is a matter of economic history, not economic theory. Marx continued Ricardo's quest for a labour embodied theory of value in exchange for civil society, where he claimed that capitalists earn their profits by exploiting labour. Finally, Ricardo's contributions to theories of money and trade continue to be relevant to this day. Few economists have had a greater influence on the history of economic thought than David Ricardo.

10

Karl Marx

The exploitation of labour

A brief life of Karl Marx

Karl Marx (1818–83) was born in Trier, Prussia, to a middle class professional family.¹ Both his father, Heinrich, and his mother, Henrietta, were originally Jewish and came from long lines of rabbis. Before Karl was born, however, his father converted to Christianity, perhaps to facilitate his career as a lawyer. In 1835, after graduating from high school in Trier, Marx matriculated at the University of Bonn, where he studied the humanities and art. The next year he transferred to the University of Berlin, which brought him into contact with Hegelian philosophy. He began as a student of law, but eventually turned to philosophy and became associated with the Young Hegelians, a group of political radicals who incurred the displeasure of the Prussian state. While at Berlin, Marx studied history and law, Greek and Latin as well as ancient and modern philosophy. He later published books, pamphlets and articles in German, English and French that were spiced with passages in Greek, Latin and Italian. He finished his academic career when the University of Jena, reputed to be easier than Berlin, accepted his doctoral dissertation in 1841.

Since a teaching position was not a possibility, given his political views, Marx turned to journalism. In 1842, he found himself editor of the *Rheinische Zeitung*, in the office of which he first met Friedrich Engels. Due to the censorship and pressure of the Prussian state, Marx left the news-paper, but continued his philosophical and political writing. After marrying Jenny von Westphalen, he moved to Paris, where he wrote *The Economic and Philosophic Manuscripts of 1844*. They reveal that he had taken up the serious study of economics, based primarily on Adam Smith, whom Marx followed closely.² “What is capital?” Marx (1964 [1844]:78) asked. “A certain quantity of *labour stocked* and stored up,” according to Smith. Therefore, Marx concluded: “Capital is *stored up labor*”

He was banished from Paris in 1845 and move to Brussels, where he began his long collaboration with Engels. In *The German Ideology*, written in 1845–46, but not published until much later, they introduced their materialist conception of history. In contrast to the idealist view of history, Marx and Engels (1970 [1846]:58) argued that “the real *ground* of history ...does not explain practice from the idea but explains the formation of ideas from material practice.... This conception of history depends on our ability to expound the real process of production, starting out from the material production of life itself.” “Life is not determined by consciousness,” wrote Marx and Engels (1970 [1846]:47), “but consciousness by life.” The Marxian theory of history became the organizing principle on which they based most of their work.

In the years leading up to the Revolution of 1848, Marx and Engels became increasingly active in polemical disputes with moderate socialists like the Frenchman Pierre Joseph Proudhon, whose book with the subtitle, *The Philosophy of Poverty*, Marx criticized in his *The Poverty of Philosophy* (1963 [1847]). Their political agitation against the established order in Europe reached its peak with the publication of *The Manifesto of the Communist Party* (1977 [1848]). It called for the revolutionary overthrow of the ruling bourgeoisie by the propertyless proletariat. The *Manifesto* expressed the total vision of Marxism: historical, philosophical, sociological, economical, political. Marx and Engels actively participated in the revolution of 1848 in Germany, which inevitably failed. Afterwards they moved to England.

Engels joined his father's firm of Ermen and Engels in Manchester, while Marx lived in London where he studied at the British Museum. The only regular income that Marx received was from the *New York Daily Tribune*, published by Horace Greeley and edited by Charles A. Dana. Marx and Engels served as their European correspondents from 1851 to 1862. Together they published 487 articles for the *Tribune*, most of them by Marx, many by Engels and a dozen jointly.³ Engels also helped Marx financially, though the family suffered from poverty. During this period of his life, Marx devoted his energies to the study of political economy. He wrote the *Grundrisse (Foundations of the Critique of Political Economy)* in 1857–58, published *A Contribution to the Critique of Political Economy* in 1859 and compiled the three volume *Theories of Surplus Value* in 1861–63. These books and notebooks provided background for his major work, *Capital*, Volume I of which appeared in 1867. Volumes II and III were edited and published posthumously by Engels in 1885 and 1894, respectively. *Capital* applies the economic theory inherited from Adam Smith and David Ricardo to capitalist society, in order to explain the dynamic historical forces that Marx thought would ultimately produce the crisis and collapse of capitalism.

The theory of history

Marx's economic theory forms part of his theory of history, sometimes called historical materialism, dialectical materialism, the materialist conception of history or the economic interpretation of history.⁴ The dialectical method came from Hegel, of whom Marx openly declared himself a pupil; but Hegel was an idealist, not a materialist, as Marx explained.

My dialectic method is not only different from the Hegelian, but is its direct opposite. To Hegel, the life-process of the human brain, i.e., the process of thinking, which, under the name of "the Idea," he even transforms into an independent subject, is the demiurgos of the real world, and the real world is only the external, phenomenal form of "the Idea." With me, on the contrary, the ideal is nothing else than the material world reflected by the human mind, and translated into forms of thought.

(Marx 1961–62 [1867–94]:I, 19)

The dialectical idealism of Hegel “is standing on its head,” Marx (1961–62 [1867–94]:I, 20) thought, so “It must be turned right side up again, if you would discover the rational kernel within the mystical shell.” For Marx, social relations are closely bound to the productive forces of society. A change in the mode of production leads people to change their social relations, which Marx (1963 [1847]:109) put rather pithily in *The Poverty of Philosophy*: “The handmill gives you society with the feudal lord; the steam-mill, society with the industrial capitalist.”

He contrasted his economic theory of history with the great man theory, which supposes that the great heroes of past ages—the Alexanders, the Caesars and the Napoleons of this world—shape the course of events for all mankind. Marx did not deny that individuals can make a difference, but only within the bounds of the inherited circumstances of their society. In *The Eighteenth Brumaire of Louis Bonaparte*, Marx wrote:

Men make their own history, but they do not make it just as they please; they do not make it under circumstances chosen by themselves, but under circumstances directly encountered, given and transmitted from the past. The tradition of all the dead generations weighs like a nightmare on the brain of the living.

(Marx 1963 [1852]:15)

Marx believed that the economic structure of production was the critical factor on which the whole of society rested: its property relations, its legal system, its government, its religion, its military, its art, its literature, its science, its ideas.

While Marx and Engels first developed their materialist conception of history at length in *The German Ideology*, the most concise expression of it appears in the “Author’s Preface” to *A Contribution to the Critique of Political Economy*.

In the social production which men carry on they enter into definite relations that are indispensable and independent of their will; these relations of production correspond to a definite stage of development of their material powers of production. The sum total of these relations of production constitutes the economic structure of society—the real foundation, on which rise legal and political superstructures and to which correspond definite forms of social consciousness. The mode of production in material life determines the general character of the social, political and spiritual processes of life. It is not the consciousness of men that determines their existence, but, on the contrary, their social existence determines their consciousness.

(Marx 1904 [1859]:11–12)

The slave economy of antiquity rested on the military success of the state, for slaves were the booty of war. Plato and Aristotle considered slavery to be the natural condition for the slave, an inferior being, even as they sought the good life for the citizen. The serf and lord of the Middle Ages emerged as the Order of Knights pacified the countryside in the West after the disintegration of the Roman Empire. The core of the social code of feudal

society rested on the military virtues of fealty and rank, based on birth as opposed to merit. Wage labour and capital in the modern world call for individual freedom, production for a profit and enforcement of contracts by the state. Slave and master, serf and lord, labour and capital express the legal relations, the property relations, of ancient, medieval and bourgeois society.

“The ancient, the feudal, and the modern bourgeois methods of production,” Marx (1904 [1859]:13) wrote, are “so many epochs in the progress of the economic formation of society.” What people think about their society and how they express their ideas corresponds to the mode of production. When the mode of production changes, so too do the laws, the consciousness, the ideology of society.

With the change of the economic foundation the entire immense superstructure is more or less rapidly transformed. In considering such transformations the distinction should always be made between the material transformation of the economic conditions of production which can be determined with the precision of natural science, and the legal, political, religious, aesthetic or philosophic—in short ideological forms in which men become conscious of this conflict and fight it out.

(Marx 1904 [1859]:12)

Marx analysed bourgeois society with his dialectical method in *Capital*, which gives an account of how the dynamic forces of competition beget the antagonism between labour and capital and how “the productive forces developing in the womb of bourgeois society create the material conditions for the solution of that antagonism” (Marx 1904 [1859]:13). The solution is the socialist revolution.

Marx follows Smith and Ricardo

Karl Marx presented the most complete and logically consistent labour theory of value of any classical economist. More than anyone else, he maintained a labour theory of the origin, measure and regulation of value. It goes without saying, as Marx (1938 [1891]:3) made clear in his *Critique of the Gotha Programme*,⁵ that nature is the source of material things, which he called “use values.” He agreed with Adam Smith, however, that labour is the origin of value, but he criticized him for restricting his labour theory of the regulation of value to primitive society, where the beaver and the deer exchange in proportion to the labour needed to catch and to kill them. Smith abandoned the labour theory of the regulation of value for civil society and adopted a cost of production theory to explain price determination. In his *Theories of Surplus Value*, Marx wrote that Smith

moves with great naïveté in a perpetual contradiction. On the one hand he traces the intrinsic connection existing between economic categories or the obscure structure of the bourgeois economic system. On the other, he simultaneously sets forth the connection as it appears in the phenomena of competition and thus as it presents itself to the unscientific observer just as to him who is actually involved and interested in the process of

bourgeois production. One of these conceptions fathoms the inner connection, the physiology, so to speak, of the bourgeois system, whereas the other takes the external phenomena of life, as they seem and appear and merely describes, catalogues, recounts and arranges them under formal definitions.

(Marx 1963–71:2, 165)

Marx labelled the labour theory of value the “esoteric” part of Smith’s work. He called the cost of production theory the “exoteric” part of his work. Whether his successors pursued the esoteric or exoteric part of Smith’s work, they adopted his language and his abstract concepts to describe and analyse economic phenomena.

In some ways, Marx was closer to Smith than to Ricardo, as W.Stark (1944a:48), among others, noted: “The Marxian doctrine of surplus-value was a strictly logical development of the Smithian doctrine of value.” Smith presented a theory of value in which profit and rent were deductions from the whole produce of labour. “Thus,” Marx wrote in his *Theories of Surplus Value*,

Adam Smith conceives of *surplus-value*—that is surplus-labour, the excess of labour performed and realised in the commodity *over and above* the paid labour, the labour which has received its equivalent in wages—as the *general category*, of which profit in the strict sense and rent of land are merely branches.

(Marx 1963–71:1, 82)

With similar logic, Marx maintained that labour was the sole value creating substance and that the total working day was divided into two parts, one of which reproduced the subsistence of labour, the other of which provided the surplus value of capital.⁶

After criticizing Smith for maintaining both an “esoteric” and an “exoteric” theory of value, Marx turned to Ricardo. He agreed with Ricardo that the labour embodied in the production of commodities regulates their values in civil society, which was Smith’s esoteric theory of value for primitive society. He believed that Ricardo’s labour theory of value represented his “great historical significance for science.”

But at last Ricardo steps in and calls to science: Halt! The basis, the starting-point for the physiology of the bourgeois system—for the understanding of its internal organic coherence and life process—is the determination of *value by labour-time*.

(Marx 1963–71:2, 166)

Both Marx and Ricardo initially explained the relative value of commodities by the relative quantity of labour embodied in them. Marx argued that the whole value of the commodity was produced by labour alone, but that labour did not receive the whole value of the day’s labour. The capitalist exploited labour by expropriating the surplus value that exceeded the subsistence of labour. This is consistent with his labour theory of the origin of value. Ricardo, in contrast, did not consistently argue that labour was the only source of value even in primitive society. He ultimately explained profits in the same way that

he explained compound interest, and he did not question the legitimacy of profits. He did not claim that profits came from the unpaid portion of the working day. For this reason, Marx (1963–71:3, 14) accused Ricardo of leaving “the origin of surplusvalue obscure.”

Marx endorsed Ricardo’s approach to the theory of value because he thought it exposed the inherent conflict between the classes under capitalism. If value is determined by labour time, then the capitalist must earn surplus value by exploiting labour. He was not alone in seeing class conflict and injustice buried in Ricardo. Marx (1963–71:2, 166) noted that H.C. Carey had denounced Ricardo as the “father of communism.” Carey (1848:75) had written that Ricardo’s *Principles* “is the true manual of the demagogue, who seeks power by means of agrarianism, war, and plunder.”

The theory of commodities

Marx (1961–62 [1867–94]:I, 35) began *Capital* with the concept of wealth: “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.” Adam Smith would call this a stock of things. They would appear on his national balance sheet as physical assets. The wealth of nations for Smith, in contrast, is the annual consumption on a per capita basis. It is his measure of the economic welfare. It is a flow, not a stock. Both Marx and Smith, however, were guilty of the materialist fallacy, the notion that wealth consists of physical commodities, whether previously accumulated or currently produced.

Since wealth consists of commodities, Marx needed a theory of commodities. For things to be commodities, they must meet three conditions: first, they must have value in use, second, they must possess value in exchange and third, things must be exchanged.⁷

In the first place, a commodity must satisfy human wants. “The nature of such wants,” Marx (1961–62 [1867–94]:I, 35) wrote, whether “they spring from the stomach or from fancy, makes no difference.” Citing John Locke, he continued,

The utility of a thing makes it a use-value. But this utility is not a thing of air. Being limited by the physical properties of the commodity, it has no existence apart from that commodity. A commodity, such as iron, corn, or a diamond, is therefore, so far as it is a material thing, a use value, something useful.

(Marx 1961–62 [1867–94]:I, 36)

A commodity is, therefore, a physical or material object that satisfies human wants. It is a use value, but value in use does not explain value in exchange, as Smith and Ricardo recognized. Use value is qualitative.

In the second place, for a thing to be a commodity, it must possess exchange value, which is quantitative. The exchange value of a commodity is created, measured and regulated by the quantity of labour embodied in it.

A use-value, or useful article, therefore, has value only because human labour in the abstract has been embodied or materialised in it. How, then,

is the magnitude of this value to be measured? Plainly, by the quantity of the value-creating substance, the labour, contained in the article. The quantity, however, is measured by its duration, and labour-time in its turn finds its standard in weeks, days, and hours.

(Marx 1961–62 [1867–94]:I, 38)

Labour is the origin of value, because labour is the sole value-creating substance. The regulation of value is also due to labour, because the exchangeable value of commodities arises from the labour embodied in them. The labour time embodied in commodities is, therefore, the essential and logical measure of value.⁸

Since labour comes in different qualities, individual labourers create different magnitudes of value, as in the case of a common labourer and a jeweller. Marx converted the heterogeneous collection of individual labourers in society into a homogeneous mass of unskilled labourers using the labour theory of value itself. Labour is simply a commodity like any other commodity, and its value is determined by the labour embodied in it.

The value of labour-power is determined, as in the case of every other commodity, by the labour-time necessary for the production, and consequently also the reproduction, of this special article. So far as it has value, it represents no more than a definite quantity of the average labour of society incorporated in it.

(Marx 1961–62 [1867–94]:I, 170–1)

The labour time embodied in the production of labour power can in turn be reduced to the value of the subsistence necessary to raise and maintain the labourer. If it takes more time to raise and bring a philosopher to market than it does a common street porter, one philosopher counts as so many street porters. By this rule, all labour time can be reduced to unskilled labour time. Thus, the labour power of all the individual labourers in society counts as a homogeneous mass of labour power. Here, Marx is logically more consistent than Ricardo, who left an incomplete theory of wage inequalities.

Unlike the labour embodied in the production of other commodities, however, the subsistence of the labourer varies from country to country and from age to age. As Ricardo and Malthus had earlier explained, subsistence depends on the habits and customs of a people. Marx agreed:

In contradistinction therefore to the case of other commodities, there enters into the determination of the value of labour-power a historical and moral element. Nevertheless, in a given country, at a given period, the average quantity of the means of subsistence necessary for the labourer is practically known.

(Marx 1961–62 [1867–94]:I, 171)

The labour theory of value, therefore, applies to a single country, so that international comparisons of value are meaningless.

Labour only bestows value on an article if the labour is efficiently employed. If labour takes more time or uses more materials than necessary to produce a commodity, the extra cost does not add value to the article. Labour creates value, Marx (1961–62 [1867–94]:I, 39) wrote, only if “it requires for producing a commodity, no more time than is needed on an average, no more than is socially necessary.” The socially necessary labour time, according to Marx (1961–62 [1867–94]:I, 39), is “that required to produce an article under the normal conditions of production and with the average degree of skill and intensity prevalent at the time.”

In the third place, in addition to being useful and having labour embodied in it, an article must be exchanged in the market in order to be a commodity. The labour theory of value does not explain the value of the free gifts of nature, like the air and natural meadows. They are useful, but labour did not produce them. When labour produces things that are consumed at home, they are also useful, but they are not commodities, because production occurs outside of the capitalist system of exchange. The medieval peasant produces quit rent corn for his feudal lord and tithe corn for his parson, but they are not commodities, in Marx’s sense, because they are traditional or customary payments, not market values. Finally, if labour produces something that is useless, it has no value in exchange. To be a commodity, labour must produce a useful article that is exchanged in the market.

The labour theory of value applies to a society where property-owning capitalists employ propertyless labourers to produce commodities for sale in the market. It does not apply to the independent craftsmen who possess the necessary means of production to support themselves, and it does not apply to a society where labourers are bound to their masters as serfs or slaves. It applies to a society of free labourers,

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

(Marx 1961–62 [1867–94]:I, 169)

The theory does not pertain to family farms, which have their own land, buildings and machinery and which enjoy the fruits of their own labour. Free labourers, in contrast, must sell his labour power to the capitalist in order to buy their subsistence. They produce commodities that do not belong to them. They are, therefore, alienated from the product of their labour.

Labour is also the measure of value, though, for the sake of exposition, Marx (1961–62 [1867–94]:I, 97–8) took gold to be his measure of value, because “it is the socially recognised incarnation of human labour.” Whereas Smith wanted a universal measure of value to compare the wealth of nations and to guard against inflation and whereas Ricardo wanted an invariable measure of value to determine how relative values change as wages rise and profits fall, Marx wanted a measure of value that reflected the labour embodied in it, so that it could measure the relative value of different commodities. He thought it was important to have a fairly stable measure of value, so that it could serve as a standard of price; but it was essential that it reflect the labour needed to produce it. “A change in the value of gold does not interfere with its functions as a measure of value,”

Marx (1961–62 [1867–94]:I, 98) explained, because “the change affects all commodities simultaneously, and, therefore, *caeteris paribus*, leaves their relative values *inter se*, unaltered, although those values are now expressed in higher or lower gold-prices.” Only the labour embodied in gold changes, while the labour embodied in all other commodities remains unchanged. Ricardo stated the same proposition. Under these conditions, money is said to be neutral, because it does not alter relative values.

Surplus value

Exchange occurs when the use value of a commodity to the buyer exceeds its exchange value, and the exchange value to the seller exceeds its use value. What they buy is worth more to them than what they sell. Exchange takes two forms: selling in order to buy, which Marx denoted C–M–C; and buying in order to sell, M–C–M.

The circuit starts C–M–C with one commodity, and finishes with another, which falls out of circulation and into consumption. Consumption, the satisfaction of wants, in one word, use-value, is its end and aim. The circuit M–C–M, on the contrary, commences with money and ends with money. Its leading motive, and the goal that attracts it, is therefore mere exchange-value.

(Marx 1961–62 [1867–94]:I, 149)

Surplus value emerges even though equal values are given in exchange. The capitalist starts out with one sum of money and ends up with a larger sum of money. This process can be written M–C–M', where M'=M+ΔM. The increment over the original sum of money is called surplus value.

Selling in order to buy corresponds to the primary or natural use of things, according to Aristotle, whom Marx (1961–62 [1867–94]:I, 85n, 152n, 164–5) cited and praised. When labourers sell their labour power to buy sandals in order to wear them, the sandals are bought for their value in use. Labourers need sandals to wear. These needs are natural and limited. When a capitalist hires labourers to produce sandals in order to sell them, the capitalist wants the sandals for their value in exchange, for the sake of money. The accumulation of money is unlimited and unnatural. Aristotle's censure of profit-making appealed to Marx.

Surplus value does not come from selling a thing for more than it is worth. It is not a matter of sharp business practices, bait and switch, a thumb on the scale, cheating on quality or any other fraud. All things exchange at full value, which is simply the value of the labour time embodied in them. Surplus value flows from the consumption of a commodity. The source of surplus value is the value in use of a commodity rather than the value in exchange of it, which Marx put rather vividly.

In order to be able to extract value from the consumption of a commodity, our friend, Moneybags, must be so lucky as to find, within the sphere of circulation, in the market, a commodity, whose use-value possesses the peculiar property of being a source of value, whose actual consumption,

therefore, is itself an embodiment of labour, and, consequently, a creation of value. The possessor of money does find on the market such a special commodity in capacity for labour or labour-power.

(Marx 1961–62 [1867–94]:I, 167)

The exchange value of labour is the subsistence of the labourer. However, the capitalist hires the labourer for the whole working day, which is the use value of labour. The whole produce of labour initially belongs to the capitalist, a part of which pays the wages of labour. If subsistence takes half a day's labour to produce, the capitalist earns surplus value equal to the other half of the day's labour. The whole working day is, in this way, divided into two parts: one to produce the necessary subsistence for the labourer, the other to produce the surplus value for the capitalist.

Marx called the means of subsistence the variable part of capital or, simply, variable capital. It is variable because labour is the value creating substance. "The labourer," Marx (1961–62 [1867–94]:I, 199) wrote, "adds fresh value to the subject of his labour by expending upon it a given amount of additional labour, no matter what the specific character and utility of that labour may be." Labour not only reproduces its own means of subsistence but it also produces surplus value for the capitalist. He called the means of production, that is, materials, supplies, equipment and structures used in production, the constant part of capital, or constant capital. It is constant because it merely transfers its value to a commodity as it is used up in production. As Marx (1961–62 [1867–94]:I, 199) put it, "the values of the means of production used up in the process are preserved, and present themselves afresh as constituent parts of the value of the product."

The constant capital or means of production are equal in value to the labour embodied in them. They are the product of "past labour," as Marx wrote, repeating Petty, whom he quoted in his *Theories of Surplus Value*. The value of commodities today includes the value of the labour embodied in the old tools and machines used up in their production.⁹ Marx illustrated this principle with the example of cotton yarn.

Hence, in determining the value of the yarn, or the labour-time required for its production, all the special processes carried on at various times and in different places, which were necessary, first to produce the cotton and the wasted portion of the spindle, and then with the cotton and spindle to spin the yarn, may together be looked on as different and successive phases of one and the same process. The whole of the labour in the yarn is past labour; and it is a matter of no importance that the operations necessary for the production of its constituent elements were carried on at times which, referred to the present, are more remote than the final operation of spinning.

(Marx 1961–62 [1867–94]:I, 187)

The notion that labour, past and present, produced all commodities is the logical foundation on which the labour theory of value rests. The materials and instruments of production transfer the labour embodied in them to new commodities until they are used up. As they are used up, however, the value that they transfer to new commodities equals

the socially necessary labour time needed to reproduce them, not the quantity of labour originally required to produce them in the past.

Unlike Locke, Marx does not account for the labour embodied in capital goods back to the time of Adam or Noah.¹⁰ Indeed, he ridiculed the old theories of capital accumulation in political economy.

In times long gone by there were two sorts of people; one, the diligent, intelligent, and, above all, frugal élite; the other, lazy rascals, spending their substance, and more, in riotous living. The legend of theological original sin tells us certainly how man came to be condemned to eat his bread in the sweat of his brow; but the history of economic original sin reveals to us that there are people to whom this is by no means essential.

(Marx 1961–62 [1867–94]:I, 713)

For Marx (1961–62 [1867–94]:I, 715), “the capitalist era dates from the 16th century.” Capital goods inherited from feudal times have use value, but their exchange value is unrelated to the socially necessary labour time required to produce them under capitalist social conditions. They were often produced by slaves, serfs, bondsmen, apprentices or other labourers who were not free to sell their labour power.

Marxian values

The value of a commodity for Marx consists of three parts: the constant capital (c) used up in production, the variable capital (v), and the surplus value (s). The constant capital used up in production simply transfers its value to a new commodity, valued at replacement. It is the product of past labour and adds no new value to production. Current labour creates new value. In Volume I of *Capital*, Marx typically assumes that constant capital and variable capital turn over once a year. When the commodity is sold on the market, it replaces the value of the constant capital that is used up in production, restores the value of variable capital that is paid to labour and generates surplus value that is appropriated by the capitalist. For Marx, $\text{value} = c + v + s$.

He illustrated this relation with an example in *Capital*. Suppose labour produces 20lb of yarn, worth 30s., in a working day of 12 hours.

No less than 8/10th of this value, or 24s., is due to mere re-appearance in it, of the value of the means of production (20 lbs. of cotton, value 20s., and spindle worn away, 4s.): it is therefore constant capital. The remaining 2/10ths or 6s. is the new value created during the spinning process: of this one half replaces the value of the day's labour-power, or the variable capital, the remaining half constitutes a surplus-value, of 3s.

(Marx 1961–62 [1867–94]:I, 220–1)

The 30s. of yarn is, therefore, divided into 24s. of constant capital +3s. of variable capital +3s. of surplus value. The constant capital is an accumulation of past labour, but it is valued at its replacement cost as it is used up. The capitalist recoups the value of the

constant capital with the sale of the product. If the capitalist sold the constant capital instead of producing yarn, its value would still be 24s., so that its value is not affected by the working day and the spinning of the yarn.¹¹ The current labour reproduces the subsistence that is necessary for labour and the surplus value that is expropriated by capital. The total working day is, therefore, divided into two parts: necessary working time and surplus working time.¹²

Marx (1961–62 [1867–94]:I, 218) defined the ratio of labour time spent to produce the surplus value for the capitalist to the labour time necessary to produce the subsistence for the labourer (s/v) as the rate of surplus value: “The rate of surplus-value is therefore an exact expression for the degree of exploitation of labour-power by capital, or of the labourer by the capitalist.” The ratio of surplus value to variable capital (s/v) equals the surplus labour time divided by the necessary labour time, which equals unpaid labour time divided by paid labour time.

The rate of profit (r), in contrast, equals surplus value divided by the total capital employed in production: $r=s/C$, where C is the total accumulation of capital, variable plus constant, not just the amount used up in production during a year.

Surplus value is the source of profits. The capitalist can increase surplus value by two processes, which Marx called absolute surplus value and relative surplus value.

The surplus-value produced by prolongation of the working, I call *absolute surplus-value*. On the other hand, the surplus-value arising from the curtailment of the necessary labour-time, and from the corresponding alteration in the respective lengths of the two components of the working-day, I call *relative surplus-value*.

(Marx 1961–62 [1867–94]:I, 315)

On the one hand, the capitalist wants the labourer to work as long as possible. The working day has a maximum limit of 24 hours, however. Without time to sleep, eat, wash and attend to the daily needs of life as well as to pursue social and intellectual interests, labour could not continue working for long. On the other hand, labour wants to work as little as possible. The length of the working day, Marx (1961–62 [1867–94]:I, 235) explained, is ultimately determined by a struggle, “a struggle between collective capital, i.e., the class of capitalists, and collective labour, i.e., the working class.” The length of the working day is an immediate focus of the class struggle, as in the case of the Ten Hours Act.

Relative surplus value is created by improving the productivity of labour. The capitalist increases productivity by providing individual labourers with more tools and better machinery, that is, by increasing the ratio of constant to variable capital, which Marx called the organic composition of capital (c/v). By increasing the means of production per labourer, the labourer can reproduce the means of subsistence in a shorter time. At first, the surplus value of the capitalist grows as the necessary part of the working day declines. In this way, the capitalist becomes rich.

Accumulate, accumulate! That is Moses and the prophets! “Industry furnishes the material which saving accumulates.” Therefore, save, save, i.e., reconvert the greatest possible portion of surplus-value, or surplus-

product into capital! Accumulation for accumulation's sake, production for production's sake: by this formula classical economy expressed the historical mission of the bourgeoisie, and did not for a single instant deceive itself over the birth-throes of wealth.

(Marx 1961–62 [1867–94]:I, 595)

However, as capital accumulates, the socially necessary labour time embodied in production declines, so that competition causes prices to fall. The capitalist must, therefore, accumulate capital to reduce the cost of production. Accumulation reduces costs by extending the division of labour, by allowing the construction of vast systems of machinery and by applying science to the technology of production.

Just as the free labourer, who owns no capital, must sell his labour power to the capitalist in exchange for his subsistence and, in the process, become alienated from the product of his labour, so too the capitalist must accumulate and innovate to avoid falling into the ranks of the proletariat, though ultimately many fail.

The battle on competition is fought by the cheapening of commodities. The cheapness of commodities depends, *ceteris paribus*, on the productiveness of labour, and this again on the scale of production. Therefore, the larger capitals beat the smaller.

(Marx 1961–62 [1867–94]:I, 626)

Competition, wrote Marx (1961–62 [1867–94]:I, 592), “makes the immanent laws of capitalist production to be felt by each individual capitalist, as external coercive laws.” Schumpeter (1950 [1942]:81–6), who was a close reader of Marx, later referred to this as “the process of creative destruction.” The means of production gradually becomes obsolete as capital accumulates. Marx (1961–62 [1867–94]:III, 112) later explained how, with the introduction of improved machinery, old capital “continually becomes antiquated before it has time to reproduce its own value.” Old antiquated capital goods are technologically obsolete. Old capital goods that are still in use will not and, perhaps, cannot be reproduced. They would sell for less than the value of the labour embodied in them.

The transformation problem

Critics consider the transformation problem to be the principal logical fault in Marx's labour theory of value.¹³ Marx (Marx and Engels 1942, 129–33) first discussed his solution to the problem in a letter to Engels on 2 August 1862, in which he criticized Ricardo, but his solution did not appear in print until 1894 with the publication of Volume III of *Capital*. The transformation problem is the same issue that Ricardo faced when he introduced his “considerable modification” to the labour theory of value.

If the capital structure is the same in every industry, that is, if the organic composition of capital is everywhere the same, then market prices tend to be proportional to the labour embodied in production. Prices are proportional to the variable capital plus constant capital used up in production. But, the capital structure is not the same in every industry.

If some industries are more labour intensive than others, for example, they will produce more surplus value from the same total capital (constant plus variable) than less labour intensive industries, because variable capital alone creates surplus value. However, competition tends to produce a uniform rate of profit in all industries, as Smith and Ricardo, among others, had previously established. For this reason, labour values tend to exceed market prices in those industries which are relatively labour intensive. This theoretical possibility required Marx to introduce his own considerable modification to his labour theory of value. He explained how competition transforms labour values into market prices.

Transformation problem arises because surplus value comes from the exploitation of labour and is proportional only to the variable capital employed in production, whereas the rate of profit is proportional to the whole capital employed. The rate of surplus value and the rate of profit are explained by different principles and are not in general the same. This is illustrated in Table 10.1, in which each sphere of production employs 100 units of capital, but the ratio of constant to variable capital differs in each sphere.

A rate of surplus value of 100 per cent in each sphere of production implies that the working day is everywhere equally divided between necessary labour and surplus labour, so that the degree of exploitation is also 100 per cent. The value of commodities equals the constant capital used up plus the variable capital plus the surplus value. $\text{Value} = c + v + s$. Since the organic composition of capital (c/v) varies from industry to industry, so does the rate of profit. This violates the equilibrium condition for profits in competitive industries.

Marx resolved this problem by supposing that competition tends to allocate the total surplus value created in society among the different branches of production in proportion to the total capital they employ.¹⁴

The rates of profit prevailing in the various branches of production are originally very different. These different rates of profit are equalized by competition to a single general rate of profit, which is the average of all these different rates of profit. The profit accruing in accordance with this general rate of profit to any capital of a given magnitude, whatever its organic composition, is called the average profit.

(Marx 1961–62 [1867–94]:III, 156)

Table 10.1 Rates of surplus value and profits before values are transformed

<i>Capitals</i>	<i>Rate of Surplus value</i>	<i>Rate of profit</i>	<i>Used up</i>	<i>Value of</i>
	<i>value</i>	<i>profit</i>	<i>up</i>	<i>commodities</i>
	<i>(%)</i>	<i>(%)</i>	<i>c</i>	
I $80_c + 20_v$	100	20	20	90
II $70_c + 30_v$	100	30	30	111
III $60_c + 40_v$	100	40	40	131
IV $85_c + 15_v$	100	15	15	55
V $80_c + 20_v$	100	5	5	15
Total				

390 _c +110 _v	–	110	110	–	–
Average					
78 _c +22 _v	–	22	22	–	–

Source: Marx (1961–62 [1867–94]:III, 154).

The effect of this supposition is calculated in Table 10.2. The cost price of commodities equals the constant capital used up plus the variable capital employed. Cost price= $c+v$. In the aggregate, the total capital employed in all spheres is 500 and the total surplus value is 110. Thus, the average rate of surplus value and the average rate of profit is 22 per cent, or 22 units in each industry. The cost price plus the average profit gives the market price. “In the case of capitals of average, or approximately average, composition,” Marx (1961–62 [1867–94]:III, 171) observed, “the price of production is thus the same or almost the same as the value, and the profit the same as the surplus-value produced by them.” Ricardo supposed gold to be such a commodity, so that he could use it as his measure of value. In Table 10.2, Marx (1961–62 [1867–94]:III, 155) concluded that three commodities sell above their value ($2+7+17=26$) and two below their value ($8+18=26$).

Even though Marx sought to explain the prices of production by the labour embodied in commodities, he ended up with a cost of production theory of value like Adam Smith and David Ricardo. Marx’s transformation turns profits into a necessary cost of production, because any industry that did not receive the “average profit” would see its capital diverted to other industries. Adam Smith simply abandoned the labour theory of the regulation of value when he moved beyond the beaver and deer of primitive society. He still claimed that all output was due to labour in civil society, but that the whole produce of labour did not belong to the labourer. For Smith, competition allocates the whole produce of labour among wages, profits and rents. They all must be paid at their natural rates for production to be forthcoming. Ricardo insisted that even the beaver and the deer required capital to hunt and to kill, so that profits were a component part of price for him even in primitive society. Marx had a different theory of wages, profits and rent than either Smith or Ricardo. He had a labour embodied theory of subsistence and an exploitation theory of surplus value, as Böhm-Bawerk (1959 [1884–1912]) called it, where profit and rent are species of surplus value.

Table 10.2 Rates of surplus value before and rates of profits after values are transformed

<i>Capitals</i>	<i>Rate of Value of surplus commodities of value (%)</i>	<i>Cost-price commodities</i>	<i>Price of commodities of</i>	<i>Rate of profit (%)</i>
I 80 _c +20 _v	100	90	70	92 22
II 70 _c +30 _v	100	111	81	103 22
III 60 _c +40 _v	100	131	91	113 22
IV 85 _c +15 _v	100	70	55	77 22
V 80 _c +20 _v	100	20	15	37 22

Source: Marx (1961–62 [1867–94]:III, 155). Derived from Table 10.1.

Many authors tried to solve the so-called transformation problem even before Volume III of *Capital* appeared, but Engels thought they all failed (Marx 1961–62 [1867–94]:III, 8–21). Marx’s own solution was severely criticized, because he transformed output prices without transforming input values, which were labour values, not market prices. He needed to know the market prices of the capital stock to show how competition tends to equalize the rate of profits on capital. Ladislaus von Bortkiewicz (1949 [1907]) offered an early solution to this problem, but he did not follow Marx’s method. His method is correct as far as it goes, but it does not go far enough. He restricted his analysis to the special case of simple reproduction, in which past labour and current labour are the same. He does not consider how the labour embodied in constant capital accumulated over time and how it depreciates slowly. “It must be observed,” wrote Marx (1961–62 [1867–94]:I, 387), “that the machinery, while always entering as a whole into the labour-process, enters into the value-begetting process only by bits.”

The labour value embodied in one part of the constant capital steadily decreases as existing capital goods wear out and as new capital goods that embody less labour replace them.

As a result of this increasing productivity of labour, however, a part of the existing constant capital is continuously depreciated in value, for its value depends not on the labour-time that it cost originally, but on the labour-time with which it can be reproduced, and this is continuously diminishing as the productivity of labour grows.

(Marx 1963–71:2, 416)

Another part of the existing constant capital, however, is undepreciated. This part is important, Marx (1963–71:2, 414) wrote in his *Theories of Surplus Value*, “in the determination of the general rate of profit.” The book value of the old stock of constant capital reflects the value of the past labour embodied in it, whereas the constant capital used up equals the current labour embodied in its reproduction. Book value is an historical value, based on historical prices, whereas surplus value is a current value.¹⁵ Marx could not transform input values at current prices, because old capital was purchased at old prices. The mathematical solution to the transformation problem, according to Marx’s assumptions, is perhaps intractable, so the debate over it may continue forever.¹⁶

The exploitation of labour

The transformation problem undermines Marx’s theory of relative values in a capitalist society, because competitive prices are neither equal to nor proportional to the labour embodied in commodities, but it does not destroy his theory of exploitation.¹⁷ The exploitation of labour rests on two independent propositions: one economical, the other sociological. His theory of exploitation predates his theory of value.

The economical proposition is Smith’s doctrine of labour as the origin of value, the notion that all commodities were in principle produced by labour, that labour is now and always has been the only active agent of production. Natural things are necessary to

production, but they are not producers. This proposition concerns the origin of commodities. In his *Economic and Philosophic Manuscripts of 1844*, Marx (1964 [1844]:70), referring to Adam Smith as the political economist, wrote: "The political economist tells us that everything is bought with labor and that capital is nothing but accumulated labor,...that originally and in theory the *whole produce* of labor belongs to the laborer." Thus, in *Capital*, Marx (1961–62 [1867–94]: 38) wrote that labour is "the value-creating substance." The economical proposition explains Petty's doctrine that past labour produced capital goods. If labour does not receive what it creates, then labour is exploited.

The sociological proposition concerns the class structure of society, a class of propertyless labourers who work for wages and a class of property owners who receive rent and profits. In the *Communist Manifesto*, Marx and Engels (1977 [1848]:36) wrote: "Society as whole is more and more splitting up into two great hostile camps, into two great classes directly facing each other: Bourgeoisie and Proletariat." Smith and Ricardo accepted the class structure of labourers, capitalists and landlords as a matter of fact. It roughly coincided with the facts of British society in the eighteenth and nineteenth centuries. For Marx, the fact that property incomes exist proves that labour is exploited.

Thus, the Marxian theory of exploitation has a logical as well as an empirical basis that is unrelated to the labour theory of value in exchange. If labour produces all commodities, but does not receive all the income derived from production, then labour may be said to be exploited.¹⁸ In *Value, Price, and Profit*, among other places, Marx (1889:67) wrote "*Rent, Interest, and Industrial Profit* are only *different names* for different parts of the *surplus value* of the commodity, or the *unpaid labour enclosed in it*." The class struggle determines the degree of exploitation. Neoclassical economists accept neither the economical nor the sociological basis of the Marxian theory of exploitation. For Walras, commodities are produced by all the productive services in the economy—all the types of land, labour and capital, which are arbitrarily distributed among the population in a manner that is not explained. In a Walrasian world, wages, profits and rents change with every redistribution of property. Walras treated the distribution of property as a matter of justice, not economics.¹⁹

Historical tendencies

Marx made four predictions about the future of capitalism, often called the historical tendency of capitalism: (1) the concentration of capital, (2) the immiseration of labour, (3) the falling rate of profit, and (4) increasingly severe business cycles. They belong to his theory of history, which he formulated before he worked out the details of his labour theory of value. They appeared in an embryonic form in *The Economic and Philosophic Manuscripts of 1844* and in the *Communist Manifesto* of 1848. Marx restated them in a more sophisticated manner in *Capital* with the concepts and algebra of his labour theory of value.

The accumulation, concentration and centralization of capital arose historically, according to Marx, as modern industry replaced the feudal industry. During the Middle Ages, industry was controlled by closed guilds, which regulated the methods of production, specified the quality of the product and set the number of masters,

journeymen and apprentices in each craft. Modern industry revolutionized industrial production with the factory system and wage labour. Progress replaced stability. Capitalism was an enormous economic success. "The bourgeoisie, during its rule of scarce one hundred years," Marx and Engels (1977 [1848]: 40–1) wrote, "has created more massive and more colossal productive forces than have all preceding generations together." But, according to Marx's thesis, capitalism contained within it the seeds of its own destruction. It not only pitted labour against capital, but also one capitalist against another in a never-ending struggle for survival.

The accumulation of capital reduced the cost of production by reducing the socially necessary labour time embodied in production, so that the individual capitalist must accumulate in order to survive as a capitalist. Competition replaced regulation.

That which is now to be expropriated is no longer the labourer working for himself, but the capitalist exploiting many labourers. This expropriation is accomplished by the action of the immanent laws of capitalistic production itself, by the centralisation of capital. One capitalist always kills many.

(Marx 1961–62 [1867–94]:I, 763)

Marx extended the theory of competition, which he inherited from Adam Smith and David Ricardo, to the dynamic world of technical progress. Competition forced the capitalist to accumulate capital and centralize production in order to take advantage of the newest methods of large-scale production. This roughly describes the emergence of largescale enterprises in the second half of the nineteenth century. Marx did not foresee the historical tendencies that reduced competition: the rise of dominant firms with monopoly power, the differentiation of products by design and by sales promotion, the grants of monopoly privilege by the state through patents, copyrights, trademarks, franchises and industrial regulations, not to mention the old standbys of tariffs, embargoes and subsidies.²⁰

Marx responded to the Malthusian principle of population with his own theory of the immiseration of labour.²¹ He rejected the population principle because Malthus laid the blame for poverty on the heads of the poor, whereas Marx attributed poverty to the impersonal forces of competition under capitalism, which spontaneously created and maintained an industrial reserve army of the unemployed. The unemployed depressed wages, which tended to increase the surplus value of the capitalist. They reduced the paid portion and increased the unpaid portion of the working day. In contrast to the serf of the Middle Ages, "the modern labourer," Marx and Engels (1977 [1848]:48) claimed, "instead of rising with the progress of industry, sinks deeper and deeper below the conditions of existence of his own class. He becomes a pauper, and pauperism develops more rapidly than population and wealth." The industrial reserve army arises for several reasons and takes different forms.

Ricardo gave one explanation in his chapter "On Machinery," in which he corrected his earlier position on the general benefits that flow from the introduction of new and more productive machines. By the time he published the third edition of his *Principles*, Ricardo (1951 [1821]:388) had become "convinced that the substitution of machinery for human labour is often very injurious to the interests of the class of labourers." In Marx's

(1961–62 [1867–94]:I, 640) language, new machinery “makes the supply of labour, to a certain extent, independent of the supply of labourers.” Labour saving innovations were no doubt important during the nineteenth century, but new methods of production needed not be labour saving. The railroad and the telephone, for example, created a demand for wholly new categories of labour and capital.

Marx divided the industrial reserve army of the unemployed into three categories: the floating, the latent and the stagnant. First, the decennial cycle accounts for the floating unemployed, who increase and decrease in number with periods of prosperity and depression. Second, the latent surplus population appears in agriculture as soon as capitalist production takes possession of it. The agricultural population is constantly moving to the city from the country, where wages are reduced to a minimum. Third, the stagnant population includes paupers, orphans and the lowest layers of society. Aside from the dangerous classes, the stagnant population dwells in the hospital of the industrial reserve army.

The demoralised and ragged, and those unable to work, chiefly people who succumb to their incapacity for adaptation, due to the division of labour; people who have passed the normal age of the labourer; the victims of industry, whose number increases with the increase of dangerous machinery, of mines, chemical works, &c., the mutilated, the sickly, the widows, &c.

(Marx 1961–62 [1867–94]:I, 644)

Labour saving machinery in both manufacturing and agriculture accounts for technological unemployment; fluctuations in output explain the cyclical unemployment; and social welfare cases, to use a modern term, form a third part of the industrial reserve army. The rise of the industrial reserve army is, therefore, partly a matter of social history, partly analytical economics.

The industrial reserve army of the unemployed and the immiseration of labour do not correspond in a clear and unambiguous way to a subsistence standard of living for the labourer. Immiseration has economic, social and psychological dimensions, which Marx depicted with some of his most florid rhetoric.

Within the capitalist system all methods for raising the social productiveness of labour are brought about at the cost of the individual labourer; all means for the development of production transform themselves into means of domination over, and exploitation of, the producers; they mutilate the labourer into a fragment of a man, degrade him to the level of an appendage of a machine, destroy every remnant of charm in his work and turn it into a hated toil; they estrange from him the intellectual potentialities of the labour-process in the same proportion as science is incorporated in it as an independent power; they distort the conditions under which he works, subject him during the labour-process

to a despotism the more hateful for its meanness; they transform his life-time into working-time, and drag his wife and child beneath the wheels of the Juggernaut of capital.

(Marx 1961–62 [1867–94]:I, 645)

Industrial workers clearly lived better than the stagnant population, who are described as barely surviving; but, even among industrial workers, Marx (1961–62 [1867–94]:I, 645) wrote “the lot of the labourer, be his payment high or low, must grow worse.” This raises the question whether immiseration means poverty or alienation? As a social and psychological theory, immiseration may apply to workers today. As an economic condition, industrial labourers in England enjoyed a substantial rise in their standard of living during Marx’s own lifetime.²²

Smith and Ricardo both expected the rate of profits to fall as society progressed. Ricardo’s theory was logically more consistent than Smith’s, but it only held true if you accepted his assumptions. Marx also based his theory of the falling rate of profit on special assumptions. Where c/v defines the organic composition of capital and where $r=s/(c+v)$ defines the rate of profit, Marx argued that the rate of profit will tend to decline, provided the c/v increases and provided s/v remains constant.

If it is further assumed that this gradual change in the composition of capital is not confined only to individual spheres of production, but that it occurs more or less in all, or at least in the key spheres of production, so that it involves changes in the average organic composition of the total capital of a certain society, then the gradual growth of constant capital in relation to variable capital must necessarily lead to a *gradual fall of the general rate of profit*, so long as the rate of surplusvalue, or the intensity of exploitation of labour by capital, remain the same.

(Marx 1961–62 [1867–94]:III, 208)

Since the rate of profit needs to be calculated on the market value of constant and variable capital, Marx’s prediction presumes a solution to the transformation problem. If Marx’s provisos do not hold, his prediction of a falling rate of profit does not necessarily obtain, as many authorities have observed.²³ Technical progress in the production of wage goods, for example, could increase real wages as well as the rate of surplus value. Colonies also promise new sources of exploitation and surplus value.

The *Manifesto* predicted that increasingly severe cycles of prosperity and depression arise from the nature of capitalist society. The industrial crisis is the great internal contradiction of bourgeois society. In the “Afterword of the Second German Edition” of *Capital*, Marx wrote:

The contradictions inherent in the movement of capitalist society impress themselves upon the practical bourgeois most strikingly in the changes of the periodic cycle, through which modern industry runs, and whose crowning point is the universal crisis.

(Marx 1961–62 [1867–94]:I, 20)

The crisis belongs to Marx's materialist concept of history. It negates the forces of production that made capitalism succeed, and it leads to the socialist revolution.

His theory of crises is not, however, deterministic in the sense of the general solution to a second order difference equation with explosive cycles. Crises come out of the historical relations of production in capitalism. First, in a primitive economy, in contrast to modern industry, producers barter one product for another, so that the production of one good constitutes the demand for other goods. This doctrine became known as Say's Law, but J.B. Say extended it to modern society. Ricardo (1951 [1821]:291–2) followed Say when he wrote: "Productions are always bought by productions, or by services; money is only the medium by which the exchange is effected." Marx disputed this doctrine. In a capitalist economy, the introduction of money as a means of payment created the formal possibilities of crises. A capitalist can sell a commodity for money, but need not spend that money immediately. Money can be held as a store of value. If capitalists sell without buying, a crisis occurs. Second, free labourers in capitalist society do not possess the requisite means of production, but must sell their labour power to buy their subsistence. When production falls, they fall into the floating segment of the industrial reserve army. In feudal society the peasant farmer and the guild artisan possessed the means of production and could provide for themselves. They were not thrown into the street if spending stagnated. Competition among the capitalists is the third characteristic of modern industry that may lead to economic crises. In order to reduce the cost of production and increase surplus value, capitalists accumulate constant capital more rapidly than variable capital, which tends to reduce the rate of profit. The accumulation of constant capital on a vast scale also increases the requirements for its maintenance and reproduction.

The conditions of modern industry are inherently unstable, so that crises may occur for a variety of causes, such as the over production of capital goods or the under consumption of consumer goods.²⁴ Conditions are so precarious that any event, even a bad harvest, could pitch the economy into a cumulative downswing with falling profits and rising unemployment. Wassily Leontief (1966 [1938]:77) drew attention to Volume II of *Capital*, in which Marx presented a two sector model of the economy: one sector producing the means of production (capital goods), the other producing the means of subsistence (consumer goods). An imbalance between them could arise as capitalists strive to reduce their cost of production by accumulating constant capital. An over production of constant capital may reduce the rate of profit and throw labourers out of work. Nikolai Kondratiev (1998 [1924]:3–4) concluded, however, that the Marxian "theory of dynamics has not been systematically realised." This is a high standard, however, because few mathematically rigorous business cycle theories appeared before Samuelson's (1944 [1939]) "Interactions between the Multiplier Analysis and the Principle of Acceleration." Marx did not present a fixed and final theory of crises.

Marx's history of capitalism began with the transformation of the feudal property relations of the lord, the serf and the artisan into the bourgeois property rights of the capitalist and propertyless labourer. The centralization of capital, the immiseration of labour, the falling rate of profit and increasingly severe depressions bring the history of capitalism to an end, when the expropriators are expropriated. With the rise of capitalism, "we had the expropriation of the mass of the people by a few usurpers," Marx (1961–62 [1867–94]:I, 764) wrote, whereas, with the socialist revolution, "we have the

expropriation of a few usurpers by the mass of the people.” Marx built his historical tendencies of capitalism on a rational, if not completely logical, foundation in the same way that Smith and Ricardo predicted the coming of a stationary state, but history did not conform to their assumptions.

Conclusion

Volume I of *Capital* contains a labour theory of Marxian values as opposed to a labour theory of competitive market prices. It is based on Adam Smith’s premise that labour is the origin of value, that labour produces all goods from the material things found in nature. Marx called this the esoteric part of Smith’s work, because it fathoms the inner physiology of the bourgeois system and reveals the real foundations of capitalism. Marx deduced labour values from Smith’s premise, so that Marxian values are a logical construction. They are not inferred by observing the physical world. Marxian values may, therefore, fairly be called metaphysical. The salient features of Volume I are the theory of surplus value, the exploitation of labour and the competitive struggle among capitalists, which drives the dynamic process of the accumulation, concentration and centralization of capital.

Volume III of *Capital* treats the problem of transforming labour values into market prices. Marx transformed output prices without transforming input prices, which include the values of old, technologically obsolete constant capital. Past labour produced old capital goods, so that their prices cannot be transformed by current labour values. As Marx set the question, the solution to the transformation problem requires an invariable measure of value, which Ricardo said was an impossibility where the productivity of labour is changing.

Surplus value arises from exploiting labour, so they are two sides of the same coin. In his *Theories of Surplus Value*, Marx (1963–71:2, 354–67) traced the idea that labour is the source of surplus value back to Adam Smith and his predecessors: Hobbes, Petty and Locke. Marx followed the same line of economics and philosophy. They all had production theories of value, and they were all materialists. Smith even presented an economic interpretation of history; and he had a pure labour theory of value, but only for primitive society. Marx’s theory of exploitation clearly implies that he uncritically accepted the Lockean notion that workers are morally entitled to the fruits of their labour, though he repudiated the natural law philosophy of Locke, especially his labour theory of property rights. Marx argued that property rights and legal institutions arise from the social structure of production. They are peculiar to each historical epoch and change with changes in the relations of production. For Marx, the labour theory of property rights presented by Locke was simply an ideological justification for bourgeois property.

The dynamic process of competition drives Marx’s historical tendencies of capitalism. He saw how the profit motive led the individual capitalist to accumulate capital and adopt technologically progressive modes of production, how the reduction in the cost of production forced others to follow suit and how large-scale enterprises tended to eliminate small producers. The concentration of capital creates the inequality of property. The division of society into property owners and propertyless labourers lies at the heart of the exploitation of labour. In *Business Cycles*, J.A. Schumpeter (1939:I, 7, 10), who

rejected Marx's theories of surplus value and exploitation, nonetheless accepted "the Marxian theory of social process," the vision "that technological progress was of the very essence of capitalistic enterprise and hence cannot be divorced from it." Marx's description of the forces that shape capitalism is compelling and partly explains the appeal of his theory.

11

Classical relics in neoclassical thought

The classical and neoclassical parables

The classical and early neoclassical economists approached economic theory from different perspectives.¹ They depict their theories with different parables. The classical economists began their economic analysis by looking back to a state of nature and by asking what is the origin of civil society. The early neoclassical economists viewed the world from the perspective of Robinson Crusoe, who came ashore to discover what things on his island he could use to satisfy his future needs. These perspectives are incompatible and incommensurable because the classical theory looks backward in time, whereas the neoclassical theory looks forward in time.

John Locke set his analysis of the origin of private property, justice and civil government in a state of nature, from which a class of property owners and a class of propertyless labourers emerged. Adam Smith followed the same tradition, which goes back to Plato and Aristotle, when he discussed how the division of labour increases the wealth of nations and gives each labourer a surplus product to barter for the produce of other labourers. The inconvenience of barter gives rise to money, exchange on an enlarged scale and market prices. The accumulation of capital extends the division of labour and increases the total product of labour. In primitive society, labour produced and received the whole product of labour, whereas in civil society, while labour still produces the whole product, it is divided among three separate classes: labourers, capitalists and landlords. The price of each commodity in primitive society is regulated by the labour embodied in it, whereas the price of commodities in civil society consists of three component parts: wages, profits and rent. Society progresses as capital accumulates, which tends to bid up the wages of labour and increase the population, while land is a free gift of nature that does not vary in quantity, that becomes increasingly scarce and that yields rising rents. Therefore, the price of commodities varies with changes in wages, profits and rent. Ricardo accepted the general framework of Smith's analysis, but he sought to rescue him from what he perceived as grave errors, such as the distinction between profit and rent. Marx followed Ricardo as well as Smith. The classical economists had a production theory of the regulation of value, which required them to explain the accumulation of capital and, except for Marx, the growth of population. The classical theory entails a materialist theory of history.

Neoclassical theory begins with three givens: resources, consumer preferences and technical knowledge. When Robinson Crusoe arrived on his island, it contained a given collection of physical resources. Robinson had his own individual preferences for different consumer goods, and he carried with him some technical knowledge in his hands and in his head that would allow him to make goods out of the things he found. He could look about his island and see what was scarce relative to its usefulness to him. His

object was to allocate his resources so that he maximized his wellbeing or utility. The parable of Robinson Crusoe does not readily translate to civil society, where a large population buys and sells different goods and services, because it is not possible to know what is physically scarce relative to its usefulness. People can only know what has prices. Prices indicate scarcity.

Lionel Robbins's (1935:16) celebrated textbook definition of the science of economics, read literally, applies strictly to a Robinson Crusoe economy: "Economics is the science which studies human behaviour as a relation between ends and scarce means which have alternative uses." While scarcity is the essential problem of economics, the "ends," "scarce means" and "alternative uses" in an exchange economy are not directly knowable. Scarce goods have prices, which are knowable, explicitly or implicitly. Robbins was apparently too much under the influence of Carl Menger's theory of the origin of value when he composed his definition, for he knew perfectly well the critical role that prices play in the economy. "Now it may be freely admitted that, within the wide field of our definition," Robbins (1935:17–18) continued, "that the attention of economists is focused chiefly on the complications of the Exchange Economy." He thought that the Robinson Crusoe economy may be illuminating, but that the economic analysis of it was unnecessary.

The classical and early neoclassical theories tell similar stories when they treat the regulation of value in the market period and the determination of prices in the long run. However, Ricardo's natural price includes both current and past costs, whereas Marshall's long run normal values tend to equal expected costs. In the stationary state, they are much the same. Thus, Alfred Marshall wrote

This is the real drift of that much quoted, and much-misunderstood doctrine of Adam Smith and other economists that the normal, or "natural," value of a commodity is that which economic forces tend to bring about *in the long run*.

(Marshall 1961 [1890]:I, 347)

However, the early neoclassical economists also continued to employ concepts and theories that belong to the classical school and that are not wholly consistent with the neoclassical point of view, such as the origin of value, the factors of production, Ricardian rent and the Lockean theory of justice. This chapter treats these anachronisms as relics of classical economics in neoclassical thought.

Utility as the origin of value

The origin of value is a metaphysical or prescientific concept concerning the nature, essence, cause or source of value.² Aristotle held that things have value because of individual wants. Individuals want things because of their usefulness or utility. This theory was repeated in one form or another by the scholastic doctors of the Middle Ages, and it was accepted by Samuel Pufendorf and Francis Hutcheson in modern times. Among the classical economists, J.B.Say gave a lucid statement of it in his *Treatise on Political Economy*.

To this inherent fitness or capability of certain things to satisfy the various wants of mankind, I shall take leave to affix the name utility. And I will go on to say, that, to create objects which have any kind of utility, is to create wealth; for the utility of things is the ground work of their value, and their value constitutes wealth.

(Say 1964 [1821]:62)

Marx (1963–71:3, 119) considered this to be a theory of value in use as opposed to a theory of value in exchange. While the utility theory of the origin of value survived in France and in the universities, Thomas Hobbes broke with the Aristotelian tradition when he traced the origin of wealth back to the labour employed upon the things of nature. He was followed by Petty, Locke and Cantillon, who saw land and labour as the origin of wealth and the cause of value. Quesnay dropped labour and claimed that land was the source of wealth. In the first sentence of the *Wealth of Nations*, Smith dropped land and asserted that the annual production of consumer goods was due to labour. David Ricardo (1951 [1821]:13, 25) followed Smith and called labour the “original source” or “real foundation” of value. Marx (1961–62 [1867–94]:I, 39) wrote that labour “forms the substance of value.”

The early neoclassical economists—Menger, Jevons, Walras and their followers—severely criticized the labour theory of value. They returned to the Aristotelian tradition of utility as the origin of value, but with a critical modification to the older theory. They explained the value of a good by the additional utility or the marginal utility or the final degree of utility associated with an additional unit of it, instead of the usefulness of the total available quantity of a good.

In his *Principles of Economics*, Carl Menger (1950 [1871]:94–109) distinguished between economic goods and non-economic goods. For economic goods, “requirements are larger than the available quantity;” for non-economic goods, “requirements are smaller than the available quantity.” The air we breathe is a non-economic good. We do not economize in the use of it because it is so abundant. Non-economic goods are often called free goods, because they have no value in exchange. Second, in his section on “The Nature and Origin of Value,” Menger (1950 [1871]:115) explained that individuals economize in the use of economic goods, because “these goods attain for them the significance we call *value*.” Finally, the importance of an additional unit of a good diminishes as an individual acquires an additional quantity of it. For an individual who possesses a given quantity of a good, the least important use determines its value. This is the basis of an individual, introspective and subjective theory of value.

Friedrich von Wieser (1989 [1893]:3, 62) put the question more directly in his *Natural Value*. He began with a chapter entitled “The Origin of Value,” in which he asked “Whence do things get their value?” He answered that “the natural value of goods are estimated simply according to their marginal utility.” Marginal utility measures the extra benefit that a consumer enjoys from an extra unit of a good. Wieser used his theory of value to criticize socialism³ and to refute Marx’s theory of value.⁴ Under a regime of perfect competition, von Wieser claimed, individual values determine market prices and social values.

In his *Theory of Political Economy*, W.J. Jevons (1957 [1871]:1, 161) also asserted that “*value depends entirely upon utility*.” He included a section “On the Origin of Value,” in

which he criticized Ricardo's labour theory of value. He thought that Ricardo had the line of causation backwards, so he reformulated it as follows:

*Cost of production determines supply;
Supply determines the final degree of utility;
Final degree of utility determines value.*

(Jevons 1957 [1871]:165)

The final degree of utility is Jevons's phrase for the marginal utility of a good. Both Ricardo and Jevons based their theories of the regulation of value on their theories of the origin of value, that is, Ricardo tried to explain the relative value of commodities in the market by the relative quantity of labour necessary to produce them, whereas Jevons tried to explain the determination of prices by the final degree of utility. They both have unilateral theories of causation, but they are going in opposite directions.

Léon Walras (1954 [1874–77]:201–7) included a lesson entitled “Exposition and refutation of Adam Smith's and J.B.Say's doctrines of the origin of value in exchange” in his *Elements of Pure Economics*, in which he treated three distinct theories of the origin of value. First, he criticized the English solution of Adam Smith and David Ricardo, who traced the origin of value to labour. They cannot explain the value of naturally or artificially scarce commodities, such as rare books and old masters, whose prices are generally unrelated to their labour cost of production. Second, he criticized the French solution of E.B.de Condillac and J.B.Say, who traced the origin of value to utility. They cannot explain why free goods that are useful, like air, have no market price. J.J.Burlamaqui and A.A. Walras, his father, have a third solution, which he called the correct solution. They traced the origin of value to *rareté*, the Walrasian term for marginal utility.⁵

Alfred Marshall had the final word on the origin of value in his *Principles of Economics*. He answered Jevons directly, but also referred to Menger, Wieser and Walras in his famous reply.

The “cost of production principle” and the “final utility” principle are undoubtedly component parts of the one all-ruling law of supply and demand; each may be compared to one blade of a pair of scissors. When one blade is held still, and the cutting is effected by moving the other, we may say with careless brevity that the cutting is done by the second; but the statement is not one to be made formally, and defended deliberately.

(Marshall 1961 [1890]:I, 820)

No single cause of causes exists where individual consumer preferences, the total quantities and the distribution of available resources and the state of technical knowledge simultaneously determine the market price of commodities in a competitive equilibrium. Market forces will tend to alter the price of a commodity if individual preferences change, if either the total quantity of resources or the distribution of them among individuals changes, or if the state of technical knowledge changes. Marshall's parable of the scissors was so devastating a critique of the unidirectional theories of the origin of

value that the very notion of it disappeared from economic literature with the turn of the twentieth century. There is no such thing as the origin of value.

Factors of production

From the classical perspective, the classification of the factors of production as land, labour and capital coincides with the social classes and economic functions of eighteenth and nineteenth century England, France and Western Europe in general. Landlords own land which they rent to capitalist farmers. Capitalists own capital goods in the form of financial assets or in the form of physical assets: barns and granaries, shops and factories, tools and equipment, wagons and ploughs, horses and cattle, materials and supplies, including the provisions for labour, and so on. They can either lend their money at interest or earn a profit from their physical assets, whether they run their businesses themselves or lease them to other persons. They hire labourers for wages. Labourers have no property beyond their meagre personal possessions. They own neither land nor capital goods with which to earn a living, so they must sell their labour services for wages to buy their subsistence.

Smith and Ricardo explained the determination of the rent of land, the profit of capital and wages of labour by separate principles. They look back to a primitive state of nature to account for the quantity and, therefore, the supply of land, labour and capital. Land was originally a gift of nature, so that the quantity of it cannot be increased or decreased. Smith supposed that the whole quantity of land was appropriated when the nation was originally occupied, so that his landlords charged a rent even for land that cannot be cultivated. Ricardo supposed that no rent is paid on the extensive margin of cultivation.⁶ This implies, rather unrealistically, that land is not appropriated until it is needed to feed the population. They both assumed, however, that the supply of land is perfectly inelastic, so that, in the general case, the rent of land is determined by the demand for food, which ultimately depends on the size of the population. Location and fertility also affect rent, because land is inherently heterogeneous in quality.

The quantity of labour is determined by the population principle. The supply of labour depends on the relation between the market rate of wages and the natural rate of wages. For Ricardo the natural rate of wages is determined by the subsistence of labour, which is socially and historically determined. If the market wage rises above subsistence, population grows; and if it falls below subsistence, population declines. Thus, the supply of labour is perfectly elastic at the subsistence wage. Smith's theory is less deterministic, while Marx rejected the Malthusian principle of population outright. Smith, Ricardo and Marx all assume, however, that labour is innately homogeneous, for otherwise their labour theories of value are nonsense.

The quantity of capital, according to Smith, is partly reserved for consumption and partly destined to earn a profit. The quantity of capital is increased by saving, that is, by not consuming a portion of the national product. Existing capital goods consist of a heterogeneous collection of physical things that were produced, but not consumed. Old capital goods are used up in production, so they must be replaced to keep the quantity of capital intact. Capital becomes homogeneous when the capitalist considers making new investments, so that the market tends to establish a uniform rate of profit in all uses and

places, subject to differences in riskiness and agreeableness of different employments. Smith, Ricardo and Marx all predicted that the rate of profit tends to fall as capital accumulates, though they presented different theories of it.

From the perspective of neoclassical economists, the origin of land, labour and capital is irrelevant, because they assume that initial endowments of them are arbitrarily given. They conceive of each consumer as possessing a given quantity of many distinct kinds of productive services. Whether these productive services are called land, labour or capital is immaterial. Here we are now—*ex nunc* as M.A.Copeland (1952:15) called it—looking forward into the future trying to decide whether to consume our productive services or to sell them for income. Individuals may reserve some land for a garden, some capital for a house and furnishings and some labour time for leisure. They may receive income by renting land, by lending capital or by working for wages. With income, they buy consumer goods. The objective of economizing individuals is to obtain the greatest possible satisfaction from their initial endowments. Given the prices in the market and given their individual subjective preferences, they determine what to keep, what to sell and what to buy.

The only analytically significant distinction among the factors of production from a neoclassical point of view is whether a decision compares the present with the future, which generates an explicit or implicit rate of interest. Discounting future benefits or costs may apply to land, labour or capital. Renting land on a long-term lease, entering a long and expensive training programme by a labourer or purchasing a durable machine all involve the passage of time, though a place on the beach may be rented for a day, a labourer may work by the hour or the day and an automobile may be hired for the afternoon, so that discounting the future does not distinguish between land, labour and capital.

Carl Menger distinguishes between goods of the first order and goods of a higher order. Goods of the first order are consumer goods, while goods of a higher order are used to produce other goods. The type of good makes no difference in theory, as Menger makes clear in the case of land.

Land occupies no exceptional place among goods. If it is used for consumption purposes (ornamental gardens, hunting grounds, etc.), it is a good of first order. If it is used for the production of other goods, it is, like many others, a good of higher order. Whenever there is a question, therefore, of determining the value of land or the value of the services of land, they are subject to the general laws of the determination of value.

(Menger 1950 [1871]:165)

Thus, neoclassical economists had no need for separate theories of wages, rent and interest (or profit), because they tried to explain all of them with a unified and general theory. This is the logic that lies behind the title of Philip H.Wicksteed's *The Co-ordination of the Laws of Distribution*, though his marginal productivity theory explains only the demand of factor services, not the supply. Therefore, he does not have a complete theory of income distribution. Walras (1954 [1874–77]:218–19) referred to the classical factors of production, which he called “landed capital,” “personal capital” and

“capital goods proper,” but his theory of the income derived from their services was essentially the same for all of them. He had a unified and general theory.

Jevons independently advocated the same general perspective as Menger when he contrasted the classical and the neoclassical theories of value.

The fact is, that *labour once spent has no influence on the future value of any article*: it is gone and lost for ever. In commerce by-gones are for ever by-gones; and we are always starting clear at each moment, judging the values of things with a view to future utility. Industry is essentially prospective, not retrospective.

(Jevons 1957 [1871]:164)

However, he continued to cling to the hoary concepts of land, labour and capital and to present separate theories of each of them. The influence of the classical economists was evidently so great that the early British neoclassical economists could not make a clean break with the past and fully accept the new point of view.

Ricardian rent

The doctrine of Ricardian rent has been the most durable contribution by classical authorities to economic theory, despite the telling criticisms of it.⁷ W.S.Jevons (1957 [1871]:277), who severely criticized “the orthodox Ricardian school,” which he called “stagnant,” nevertheless gave a lucid statement and implicit endorsement of the Ricardian theory of rent in his *Theory of Political Economy*. From the neoclassical point of view, it is not necessary to go back in time with Ricardo to discover the origin of rent on the first settling of a country or to forecast the future history of mankind. Neoclassical theory is ahistorical.

Jevons discussed two sources of Ricardian rent: first, the rent that arises from the heterogeneity of land; second, the rent that arises from the law of diminishing returns. The idea that land exists in different qualities and that rent increases with the fertility of land was hardly new. Petty discussed it, though he attributed the superior fertility of a tract of land to the capital improvements made to it. Jevons thought that James Anderson had published the essence of Ricardo’s theory of rent for land of different qualities in his *Inquiry into the Nature of the Corn Laws, with a view to the Corn Bill proposed for Scotland* in 1777. Jevons (1957 [1871]:210–11) quoted Anderson at length. He explained how the cost of cultivation increases as the fertility of the land declines. Where all corn sells at a single price, the most fertile land tends to be the most profitable. The extensive margin of cultivation occurs where the cost per bushel equals the price of corn, because cultivation is not profitable where the cost exceeds the price.

Ricardo’s second theory of rent arises from the application of successive increments of labour and capital to land of a given quality. The produce must necessarily lead to diminishing returns, as Jevons (1957 [1871]:212) explained in a famous analogy, because “It is quite impossible that we could go on constantly increasing the yield of one farm without limit, otherwise we might feed the whole country upon a single farm.” Since output increases less than in proportion to the amount of labour and capital employed, the

cost of production per bushel on any farm must rise as output increases. The farmer will not extend production beyond the point where the cost per bushel equals the price of corn, which establishes the internal margin of cultivation. Up to that point, the price of corn exceeds the cost per bushel, so that the farm yields a rent. The total rent for the farm equals total revenue minus total cost of production, where cost includes the wages and profit that are necessary for production. This was illustrated in Tables 9.1 and 9.2 (pages 169 and 176).

The law of diminishing returns is not peculiar to agriculture, however. It applies to all industries and to each productive service when other

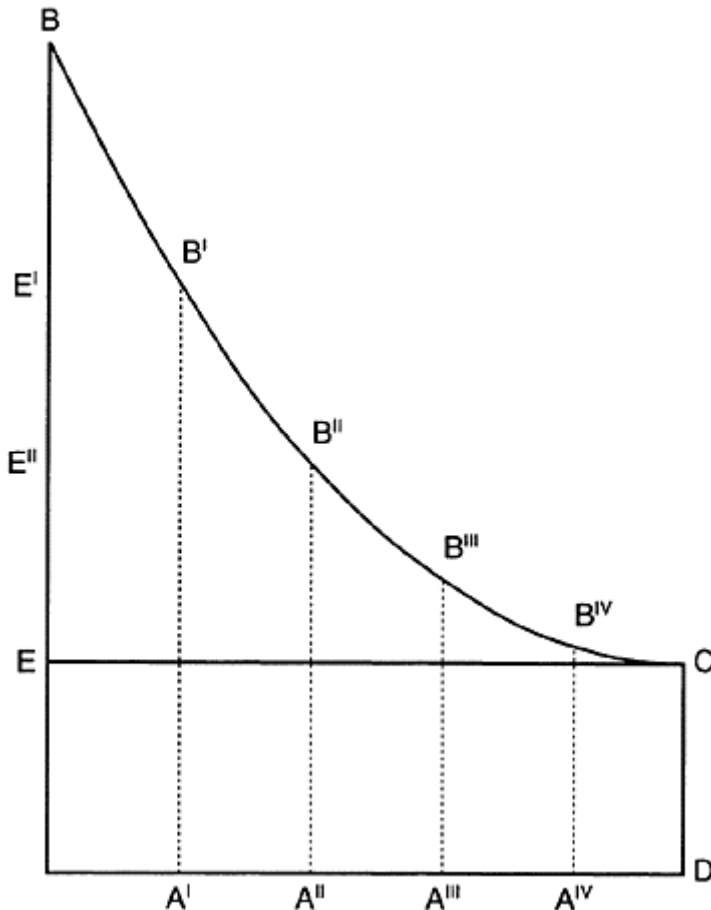


Figure 11.1 Marginal product of labour (source: Clark 1956 [1899]: 182).

productive services are held constant, as Alfred Marshall, P.H. Wicksteed and J.B. Clark were at pains to demonstrate. Figure 11.1 reproduces Clark's diagram for the marginal product of labour. The quantity of labour is measured along the horizontal axis, AD. The marginal product of labour is measured along the vertical axis, AB. As successive increments of labour $[AA^I, A^IA^{II}, \dots]$ are taken into production, the marginal product of labour diminishes along curve BC, on the assumption that capital is held constant. At A^I the marginal product is A^IB^I , at A^{II} it is $A^{II}B^{II}$, and so on. Each extra labourer adds a smaller quantity of output. The total product of labour is the sum of all the additions to output, so that when AD labourers are employed the total product is ABCD. The last labourer produces DC; but, since Clark assumed that labour was homogeneous, any labourer may be considered the last labourer.

The marginal product of the last labourer employed determines the wage rate. On the one hand, if the wage rate were above DC, say $A^{IV}B^{IV}$, some of the AD labourers would not be employed because the last labourer produces only DC. Rather than go unemployed, labourers agree to work for less, so the wage comes down. On the other hand, if the wage rate were below DC, employers would earn an excess profit on every labourer employed. In a competitive regime, they would bid up the wage to DC. Therefore, the total wages bill is ADCE. The area EBC measures a surplus product above the cost of labour. This surplus is like Ricardo's rent of land. Clark's surplus is discussed in the next section.

What Ricardo did not explain and what his followers failed to see is why the supply of land is constant. Ricardo wrote as if the total quantity of land equalled the supply of land, or at least that the supply of land is perfectly inelastic. This hidden assumption is implied by Ricardo's claim that rent can be taxed away without affecting production and that a tax on rent does not affect the price of the product.⁸

From the Austrian point of view, Carl Menger (1950 [1871]:165–8) observed that the landlord could turn his farms into deer parks or ornamental gardens, in which case they would earn no rent and pay no tax.⁹ If land were withdrawn from production and devoted to consumption, output would fall and the price of raw produce would rise. The landlord would weigh the consumer goods that his rent can buy against the pleasures of his parks or gardens to determine how much land to rent and how much to reserve for consumption. Rent measures the cost of his pleasures forgone. Ricardian rent requires that land has no alternative use for the landlord.¹⁰

An inelastic supply curve for land is derived from indifference curve analysis in Figure 11.2, which supposes the landlord has an initial endowment of land, T_0 . Each indifference curve (I, II) shows various combinations of land consumed by the owner, perhaps for recreation, and of other goods purchased with rental income that give the same total utility. Let the top budget line (B_1) reflect an initial rental rate. The initial equilibrium position is point P_1 , where the whole quantity of land is rented, that

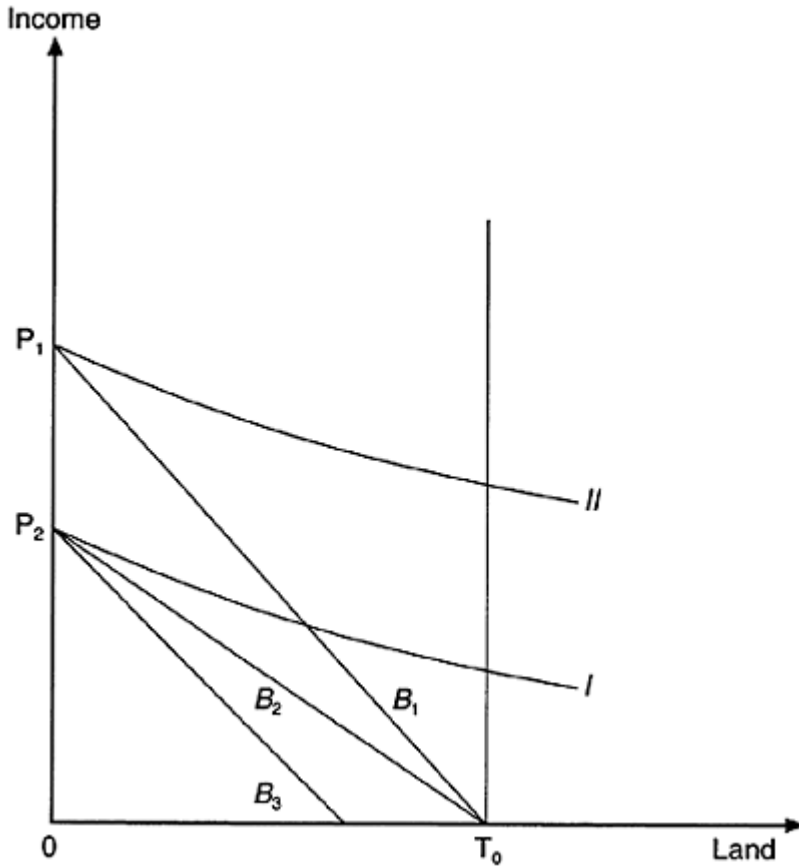


Figure 11.2 Indifference curve diagram for Ricardian rent.

is, no land serves the needs of consumption. P_1 gives the consumer the maximum possible total utility. Now, let the rental rate fall, so that new budget line become B_2 . The new equilibrium position is point P_2 . A tax in proportion to rent could also be levied to give budget line B_2 and equilibrium at P_2 . Finally, construct a third budget line (B_3) by imposing a lumpsum tax equal to P_1 minus P_2 on the initial rental rent. The new equilibrium position is again point P_2 . The income-consumption line and the price-consumption line coincide where the consumption of land is zero. Both the income and substitution effects are, therefore, zero.¹¹ Land has no alternative uses. Since the land is rented at whatever price it will fetch, the supply curve for land is perfectly inelastic.

The empirical validity of the Ricardian theory of rent is not a matter of logic. Nearly all neoclassical economists accepted the empirical validity of the law of diminishing returns, Vilfredo Pareto (1964 [1896–97]) being the only eminent dissenter. They assumed that as successive increments of one input are taken into production, holding at least one other input constant, total output will eventual increase less than in proportion

to the variable input. This theory also assumes that the variable input is homogeneous, that the technology is given and that production is efficient, efficient in the sense that the maximum output is obtained from each set of inputs. The marginal productivity theory of Wicksteed (1992 [1894]:95) explains the demand for the services of all the factors of production with a unified and general theory, which led him to conclude that rent is a “fallacy” and “an inveterate illusion.” However, Ricardian rent comes out of utility theory, not production theory. It requires an inelastic supply of the services of land. It is unlikely that all landlords would rent their land for whatever it will fetch. Messrs Petty-Fitzmaurice of Bowood and Ricardo of Gatcomb Park, indeed, certainly did not rent all their land. They enjoyed their gardens. Thus, whether the supply curve is inelastic is a matter of fact, not theory.

J.B.Clark: A neoclassical Lockean

Utilitarian ethics replaced the doctrine of natural rights long before marginal utility swept away the labour theory of value. Francis Hutcheson had earlier tried to reconcile the utilitarian principle of the greatest good for the greatest number with the Lockean theory of property rights, but his efforts did not survive the onslaught of Jeremy Bentham, who took delight in denouncing the natural law justification of private property. In his “Supply without Burthen,” Bentham argued that the law of nature is not knowable.

Of a natural right who has any idea? I, for my part, I have none: a natural right is a round square [or] an incorporeal body. What a legal right is I know. I know how it was made. I know what it means when made. To me a right and a legal right are the same thing, for I know no other.... As scissors were invented to cut up cloth, so were natural rights invented to cut up law, and legal rights. A natural right is a species of cold heat, a sort of dry moisture, a kind of resplendent darkness.

(Bentham 1952 [1795]:I, 334–5)

A logical affinity exists between the utilitarian theory of morals and the utility theory of value. The object of the ethical theory is choosing what is most useful for society, while the object of the economic theory is choosing what is most useful for an individual. The moral theory is social and examines what ought to be, whereas economic theory gives a formal explanation of individual choice.

W.S.Jevons saw the connection between the two concepts in his *Theory of Political Economy*. He began his chapter on the “Theory of Pleasure and Pain” by endorsing and by quoting from Bentham’s (1948 [1789]) *Principles of Morals and Legislation*. Jevons wrote:

PROCEEDING to consider how pleasure and pain can be estimated as magnitudes, we must undoubtedly accept what Bentham has laid down upon this subject. “To a person,” he says, “considered *by himself*, the value of a pleasure or pain, considered *by itself*, will be greater or less according to the four following circumstances:

- (1) Its *intensity*.
- (2) Its *duration*.
- (3) Its *certainty* or *uncertainty*.
- (4) Its *propinquity* or *remoteness*.

These are the circumstances which are to be considered in estimating a pleasure or a pain considered each of them by itself."

(Jevons 1957 [1871]:28)

Jevons then went on to give an economic interpretation of pleasure and pain, which he called utility and disutility.¹² While he accepted the utilitarian theory of morals, he interpreted pleasure and pain in the widest possible sense without any necessary hedonistic implications.

The problem of economics, Jevons (1957 [1871]:37) wrote, was "*to maximize pleasure*" The marginal utility of goods diminishes, while the marginal disutility of work eventually increases. Equilibrium occurs at that point where the marginal disutility of the last hour worked equals the marginal utility of those goods which the last hour can purchase. Up to that point the extra benefit exceeds the extra cost; beyond that point the extra cost exceeds the benefit. Therefore, at that point utility is maximized. In his *Alphabet of Economic Science*, Philip H. Wicksteed applied this principle to Robinson Crusoe.

Robinson Crusoe, when industrial equilibrium is established in his island, so distributes his labour that the last hour's work devoted to each several task results in an equivalent mass or body of satisfaction in every case.

(Wicksteed 1970 [1888]:124)

Jevons (1957 [1871]:173) illustrated this theory with a simple graph. Marshall's parable of the little boy picking blackberries tells the same story. J.B. Clark (1956 [1899]:385) drew a diagram similar to the one by Jevons.

This simple economic theory becomes an ethical theory, however, when it is extended to more than one individual in society and when it is used to evaluate economic alternatives, something which requires many qualifications.¹³ This is a route which economics followed over the next century, but J.B. Clark returned to the theory of natural law. He thought that capitalism was under attack by powerful trade unions and their strikes, by monopolies and trusts, by Henry George, the Fabian socialists and other social reformers.

In a series of articles and books, he presented an ideological defence of capitalism with an ethical theory which wedded the marginal productivity theory and a Lockean theory of property rights. Clark began his *Distribution of Wealth* with the bold assertion that

It is the purpose of this work to show that the distribution of the income of society is controlled by a natural law, and that this law, if it worked

without friction, would give to every agent of production the amount of wealth which that agent creates.

(Clark 1956 [1899]:v)

He extended Locke's rule that everyone was entitled to the fruits of their labour to include both labour and capital, land being treated as a species of capital. He maintained, therefore, that private property should rest on the rule "to each what he creates." The distribution of income by any other rule would be "institutional robbery." If society did not assign to every agent of production what was theirs by the right of creation, Clark (1956 [1899]:9) warned, "there would be at the foundation of the social structure an explosive element which sooner or later would destroy it." The duty of the state was to protect private property.

He demonstrated his thesis with two diagrams like Figure 11.1, one for labour and one for capital. Clark (1956 [1899]:63) treated labour as if it were homogeneous on the assumption that "a labourer of a high grade embodies in himself more units of labour than does an inferior one." He treated capital as a perfectly mobile, freely transmutable, previously accumulated fund of wealth, so that capital too is homogeneous. Particular capital goods exist in a concrete physical form, but they are replaced as they depreciate. Thus, capital is like a sum of money: "A value, an abstract quantum of productive wealth, a permanent fund," as Clark (1956 [1899]:119) put it. Perfect competition is assumed to prevail in all markets.

Labour and capital are both subject to the law of diminishing returns. When capital is held constant, the marginal product of labour diminishes as more labourers are employed. Similarly, the marginal product of capital diminishes when labour is held constant. We have already seen how, in a regime of perfect competition, the wage of labour tends to equal the marginal product of the last labourer employed, DC in Figure 11.1. Since all labourers are treated as if they were identical, any one may be considered the last labourer. Therefore, each labourer and labour in general receives the value of what labour creates. Now, turn to capital. Let the axis AD measure the fund of capital in terms of dollars. Holding the quantity of labour constant, the marginal product of capital diminishes until the last dollar of capital produces DC, which equals the interest on capital. Since all capital is the same, the last unit of capital and capital in general receive the value of what they create. Thus, under a regime of perfect competition, income is distributed according to the natural law that each agent receives the value of what it creates. Capitalism is in harmony with the laws of nature.

Clark's theory is subject to serious questions without quibbling about matters such as whether capital and labour are homogeneous, whether markets are perfectly competitive, whether governments intervene in the marketplace, whether Say's Law obtains so that no unemployment exists, whether capital can be valued independently of the rate of interest or whether the production function is homogeneous of the first degree.¹⁴

First, what determines the supply of labour and the supply of capital? Clark appears to assume, without much justification, that these supply curves are perfectly inelastic. He followed the example of Ricardian rent, which Ricardo did not apply to labour and capital. Clark's analysis implies that all income could be taxed away without affecting production, which, of course, he did not believe since he discussed disutility later.

Second, how is capital distributed among the people? How are labour skills distributed? In the case of land, it makes an enormous difference whether Exxon Mobil or the Sierra Club owns the State of California. Clark apparently takes the neoclassical approach of assuming that all productive services are distributed in some way as initial endowments to someone without explaining how or why. Therefore, he does not answer the question: why are the rich rich and the poor poor? Locke, Cantillon, Quesnay, Hutcheson, Hume, Smith, Ricardo and Marx viewed society as divided into two classes: a class of property owners and a class of propertyless labourers. Whether labour receives the value of its marginal product is irrelevant to the question of whether labour is exploited, according to Marx, who thought labour was paid at its full value. If property were evenly distributed across the population, then labour could not be exploited. Joan Robinson emphasized the importance of the distribution of endowments in her article on "Marginal Productivity."

As a matter of fact in the orthodox teaching the theory of distribution has nothing whatever to say, one way or the other, about the distribution of income. The theory purports to be concerned with the distribution of the product of industry between the factors of production. It says nothing about how the factors are distributed amongst the people.

(Robinson 1980 [1967]:IV, 129)

Thus, without a theory of the distribution of endowments, neither J.B. Clark nor neoclassical economists in general can explain the fundamental reason for economic inequality in modern society.

12

Concluding points

Two perspectives: scientific and historical

The labour theory of value can be studied from two perspectives: its scientific contribution to modern economics and its historical development from earlier literature. These two perspectives raise two different sets of questions and conclusions. Historically economic theory emerged from moral philosophy, so that the historical approach cannot ignore metaphysical, ethical, ideological, political and other unscientific issues; whereas modern economists have sought to purge the subject of propositions that are not logically valid and empirically credible, where credibility embraces a variety of standards, such as predictability, verifiability or falsifiability. The doctrine of the wages fund, for example, was rejected after a century of currency, because it violates the logic of the neoclassical rule that by-gones are forever by-gone. Wages are paid from current production, not out of a previously accumulated stock of goods. The population principle was rejected on empirical grounds after it became apparent that real wages in England had grown substantially during the course of the nineteenth century.

J.A.Schumpeter (1954:3) titled his famous book *History of Economic Analysis*, because he wanted to write “the history of the intellectual efforts that men have made in order to understand economic phenomena or, which comes to the same thing, the history of the analytic or scientific aspects of economic thought.” Schumpeter (1954:111) recognized that Adam Smith meant “the whole product” in a sentence referring to “the produce of labour;” however, “when we are interested in scientific analysis only, we have no difficulty discarding this sentence.” Thus, a strict adherence to the scientific perspective requires the scientist to discard substantial portions of the historical labour theory of value. Smith’s claim that labour is the original source of all commodities, that labour is the origin of value, must be discarded because it is unscientific. Few people, it should be added, spent more time on the metaphysical, ethical, ideological, political and other unscientific issues in the history of economics than Schumpeter.

Mark Blaug (1978:vii) called his popular textbook *Economic Theory in Retrospect* because he wanted to use the history of economic thought “to teach contemporary economic theory.” He began his book by stating,

This is a critical study of the theories of the past: it concentrates on the theoretical analysis of leading economists, neglecting their lives, their own intellectual development, their precursors, and their propagators. Criticism implies standards of judgment, and my standards are those of modern economic theory.

(Blaug 1978:1)

While he is undoubtedly correct that it is impossible to judge past economists on their own terms, his approach faces the problem of misinterpreting past economists by reading their work in terms of modern theories and concepts. The concept of the origin of value is a case in point, for nothing corresponding to it survives in modern economic theory.

The early neoclassical economists criticized and rejected the classical doctrine that labour is the origin of value. They claimed that utility is the origin of value, as discussed in the previous chapter. In his *Principles of Economics*, Carl Menger (1950 [1871]:115) wrote a section on “The nature and origin of value.” Friedrich von Wieser (1899 [1893]:3) began his *Natural Value* with a chapter entitled “The Origin of Value;” and W.S. Jevons (1957 [1871]:1, 161) began his *Theory of Political Economy* with the assertion that “*value depends entirely upon utility*” which he discussed in his section “On the Origin of Value.” In his *Elements of Pure Economics*, Léon Walras (1954 [1874–77]:201–7) devoted a lesson to “Exposition and refutation of Adam Smith’s and J.B.Say’s doctrines of the origin of value in exchange.” The concept of the origin of value may well be metaphysical, because nothing corresponds to it in observed reality, but it is unquestionably a concept upon which both the classical and early neoclassical economists built their theories of value. It is not a scientific concept, but an historical one. The scientific perspective distorts the history of economic thought.

Two fallacies: materialist and retrospective

From the scientific perspective, two fallacies are embedded in the labour theory of value: the materialist fallacy that production consists of physical things, and the retrospective fallacy that commodities embody the labour of past times. Both of these fallacies come out of the analytical framework of Plato and Aristotle, who began their economic inquiries with an analysis of the origin of the city state. Hobbes and Locke called this the state of nature. Hobbes claimed that labour produced commodities from matter limited by nature. Locke counted up the past labour needed to produce the bread we eat and concluded labour accounted for nine-tenths, if not 99 per cent, of the value of commodities, the value of unimproved land being almost worthless. Thus, commodities are physical things because they contain land, however worthless, and their production required the labour of past times. From the scientific perspective, the materialist concept is a fallacy, because the services of Smith’s opera singers and opera dancers have value in exchange, but they are not physical things. The retrospective view of production is a fallacy, because by-gones are forever by-gones. Whatever a commodity may have originally cost to produce has nothing whatsoever to do with its price today.

The materialist and retrospective concepts are fallacious from the point of view of neoclassical value theory, but they are logically coherent as a hypothetical history of the physical source of commodities. Let us suppose a primordial time existed before the production of the first tool. Some person must have produced the first tool, an instrument of production that survived its own production. Along the way, labour employed tools to produce new physical commodities, including new tools. The means of production did not fall to earth like manna from Heaven. So today, physical commodities are produced by labour from previously existing materials using previously produced capital goods. While it would be impossible to reckon up all the labour needed to produce the bread we

eat, as Locke recognized, nonetheless the physical aspect of production stretches back to primordial times. This has nothing to do with the market price of commodities. It is a production theory of commodities, not a labour theory of value per se.

Adam Smith (1976 [1776]:65) began his economic analysis in “that early and rude state of society that precedes both the accumulation of stock and the appropriation of land.” This corresponds to the Hobbesian and Lockean states of nature. The first sentence of the *Wealth of Nations* states that “The annual labour of every nation is the fund which originally supplies it with all the necessities and conveniencies of life.” As Schumpeter recognized, Smith meant that all commodities were originally produced by labour. The materialist and retrospective views of Smith lie behind his concept of productive labour, for example, which “is, as it were, a certain quantity of labour stocked and stored up to be employed, if necessary, upon some other occasion” (Smith 1976 [1776]:330). Ricardo (1951 [1821]:25) extended this line of thought to the regulation of value in civil society when he discussed the past labour needed to produce stockings: “The aggregate sum of these various kinds of labour, determines the quantity of other things for which these stockings will exchange.” Marx (1961–62 [1867–94]:I, 187) repeated Ricardo’s reasoning when he wrote: “The whole of the labour in the yarn is past labour.” The notion of past labour came from Petty, who derived it from Hobbes’s production theory of commodities. Ricardo and Marx turned a production theory of commodities into a production theory of values.

The persuasive authority of the labour theory of value rests on the idea of tracing the physical origin of commodities back to the labour used to produce them from the early ages of society and on the related ethical theory that property rights originate in the labour spent producing commodities. Classical economists became so shackled to these philosophical preconceptions that they could not reject their labour theory of market prices, even though they all found errors in the work of their predecessors. Modern economists abandoned these concepts, perhaps because they sound like metaphysics, or at least metaeconomics, but the labour theory of value cannot be understood without them. Neoclassical economists demonstrated to their own satisfaction that the labour theory of value was unscientific and could not explain the empirical phenomenon of market prices, but many of them still accepted some of the philosophical preconceptions of the classical school.

Two misinterpretations: labour command and exploitation

Two labour theories that have frequently been misinterpreted are Adam Smith’s real price of commodities, mistakenly called labour command, and Karl Marx’s exploitation of labour. These theories were discussed in greater detail in Chapters 8 and 10, respectively. Both theories are based on the doctrine that labour is the active agent that produced all commodities and, therefore, the origin of value. While modern economists reject this doctrine, Smith and Marx believed it.

Smith presented his theory of the real price of commodities, his universal measure of value, in Chapter 5, Book I, of the *Wealth of Nations*. The logic of Smith’s measure of value is based on two critical assumptions. First, the doctrine that labour is the origin of value, that labour is the active agent which produces all commodities from the material

things found in nature. Second, the claim that “Equal quantities of labour, at all times and places, may be said to be of equal value to the labourer” (Smith 1976 [1776]:50), which means that labour is homogeneous across time and space and that the sacrifice which labourers make, whether measured in terms of disutility or leisure forgone, is always the same, at least for the same occupation. The bricklayer in ancient Egypt makes the same sacrifice for an hour of work as the bricklayer in modern Rome. Whichever labourer can purchase a greater quantity of goods is the richer than the other. Thus, Smith (1976 [1776]:50) concluded, labour “may sometimes purchase a greater and sometimes a smaller quantity, but it is their value which varies, not that of the labour which purchases them.” The market equalizes the compensation of different occupations, as discussed in Chapter 10, Book I. Labour sacrifice is his universal measure of value, which he called the real price of commodities.

The confusion over Smith’s measure of value arises from the context in which he wrote Chapter 5, Book I, which was the historical context of how society progressed from a state of nature to civil society. As soon as the division of labour occurs, each labourer seeks to exchange the surplus produce of his own labour for the produce of other labourers, as discussed by Plato, Aristotle and, no doubt, by hundreds of other authorities, including Francis Hutcheson. In his *System of Moral Philosophy*, Hutcheson (2000 [1755]:I, 288–9) wrote that, with the division of labour, each labourer “procures a great quantity of goods of one kind, and can exchange a part of it: for such goods obtained by the labours of others as he shall stand in need of.” This is the context in which Smith wrote

But after the division of labour has once thoroughly taken place, it is but a very small part of these with which a man’s own labour can supply him. The far greater part of them he must derive from the labour of other people, and he must be rich or poor according to the quantity of that labour which he can command, or which he can afford to purchase.

(Smith 1976 [1776]:50)

The labourer is rich or poor according to the produce of labour that he can purchase or command, where he assumed throughout the *Wealth of Nations* that labour is the origin of value, that labour produces all commodities, as he stated in his first sentence.

In addition to his real price of commodities, his universal measure of value, Smith presented a second labour measure of value, which he called the real price of labour, the wages or the subsistence of the labourer. This is frequently called Smith’s theory of labour command, but it is only a “popular” measure, not his universal measure of value. Smith used the phrase labour command in the context of both his real price of commodities and his real price of labour.

The logic of Marx’s theory of exploitation is based on two propositions: one economical, the other sociological. The economical proposition is Smith’s doctrine that labour is the origin of value. In *Capital*, Marx (1961–62 [1867–94]:I, 38, 45) wrote that labour is “the value-creating substance,” that commodities are “mere homogeneous congelations of undifferentiated labour,” that “the magnitude of the value of a commodity represents only the quantity of labour embodied in it.” Only the socially necessary labour time embodied in the production of commodities contributes to their value in exchange.

The sociological proposition is that property-owning capitalists earn profits by hiring propertyless labourers. Labour is “free in the double sense,” as Marx (1961–62 [1867–94]:I, 169) put it: “he can dispose of his labour-power as his own commodity,” but “he has no other commodity for sale, is short of everything necessary for the realisation of his labour-power.” Labour is propertyless. When the labourer goes to work, the day is divided into two parts: necessary working time and surplus working time or the paid labour time and the unpaid labour time or the subsistence of the labourer and surplus value of the capitalist. Wages buy the subsistence of labour. Surplus value takes the form of profit, rent and interest. Labour is exploited because labour does not receive the whole produce of labour, which is the total product of society.

Confusion arises from the transformation problem. Böhm-Bawerk and many other authorities demonstrated that Marx’s labour values cannot be transformed into competitive market prices. Marx failed to transform the labour values of inputs, especially constant capital, by output prices. Modern economists have a fixation with this idea, perhaps because they stress how prices allocate resources, but they ignore how property is distributed. They see the transformation problem as a refutation of the Marxian theories of value and exploitation. No one has ever demonstrated how to transform Marx’s labour values into market prices on Marx’s own assumptions, however, because his constant capital includes old, obsolete capital goods for which no current output prices exist. This whole issue is irrelevant to the exploitation of labour. Exploitation occurs because labour produces the whole product, but receives only a part of the product in the form of wages. The fact of property incomes is sufficient evidence for Marx to prove that labour is exploited, because he believed that labour, past and present, produced all commodities.

Historical significance

The labour theory of value was an important step in the development of economics, even though it was a weak tool from perspective of scientific economics. Today, the historical significance of Smith, Ricardo and Marx rests more on their political and ideological influence on the modern world than on their scientific work.

Adam Smith had a vision that the best way to promote the wealth of the nation was to allow individuals to pursue their self-interest unaided and unimpeded by policies of state preference or restraint, provided they obeyed the laws of justice. He argued that it was impossible for the government to supervise the activities of private individuals and, furthermore, that it was unnecessary because market forces tended to allocate resources and distribute income spontaneously without government intervention. He criticized the whole catalogue of mercantilist policies of special privileges and obstacles to trade. Francois Quesnay and the physiocrats became well-known advocates of laissez-faire before Smith published the *Wealth of Nations*, but their influence was blunted by their untenable theory that land was the source of all value and that manufacturers were unproductive labourers. For this reason, Smith became the champion of economic liberalism.

The political influence of David Ricardo is actively felt today under the names of monetarism and globalization. While Petty, Locke, Cantillon and Hume, among many

others, had previously stated the quantity theory of money in one form or another, Ricardo occupied a pivotal position in history as the principal critic of the Bank of England during the crisis of the Restriction Act of 1797. His remedy became the nineteenth century gold standard. He also presented his theory of comparative advantage in terms of his labour theory of value. More sophisticated forms of his theory are taught today, but Ricardo is still cited as the principal author of the policy of international free trade and globalization.

Karl Marx needs no introduction. He turned the labour theory of value of Smith and Ricardo into an ideological attack on the capitalist world. He delivered the political message that inspired the communist revolutions of the twentieth century. He was the prophet of communism.

The economic theories of Smith, Ricardo and Marx are often debunked today; yet, few theorists have accomplished more than they did. Their ideas represent the triumph of economics in the modern world.

Notes

1

Introduction

- 1 The economic views of Plato and Aristotle are discussed by J.Bonar (1893), D. G.Ritchie (1899, 1900), L.H.Haney (1949 [1911]), A.A.Trever (1978 [1916]), J.A.Schumpeter (1954), H.W.Spiegel (1971), B.Gordon (1975), S. T.Lowry (1979), among others.
- 2 Like Plato, Adam Smith emphasized (1) that the dexterity and productivity of labourers improves as they specialize in particular occupations, (2) that specialization allows work to be done in a timely manner and (3) that the division of labour is limited by the extent of the market. Unlike Plato, however, Smith thought (4) that labourers possessed the same innate abilities before they choose their occupations and (5) that the division of labour also gives rise to inventions and technological improvements that increase output. Plato was one of many well-known authorities who discussed the division of labour before the time of Adam Smith, as V.Foley (1974) has documented. Compare P.J.McNulty (1975).
- 3 Karl Marx (1961–62 [1867–94]:I, 146–55), who cited Aristotle, later made the same distinction where he contrasted “selling in order to buy” with “buying in order to sell.” The farmer sells his grain in order to buy his clothing, whereas the capitalist hires labour in order to earn a profit. The purpose of exchange for the farmer is consumption; for the capitalist it is profit, which has no limit.
- 4 The history of the debates over usury is ably discussed by E.von Böhm-Bawerk (1959 [1884–1912]), H.Sewall (1971 [1901]), G.O’Brien (1968 [1920]), B. W.Dempsey (1948) and B.Gordon (1975).
- 5 Léon Walras (1954 [1874–77]:93) called this the equation of exchange: $v_a Q_a = v_b Q_b$, where v is the value per unit and Q is the quantity of commodities A and B, respectively. The quantities are observable in reality. The values would be expressed in terms of marginal utility by neoclassical economists. Walras used his equations of exchange to derive reciprocal demand and offer curves and to illustrate the establishment of general equilibrium in the two commodity case. For Aristotle, the values represented needs, wants or demand and, therefore, correspond to subjective values like utility. Karl Marx (1961–62 [1867–94]:I, 59–60) praised the “brilliance of Aristotle’s genius” for discovering that equal values are given in exchange, except that for Marx the values are labour values.
- 6 J.J.Spengler (1955:388) accurately concluded “that Aristotle, with his emphasis upon demand and his neglect of cost, was a forerunner of the Austrian rather than the English classical school.” Neither the principle of diminishing marginal utility nor the labour cost of production are explicit in his theory of exchange. Emil Kauder (1953) also makes a strong case for the treatment of utility by Aristotle. He claims that the marginal utility theory might have been discovered before the time of H.H.Gossen, C.Menger, W.S. Jevons and L.Walras, if Adam Smith had not dismissed utility as a theory of value. J.Soudek (1952) gives an excellent account of Aristotle’s theory of justice as it applies to exchange. Aristotle distinguishes between the origin of value, which is based on want satisfaction, the regulation of value, which is explained by reciprocal demand and the measure of value, which is the function of money.
- 7 The antithetical notions that self-interest is essential to economic efficiency and at the same time that benevolence should govern human relations were later advanced by Francis

- Hutcheson (1747:i), who cited Aristotle (along with Plato, Cicero, Grotius and Pufendorf) as one of his authorities in his *Short Introduction to Moral Philosophy*. Hutcheson was Adam Smith's professor of economics.
- 8 Rudolf Kaulla (1940) and Emil Kauder (1953), in their classic works, trace the line of development from Aristotle's theory of value to the scholastic theory of the just price to neoclassical theory of value.
 - 9 Richard F. Teichgraeber III (1986:21) is of the opinion that "for Hutcheson, Hume, and Smith, Grotius was the key figure in the 'modern' natural law tradition." Raymond de Roover (1955:188) saw the residual influence of the scholastic doctors: "In the case of Adam Smith, the ascendance which links him to scholasticism passes through his teacher, Francis Hutcheson, Samuel Pufendorf, and Hugo Grotius." The scholastic doctors were, of course, Aristotelean.
 - 10 The life and work of Grotius are treated by J. Bonar (1893), D.G. Ritchie (1900), D.J. Hill (1901), H. Sewall (1971 [1901]), W.S.M. Knight (1925), G. H. Sabine (1963 [1937]), E. Dumbauld (1969), R. Tuck (1979) and C. Gellinek (1983), among others.
 - 11 In his review of the literature on the origin of property in *De iure praedae*, Grotius (1964 [1604]:226–33) cited many ancient authorities (Hesiod, Horace, Cicero, Avienus, Seneca, Quintilian, Hermogenianus, Virgil, Ovid, Thucydides, Ulpian, Plautus, Pomponius, Scaevola, Celsus, Glassators and the Institutes of Justinian) as well as early modern jurists (Castrensis, Vázquez and Duaren).
 - 12 The literature on the philosophy of property rights is large and growing. See, for example, Andrew Reeve (1986), Jeremy Waldron (1988), Thomas A. Horne (1990) and A.J. Simmons (1992).
 - 13 The interested reader should consult Knud Haakonssen (1999 [1985]), who has presented a scholarly discussion of the historical line of development in natural law philosophy from Grotius through Adam Smith, including the Lockean theory of property rights. Smith (1976 [1759]:341–2) was a great admirer of the laws of war and peace by Grotius.
 - 14 The life and work of Pufendorf are discussed by H. Sewall (1971 [1901]), H. Wehberg (1931), W. Simons (1934), J.A. Schumpeter (1954), among others.
 - 15 In his "Introduction" to *De jure naturae et gentium*, Walter Simons (1934) noted that while both Grotius and Pufendorf cited hundreds of authors, Grotius favoured legal precedents and legal history, whereas Pufendorf looked more often to the Bible, classical literature and contemporary authorities.
 - 16 Sir William Petty (1963 [1672]:181) made the same point in the same year, so the idea that ordinary foodstuffs were a good measure of value must have been widespread.
 - 17 In addition to Vaggi (1987), authorities who stress this line of thought include Karl Marx (1963–71:1, 44), who called the physiocrats "the true fathers of modern political economy" because of their analysis of the function of capital in production. Even though their theory was limited to agriculture, Marx praised the physiocrats for explaining how the capitalist farmer bought labour power at a subsistence wage and earned surplus value in the form of rent. T. Aspromourgos (1996:167) claimed that Smith was "the most important intellectual link between Petty-Cantillon-Quesnay and Ricardo." A. Brewer (1992a: 183), in his book on Cantillon, found that "many of the central elements of classical theory have recognizable roots in Cantillon's work." J.A. Schumpeter (1954:218) offered an analogy: "Cantillon was to Quesnay, and Petty was to Cantillon, what Ricardo was to Marx."
 - 18 E. Cannan (1964 [1896b]:xxv) agreed with Bonar that we should "look in Adam Smith's work for important traces of the influence of Francis Hutcheson, who was Professor of Moral Philosophy at Glasgow from 1729 to 1746." W.R. Scott (1966 [1900]:121) counted David Hume as an important influence on Smith, though he believed that Hutcheson had a greater impact on him. C. Gide and C. Rist (1948 [1915]:70), the respected French authorities on the physiocrats, ranked Francis Hutcheson in "first place" and David Hume "a near

second” among those who influenced Smith. W.L.Taylor (1965:162) agreed and argued that the contribution of Hutcheson and Hume had been underrated.

2

Sir William Petty

- 1 Notable commentators on Petty include Karl Marx (1963–71), J.Bonar (1893), W.L.Bevan (1894), C.H.Hull (1963 [1899], 1900), E.A.J.Johnson (1937), M.Beer (1967 [1938]), J.A.Schumpeter (1954), W.Letwin (1965), M.Bowley (1973), A.Roncaglia (1985), T.Aspromourgos (1986, 1988) and T.W.Hutchison (1988).
- 2 For the life and turbulent times of Petty, see the sketches by his contemporaries—John Aubrey (1898), Samuel Pepys (1897–1900) and J.Evelyn (1901)—as well as the accounts of J.P.Prendergast (1868), E.Fitzmaurice (1875–76, 1895), C.H.Hull (1963 [1899]), Marquis of Lansdowne (1967 [1927]), E. Strauss (1954) and A.Roncaglia (1985).
- 3 Geoffrey Keynes (1971) published an annotated bibliography of Petty’s works.
- 4 Petty’s attraction to the research agenda of Bacon may have been implanted in him by Thomas Hobbes, who, along with the playwright Ben Jonson and the poet George Herbert, assisted Bacon with his *Novum Organum* after he was forced to resign from the offices of Lord Keeper of the Seal and Lord High Chancellor under James I.
- 5 Petty (1810 [1648]:12) wanted the different parts of the book on trades to be “equally luciferous, although not equally lucriferous,” a line which earned him two firsts in the *Oxford English Dictionary*. His proposed book was intended to show how to produce various commodities, so that people could escape from the restrictive practice of trade secrets.
- 6 In his *Theories of Surplus Value*, Karl Marx (1963–71:1, 356) is not accurate where he claimed that “For Petty the *surplus* exists only in two forms: *rent of land* or *rent of money* (usury).” Petty estimated the yield (or profit) for the stock of produced capital goods at £7 million, whereas he put the whole stock of money at £6 million. See Tables 2.1 and 2.2.
- 7 For the calculations in *Political Arithmetic*, D.P.O’Brien (1997:152) claims that Petty should have discounted income streams to arrive at his present values, instead of using the number of years’ purchase. The calculations in *Verbum Sapienti* treat steady states, where tomorrow is the same as today and income is a perpetuity, so the number of years’ purchase gives the proper discount factor.
- 8 Marian Bowley (1973:179) has argued that Petty had a backward-bending supply curve for labour, citing Petty’s (1899 [1676]:274) statement that labour is scarce when corn is plentiful.
- 9 J.A.Schumpeter (1954:217n) observed that, even though Petty held land and labour were both the origin of value, he “nevertheless, considered capital as accumulated labour.”
- 10 Adam Smith’s four maxims on taxation (proportionality, certainty, convenience and economy) appear in Petty’s *Treatise of Taxes* in one form or another. Petty (1963 [1662]:32, 33, 21, 63) thought taxes should be “proportionable,” not at the whim of “some temporary Assessor,” “convenient,” and “speedily and inexpensively collected.”
- 11 In his *Theories of Surplus Value*, Karl Marx (1963–71:1, 174 and elsewhere) noted the similarity of Smith to Petty on the supposed superiority of durable commodities: “It must be recognized that at the same time Adam Smith also falls back more or less into the Mercantilist conception of ‘permanency’—in fact, inconsumability.”
- 12 In his criticism of the physiocratic doctrine that only agricultural labour is productive, David Hume, Adam Smith’s best friend, stressed the importance of manufacturing and trade. Hume (1964 [1752]:III, 294–5) called an accumulation of physical commodities the “real riches and strength” of a nation, which are a “stock of labour...stored up against any public exigency.” This suggests that manufacturers and traders are Hume’s productive labourers.

- 13 While Edwin Cannan (1937:xli) recognized the priority of Petty, he claimed that Adam Smith took the concepts of capital and unproductive labour from the physiocrats. Since these concepts appear in Petty, who passed them on to Cantillon, Quesnay may have learned them from Cantillon.
- 14 This issue is discussed by Karl Marx (1963–71:1, 356), J.K.Ingram (1893:51), C.H.Hull (1963 [1899]:lxxiii), E.A.J.Johnson (1937:102–3), M.Beer (1967 [1938]:168–70), E.Roll (1956:106–7), A.V.Anikin (1979:62–6), A. Roncaglia (1985:79–88) and T.Aspromourgos (1996:22–30), among others.
- 15 The authorship of the *Natural and Political Observations Upon the Bills of Mortality* has been a subject of controversy. Evelyn and Aubrey gave Petty credit for the *Observations*. However, a thorough investigation of the evidence led Charles Hull (1899:xxxix–liv) to conclude, on the balance of probabilities, that John Graunt was the author. Since that time, however, P.D.Groenewegen (1997 [1967]) has offered new evidence supporting Petty. See also *The Petty Papers* by the Marquis of Lansdowne (1967 [1927]).
- 16 George Wittkowsky (1943) has argued that Petty, along with Graunt, D’Avenant, and others, was the object of Swift’s satire. Petty’s jocular dream or ridiculous digression would have been particularly offensive to Swift. William Letwin (1965:149–51) makes a convincing case that the style and substance of Petty’s work provoked Swift (1955 [1729]) to write *A Modest Proposal, for preventing the children of poor people in Ireland from being a burden to their parents or country, and making them beneficial to the public*.

3

John Locke

- 1 Recommended biographies of John Locke includes those by Peter King (1991 [1830]), H.R.Fox Bourne (1876), T.Fowler (1899), M.Cranston (1957), J.R. Milton (1994), among others.
- 2 Copies of the relevant letters are reproduced by H.R.Fox Bourne (1876:I, 130–1) and M.Cranston (1957:96–7).
- 3 Josiah Child presented his proposal for lowering the rate of interest in his *Brief Observations Concerning Trade, and Interest of Money*. William Letwin (1965) has given a useful account of the historical setting and policy issues in a chapter on Child in his *Origins of Scientific Economics*. See also Letwin (1959), *Sir Josiah Child: Merchant Economist*.
- 4 Peter Laslett (1988) and Richard Ashcraft (1994) maintain that most of the *Two Treatises* was written a decade or more before it was published in 1690.
- 5 Locke had five of Petty’s tracts in his library, more than any other writer on economics, including his *Quantulumcunque concerning Money*, his *Treatise of Taxes*, and *Political Arithmetic* (Harrison and Laslett 1971:207–8). Locke and Petty were also both close friends of Robert Boyle, and all three were members of the Royal Society.
- 6 See David G.Ritchie, *Natural Rights* (1895), who contrasts the state of nature presented by Aristotle, Thomas Aquinas, Hooker, Hobbes, Locke and Rousseau, among others. The conception of natural rights extends to life, liberty, toleration, freedom of contract, freedom from oppression, equality, property and happiness.
- 7 The philosophical literature on Locke’s labour theory of property rights is enormous. See the critical work by M.H.Kramer (1997), for example, who cites many authorities. The point at issue here, however, is the connection between the labour theory of property rights and the labour theory of value, not the political or philosophical influence of Locke.
- 8 In his *Ideal Foundations of Economic Thought*, Werner Stark (1944b:10–18) has given a compelling interpretation of the economic significance of Locke’s theory of property rights. He argues that it joins together a subjective theory of value (utility), an objective theory of

value (labour) and an ethical standard for capitalism (utilitarianism). The subjective theory arises from the condition that things must be useful to have value. The labour required to produce things is an objective quantity, at least in principle. If pleasure is equated with utility and if pain is equated with labour, then, turning to moral philosophy in his *Essay concerning Human Understanding*, published in 1690, Locke (1963 [1823]: 231) wrote: "Things then are good or evil, only in relation to pleasure and pain."

- 9 The classical and early neoclassical concepts of the origin of value are compared and discussed at greater length in Chapter 11, "Classical relics in neoclassical thought."
- 10 Karen Vaughn (1980:88) questioned the influence of Petty on Locke when she wrote: "It is impossible to say for certain that Locke was influenced by Petty," but she is in the minority. In his *Theories of Surplus Value*, Karl Marx observed, with respect to Sir Dudley North's *Discourses upon Trade*, "This work, like Locke's economic writings, is in direct connection with and directly based on Petty's works." F.A.Hayek (1991:139) stated rather confidently that "A large part of Locke's doctrines consists of an elaboration of Petty's works with few original features." The preponderance of evidence shows too many similarities between their ideas for it to be a matter of coincidence: (1) land and labour as the original source of commodities, (2) the past labour required to produce commodities, (3) wheat or corn as a stable measure of value, (4) the high price of land near cities, (5) the cash balances approach to the demand for money, among other things. Eric Roll (1956) and Douglas Vickers (1959) also discuss the influence of Petty on Locke.
- 11 McCulloch continued:

Had he carried his analysis a little further, he could not have failed to perceive that neither water, leaves, skins, nor any one of the spontaneous productions of nature, has any value, except what it derives from the labour required for its appropriation. The utility of such products makes them be demanded; but it does not give them value.

(McCulloch 1965 [1864]: 11)

McCulloch followed Ricardo, whom he thought had a pure labour theory of value in exchange.

- 12 Smith must have liked this analogy, since he repeats it several times. The *Wealth of Nations* (Smith 1976 [1776]:24) compares a "frugal peasant" in Europe to an "African King." In his *Lectures*, Smith (1978:338–9, 489, 521) compares a "day-labourer" to an American "Indian prince," a "commoner" to a "chief of a savage nation," and the "meanest labourer" to a "savage." His *Early Draft* (Smith 1978:563) compares a "frugal peasant" to a "chief of a savage nation in North America."
- 13 See James Bonar (1893:91–103), Hannah Sewall (1971 [1901]:60–8), William Letwin (1965:184–95), Karen Vaughn (1980:17–45), Terence Hutchison (1988:68–70), all of whom note a lack of analytical rigour in Locke's theory of market prices.
- 14 John Law (1966 [1705]:5) criticized Locke's use of the term vent, saying "the Prices of Goods are not according to the Quantity in Proportion to the Vent, but in Proportion to the Demand."
- 15 Locke's (1991 [1690]:276) discussion of items of fashion was intended, perhaps, more as a social comment than an extension for his theory of demand.

For it being Vanity not Use that makes the Expensive Fashion of your People, the Emulation is, who shall have the finest, that is, the dearest

things, not the most convenient or useful. How many things do we value or buy, because they come at dear rates from *Japan* and *China*, which if they were our own Manufacture or Product, common to be had, and for a little Money, would be condemned and neglected?

(Locke 1991 [1692]:276)

This suggests a Veblenesque good with a positively sloped demand curve.

- 16 P.H.Wicksteed (1933 [1910]) explained in his *Common Sense of Political Economy* that, when the quantity supplied is fixed, there is an excess supply above and an excess demand below the equilibrium price. At any given price, whether a trader wants to buy or sell depends on the utility that he expects from the last unit possessed. Thus, a seller may be considered a negative demander.
- 17 William Letwin (1965:195) has fairly concluded that “Locke’s laws of value were a vital contribution to economic science, but even assuming that they are correct and exhaustive, they would have left one huge gap. They could at most describe the end condition of a process; they did not explain how the process worked or why it led to the correctly described results.”
- 18 A thorough discussion of Locke’s monetary theory is beyond the scope of this book. For those interested, compare the following authorities: Eli F. Heckscher (1955 [1931]), J.M.Keynes (1936), J.A.Schumpeter (1954), Douglas Vickers (1959), A.H.Leigh (1974) and P.H.Kelly (1991).
- 19 His monetary measure of value comes from the quantity theory of money, where the value of money = $1/P$. Given the Fisherine equation of exchange ($MV=PY$, where M is the quantity of money, V is the income velocity of circulation and Y is the volume of trade or national income), an increase in the quantity of money reduces the value of it. However, Locke used a cash balance approach to the demand for money: $M/P=kY$, where k is a coefficient for the proportion of national income held in cash ($k=1/V$). His theory of interest is akin to Keynes’s demand for money: $M/P=f(Y, r)$. The rate of interests falls as the quantity of money increases or as income decreases. Locke did not reconcile these theories.
- 20 C.B.MacPherson has called this “possessive individualism.” He argues that the assumptions of possessive individualism received their “clearest and fullest” expression from Hobbes.

His model of man, as the sum of man’s powers to get gratifications, reduces the human essence to freedom from others’ wills and proprietorship of one’s own capacities. His model of society, which follows from his model of man plus the assumption that every man’s powers are opposed to every other man’s, we have seen to be a full possessive market model.

(MacPherson 1962:264)

MacPherson traces this philosophy from Hobbes to Locke, but it clearly extends to Adam Smith and beyond. Locke puts no limit to the accumulation of wealth by individuals in civil society.

4

Richard Cantillon

- 1 For a fascinating account of this mysterious economist, see the full length biography on him by Antoin Murphy (1986). The life of Cantillon is also treated at length by W.S.Jevons (1931 [1881]), H.Higgs (1891, 1892, 1893, 1968 [1897], 1931 [1755]), F.Y.Edgeworth (1894), F.A.Hayek (1991 [1931]) and A.Fage (1952). Others who have written on him include S.Bauer (1894), G. Weulersse (1935), J.Hone (1944), J.J.Spengler (1954, 1968), E.Roll (1956), V.J.Tarascio (1981), H.Brems (1986), M.Blaug (1986), V.Walsh (1987) and T.Hutchison (1988).
- 2 Research by J.J.Spengler (1954:281–95, 406–24) indicates that Cantillon was well-read in the economic literature of his day. In addition to Petty and Locke, Spengler suggests that Cantillon may have been influenced by Aristotle, Cicero, Hobbes, Mun, Davenant, Barbon, North, Bellers, Boisguillebert and Law, among others. “Of the authors he specifically mentions,” according to J. J.Spengler (1954:284), “Locke and Petty seem to have stimulated him most, though he criticized various ideas of each.” L.Salleron (1952:lxvi) states that Petty was the principal inspiration of Cantillon.
- 3 Higgs looked at the unpublished papers of Mirabeau and concluded that he may have planned to publish Cantillon’s material under his own name. “It is hardly possible to resist the conviction,” Higgs (1891:267) wrote, “that Mirabeau’s motives in the matter were entirely dishonourable.” L.Brocard (1970 [1902]:48–9) has defended Mirabeau against the charge that *l’Ami des hommes* was plagiarized from Cantillon’s *Essai*. The charge by Higgs applied to an unpublished manuscript by Mirabeau, not to his *l’Ami des hommes*. Hayek (1991 [1931]:275), who carefully examined the evidence, agreed with the assessment of Higgs. L.Salleron (1952) also discusses the question of plagiarism, but only with respect to *l’Ami des hommes*.
- 4 Cantillon’s theory of price determination was discussed by W.S.Jevons (1931 [1881]), H.Higgs (1892, 1931 [1755]), E.Cannan (1929), F.Hayek (1991 [1931]), J.J.Spengler (1954), J.A.Schumpeter (1954), E.Roll (1956), H. Brems (1978), A.Murphy (1986), T.Hutchison (1988), A.Brewer (1988a, 1992a), T.Aspromourgos (1996), M.Perman and C.R.McCann (1998), among others.
- 5 Alfred Marshall (1961 [1890]:II, 756) mentioned that Cantillon, following Hobbes, Petty and Locke, had indicated the relation between value and the cost of production.
- 6 Bert F.Hoselitz (1951:193) has reported that he has “been unable to find any evidence that there existed an economic theory of entrepreneurship prior to Cantillon.”
- 7 Brewer (1988a:34) supported his interpretation with the idea that Cantillon assumed “land is the only truly scarce resource.” This is a curious claim. First, all things are said to be scarce which are limited in quantity relative to their usefulness. Scarcity defines the domain of economics. Anything with a price is scarce. Second, even if labour is reproducible at a constant subsistence wage that can be produced with a fixed quantity of land, labour is still requisite to production. Without labour, there can be no output and no value.
- 8 See, for example, W.S.Jevons (1931 [1881]:344–5), H.Higgs (1892:445–6), E.Cannan (1929:161–2), J.J.Spengler (1954:406–7) and T.Hutchison (1988:167–8), among others.
- 9 This passage appears in the *L’Ami de hommes* by the Marquis de Mirabeau (1970 [1756]:16) without attributing it to Cantillon, though Mirabeau refers to *rats* instead of mice (*souris*).
- 10 R.H.Campbell and A.S.Skinner, the general editors of the Glasgow edition of the *Wealth of Nations*, refer the reader to many passages where Smith may have been influenced by Cantillon, including on the inequality of wages.
- 11 John Locke (1988 [1690]:169) wrote, “he that is proprietor of the whole world, may deny all the rest of mankind food, and so at his pleasure starve them, if they will not acknowledge his sovereignty, and obey his will.” Locke denied, however, that God ever gave Adam such a dominion.

- 12 See A.Murphy (1986:157–90) for an interesting account of life and times of Cantillon in the world of banking and finance. Cantillon thought the monetary policy of John Law, the architect of the Mississippi Bubble scheme, was not sound and speculated against it. For a discussion of Cantillon's monetary theory, see also D.Vickers (1959) and M.D.Bordo (1983), among others.
- 13 See Jacob Viner's (1969 [1948] famous essay "Power versus Plenty as Objectives of Foreign Policy in the Seventeenth and Eighteenth Centuries."

5

Francois Quesnay

- 1 The accounts of the life of Quesnay published by E.Daire (1971 [1846]), J.R. McCulloch (1967 [1853]), A.Oncken (1965 [1888]), Henry Higgs (1968 [1897]), Max Beer (1966 [1939]), and Elizabeth Fox-Genovese (1976) contain many differences in detail.
- 2 V.Foley (1973:143–5) has argued that Quesnay's circular flows of blood and goods were also part of the Cartesian cosmology: "I know of no other scientific world view which is so well placed as Cartesianism to explain the sweeping claims made by Physiocracy. Descartes made circulation into a fundamental universal principle."
- 3 As discussed briefly in Chapter 4, Henry Higgs (1891:267) claimed and Friedrich von Hayek (1991 [1931]:275) agreed that Mirabeau intended to publish Cantillon's *Essai* under his own name, but dropped the plan when someone else published it under Cantillon's name.
- 4 The literature on the physiocrats is vast. Some leading authorities are H.Higgs (1968 [1897]), C.Gide and C.Rist (1948 [1915]), A.Gray (1931), M.Beer (1966 [1939]), J.A.Schumpeter (1954), R.L.Meek (1962a), M.Kuczynski and R.L.Meek (1972), R.Hebert (1987), G.Vaggi (1987) and T.Hutchison (1988). A.Oncken (1965 [1888]) is a standard edition of works by Quesnay in French. An older French edition by E.Daire (1971 [1846]) is in some ways more useful, though less complete, than the Oncken edition, because it includes works by several other physiocrats, including Dupont de Nemours, Mercier de la Rivière, L'Abbé Baudeau and Le Trosne.
- 5 Dupont de Nemours recalled that Quesnay (1965 [1888]:155) had told him many times that the *Tableau* dated from December 1758, though the Marquis de Mirabeau put it in 1759. Ronald R.Meek (1972) has given a fascinating account of the twisted history of the early editions of the *Tableau*, though the complete story may never be known.
- 6 R.L.Meek (1962a) translated a selection of important works by Quesnay in his *The Economics of Physiocracy*. The passages from the physiocrats that are quoted in this chapter were translated by Meek (1962a), by Kapp and Kapp (1949) or by the author.
- 7 In *De Cive*, Hobbes (1983 [1642]:64–5) gave Aristotle's definition of distributive justice: "if there be rendred to every man...more to him who is more worthy, and lesse to him that deserves lesse, and that proportionably, hence they say *aristeth distributive justice*" But Hobbes maintained that there "is no distinction of Justice, but of equality; yet perhaps it cannot be deny'd, but that justice is a certain equality, as consisting in this onely; that since we are all equal by nature, one should not arrogate more *Right* to himselfe, then he grants to another, unlesse he have fairly gotten it by Compact."
- 8 Vaggi (1987) gives a useful account of the physiocratic concept of the value of production, which some authorities treated as a physical quantity. K.Marx (1963–71), C.Gide and C.Rist (1948 [1915]), M.Beer (1966 [1939]) and R. Meek (1962c), among others, also recognized that the physiocrats also thought in terms of the value of production. The *Tableau Économique*, for example, is stated in terms of funds, which is necessarily a value concept.
- 9 In his *L'ordre naturel et essentiel de sociétés politiques* (Daire edition), Mercier de la Rivière (1971 [1767]:467) distinguishes between the whole net product and the disposable net

- product. Out of the whole net product, “it is not proper to regard as disposable that part necessary to discharge the costs of landed property; that the surplus is, in truth, that part only which can be divided between the sovereign and the landed proprietors, for the reason that it is only that which society can dispose of arbitrarily.” The table of contents reads (Mercier 1971 [1767]:639): “One part of the net product is not disposable; it is necessarily affected by the charges on the *propriété foncière*.” L’Abbé Baudeau (1971 [1771]:690) explained in his *Introduction à la philosophie économique* how a progressive landlord never stops maintaining and improving his capital investment: “a *propriétaire* who makes, who maintains, and who improves without cease the *avances foncières* of his particular inheritance *essentially* and infallibly works for the progressive perfection of the characteristic arts of society.”
- 10 In his *Theories of Surplus Value*, Marx (1963–71:2, 46) stated that the physiocrats “lay down the fundamental principle that only that labour is productive which creates *surplus-value*, in whose product therefore a higher value is contained than the sum of the values consumed during the production of this product.”
 - 11 The Walrasian condition of zero profits has been explained with great clarity in a series of publications by Enrico Barone, who argued that, in a perfectly competitive economy with free entry and exit, a positive profit above all necessary costs implies that it is possible to obtain something for nothing. Where a large number of competitive entrepreneurs exists, each receives only the value of their marginal product in equilibrium. See Dooley (2001) for a fuller explanation.
 - 12 The foreign trade doctrines of the physiocrats are discussed by A.I.Bloomfield (1938).
 - 13 The input-output form of the *Tableau Économique*, based on Quesnay’s simplified form in his *Analyse*, has been presented by A.Phillips (1955). See also R.L.Meek (1962d), T.Barna (1975), L.L.Pasinetti (1977) and Steven Pressman (1994), among others. Leading authorities on the *Tableau* also include Karl Marx (1963–71), J.A.Schumpeter (1954), M.Kuczynski and R.L.Meek (1972), E.Fox-Genovese (1976) and G.Vaggi (1987).
 - 14 E.Heimann (1964 [1945]:244) refers to the early zig-zag forms of the *Tableau Économique* as the *Grand Tableau* and the form in the *Analyse* as the *Petit Tableau*. The zig-zag form is hard to comprehend, because it appears to show a time series of transactions that take place within a single crop-year. It gives an interesting visual image, as C.Loïc (2003) explains, but the dating of the transactions is unclear.
 - 15 J.A.Schumpeter (1954:233) believed that Quesnay “was one of the founding fathers of utilitarianism though he did not state the greatest happiness principle in so many words.”
 - 16 For an analysis of the physiocratic theory of property rights, see W.J.Samuels (1961:100), who argues that “the Physiocratic theory of property rights is more nearly a theory of ‘social utility’ than a theory of exclusive or absolute *dominium*.”
 - 17 Charles Gide (1948 [1915]:30n) notes that the origin of this motto is uncertain. Mirabeau and Mercier de la Rivière claimed that it originated with Vincent du Gournay, but Turgot, his biographer, assigned it to Le Gendre, while Oncken gave credit to Marquis d’Argenson.

6

Francis Hutcheson

- 1 The life and times of Francis Hutcheson are treated by W.Leechman (Hutcheson 2000 [1755]), J.McCosh (1875), T.Fowler (1882), W.R.Scott (1966 [1900]), H.Jones (1906), W.L.Taylor (1965) and R.S.Downie (1994).
- 2 The Third Earl was the grandson of John Locke’s mentor, the First Earl of Shaftesbury, also named Anthony Ashley Cooper. Locke was the attending physician at the birth of the Third Earl.

- 3 Mandeville (1988 [1714]:II, 345–6) criticized Hutcheson in return by ridiculing his mathematical metaphysics. Hutcheson (2002 [1726]:183–8) presented equations that, for example, measured quantities of Benevolence, Moments of Good and Abilities.
- 4 The *Observations on “The Fable of the Bees”* was originally published in 1726 as three letters to a journal in Dublin. In 1725, Hutcheson published his *Thoughts on Laughter*, a criticism of the theory of laughter presented by Thomas Hobbes, in three letters to the same journal. They were reprinted together in 1758 as *Thoughts on Laughter and Observations on “The Fable of the Bees” in Six Letters* by Robert and Andrew Foulis.
- 5 Hutcheson derived many of his ideas from Aristotle, who began his *Ethics* with the following statement:

It is thought that every activity, artistic or scientific, in fact every deliberate action or pursuit, has for its object the attainment of some good. We many therefore assent to the view which has been expressed that ‘the good’ is ‘that at which all things aim.’

(Aristotle 1953:25)

W.R.Scott (1966 [1900]:212) thought it worthy to note that, with the publication of his *System*, “Hutcheson has now fallen very greatly under the influence of Aristotle.”

- 6 Hutcheson (1747:iv) began his *A Short Introduction to Moral Philosophy* with a note “To the Students in Universities,” in which he wrote, “These elementary books are for your use who study at Universities, and not for the learned. When you have considered them well, go on to greater and more important works.” It was originally published in Latin in 1742. The “Advertisement” by the Translator states that Hutcheson opposed the translation of it because he wanted students to learn their Latin. The prospect of a translation being published in London led Hutcheson to have it translated and published in Glasgow by Robert Foulis, printer to the University.
- 7 H.Mizuta (1967:106) lists the *Inquiry*, *Illustrations of the Moral Sense*, the *Short Introduction*, and the *System* among the works by Hutcheson in Adam Smith’s library. Smith subscribed to two sets of the *System* when it was first published.
- 8 The *Glasgow Lectures* referred to by Scott were given in 1763–64. They were published by Edwin Cannan (1964 [1896a]). Now they are identified as LJ(B) to differentiate them from the lectures of 1762–63, called LJ(A). The more polished form of LJ(B) suggests that it was prepared by a copyist, while LJ(A) appears to be student notes. R.L.Meek *et al.* state in the “Introduction” to the *Lectures on Jurisprudence* by Adam Smith (1978:7) that LJ(B) “is probably not much inferior to LJ(A) as a record of what may be assumed actually to have been said in the lectures.”
- 9 Taylor focused on the *System* and *Short Introduction* by Hutcheson, but did not treat the economical sections of his *Inquiry*.
- 10 Taylor (1965:60) noted that these reasons appeared in the French *Encyclopédie* of 1751.
- 11 While Mandeville certainly emphasized the role of self-love in the affairs of society, Hutcheson (2000 [1755]:I, 286) did not underestimate it; on the contrary, he argued that “the vehemence of our selfish appetites and passions” were the chief dangers to the public interest unless our moral sense restrained us from injuring others.
- 12 See J.T.Young (1997:58–62) for a useful analysis of the role of benevolence and self-love in the *Wealth of Nations*.
- 13 See T.A.Horne (1990) for a comparison of Locke and Hutcheson on property rights.

- 14 M.N.Rothbard (1996:423) argues with some justice that Hutcheson's utilitarian philosophy weakens his position in favour of natural liberty and natural rights. The poor are many, while the rich are few, so that, on the principle of the greatest happiness for the greatest number, the poor may feel entitled to the property of the rich.
- 15 Terrence Hutchison (1988:399) contended that Francis Hutcheson, "though maintaining a labour theory of *property*, upheld a scarcity-and-utility theory of value." Compare E.Pesciarelli (1999), however, who finds elements of a labour theory of value in Hutcheson's *System*.
- 16 Andrew Skinner (1999b) compares Pufendorf, Hutcheson and Adam Smith. While he stated that Hutcheson's utility and scarcity theory of value does not differ significantly from the theory of Pufendorf, like Pesciarelli, he notes that Hutcheson occasionally appears to hold a labour theory of value. Hutcheson clearly used labour as a measure of value.
- 17 Smith (1976 [1776]:122) may be echoing Hutcheson where he argued in his chapter on the inequality of wages and profits that workmen in positions of trust need to be paid a premium, because "Their reward must be such, therefore, as may give them that rank in society which so important a trust requires." Hutcheson also attributes the profits of merchants to their status in society.

7

David Hume

- 1 The life of David Hume has been the subject of several publications, including the brief *My Own Life*, an autobiography by David Hume (1985 [1777]). Major biographies have been published by J.Y.T.Grieg (1931) and E.C.Mossner (1954), among others.
- 2 In the "Introduction" to his *Treatise*, Hume (1964 [1739–40]:I, 307–8) declared that "as the science of man is the only solid foundation for the other sciences, so the only solid foundation we can give to this science itself must be laid on experience and observation."
- 3 L.A.Selby-Bigge (Hume 1894 [1748, 1751]) has republished them together under the short title of *Hume's Enquiries*.
- 4 J.Bonar (1893:113) has argued that Hutcheson's *Inquiry* "had a great influence on Hume," especially on the distinction between wealth and happiness. Hutcheson thought that the rich were not necessarily happier than the poor.
- 5 In his "Introduction" to *David Hume: Writings on Economics*, E.Rotwein (Hume 1955) has emphasized the role of psychology in Hume's economics and moral philosophy. He identified the psychological desire for action, for pleasure, for gain, etc. as underlying human behaviour. Schumpeter (1954:125, 447n) has claimed that, on the one hand, "the metasociology of Condillac, Hartley, and Hume was essentially psychological," while, on the other hand, Hume's "economics has nothing whatever to do with either his psychology or his philosophy." The review article by M.Arkin (1956) suggests that Rotwein's interpretation is widely accepted.
- 6 W.L.Taylor (1965:142–60) gives a more thorough exposition and analysis of the theories of property held by Francis Hutcheson, David Hume and Adam Smith, all of whom were critical of *Utopia* by Sir Thomas More and *The Commonwealth of Oceana* by James Harrington.
- 7 This point has been recognized by J.Bonar (1893:118), who wrote: "The place of labour, however, in his economical theories is hardly less important than in Adam Smith's after him; and Hutcheson's influence may perhaps be traced here as we have seen it elsewhere."
- 8 Hume tried to convince A.R.J.Turgot of the economic importance of industry and trade. In a letter of 1766 he begged Turgot

to consider, that, besides the Proprietors of Land and the labouring Poor, there is in every civilized Community a very large and very opulent Body who employ their Stocks in Commerce and who enjoy a great Revenue from their giving labour to the poorer sort. I am perswaded that in France and England the Revenue of this kind is much greater than that which arises from Land.

(Greig 1932:II, 94).

However, Hume's observations apparently did not move Turgot.

- 9 Skinner (1993) focuses on Hume's theory of stages of economic development: hunter-gatherer society, primitive agriculture, manufacturing. Adam Smith approached development from a similar perspective.
- 10 This widely accepted interpretation of Hume's theory of interest was emphasized by Eugene von Böhm-Bawerk (1959 [1884–1912]:30), though he may have over-simplified the question.
- 11 Milton Friedman gave high praise to Hume for his monetary theory. In commenting on papers by Stanley Fischer and by W.C.Barnard and R.N.Cooper on recent developments in monetary theory at the 1975 meetings of the American Economic Association, Friedman (1975:177) said "it is far harder to answer the question 'What have we learned in the past 200 years?' than 'What have we relearned in the past twenty-five years?'" "Friedman then summarized Hume's contribution. Douglas Vickers (1959) has presented a detailed analysis of Hume's monetary theory. See Paul A.Samuelson (1971b) for his statement of "An Exact Hume-Ricardo-Marshall Model of International Trade."
- 12 Jacob Viner (1955:91–2) has argued that Adam Smith's ideas on free trade and laissez-faire probably came out of philosophy and that Hume was an important philosophical influence on him. Viner also recognized that the physiocrats were an influence.

8

Adam Smith and the labour theory of value

- 1 On the life of Adam Smith, see Dugald Stewart (1980 [1795]), John Rae (1977 [1895]), W.R.Scott (1937), C.R.Fay (1956), J.Viner (1965), E.G.West (1976), I.S.Ross (1995), among others.
- 2 Some of his early essays were published posthumously as *Essays on Philosophical Subjects* (Smith 1980 [1795]). He had other essays burned before he died.
- 3 Werner Stark (1944b:14) sees Locke as having both a subjective theory of value based on utility and an objective theory based on labour, but thought that "the classical economists, only followed one track, the track leading to the labour theory of value."
- 4 In his *Theories of Surplus Value*, Karl Marx (1963–71:2, 165) recognized the duality of Smith's theory of value. He called the labour theory of value the "esoteric" part of Smith's work and the regulation of market prices the "exoteric" part of his work.
- 5 The paradox of value would have been well-known to Smith. It had previously been discussed by Pufendorf, Locke and Hutcheson, for instance. John Law, whom Smith cited in another context, gave the same example as Smith:

Water is of great use, yet of little Value; Because the Quantity of Water is much greater than the Demand for it. Diamonds are of little use, yet

of great Value, because the Demand for Diamonds is much greater, than the Quantity of them.

(Law 1966 [1705]:4)

- 6 W.S.Jevons (1957 [1871]:162) understood Smith to mean total utility by value in use. He identified value in exchange with the marginal utility that an individual expects to derive from an additional unit of a commodity, which he called the “final degree of utility.” This became the foundation of neoclassical value theory.
- 7 The utility theory of value remained in vogue in France. See, for example, J.J.L.Graslin, E.B.de Condillac, J.B.Say, A.A.Walras, among others. J.B. Say (1964 [1821]:62) stated his theory of the origin of value as follows: “The value that mankind attach to objects originates in the use it can make of them.”
- 8 After quoting Smith’s (1976 [1776]:82) statement that the “produce of labour constitutes the natural recompence or wages of labour,” J.A.Schumpeter correctly observed:

Since by produce of labor he there meant the whole product, and since, on his own showing, the wages do not normally amount to that, we have here, clearly a natural-law proposition in the philosophical or valuejudgment sense.

(Schumpeter 1954:111)

He concluded, however, that, since Smith’s theory of the origin of value is not based on scientific analysis, it should be discarded. By discarding what Smith unquestionably wrote and clearly meant, even if it is metaphysics or metaeconomics, Schumpeter distorted Smith. The idea that labour produces all commodities applies to both primitive society and civil society.

- 9 Eric Roll has given a similar interpretation of Smith’s first sentence:

Adam Smith, building on the foundations of Petty and Cantillon effected the final revolution. With him labour as such becomes the source of the fund which originally supplies every nation “with all the necessaries and conveniences of life which it annually consumes.”

(Roll 1956:154)

J.B.Clark (1967 [1886]:22–3) had earlier written: “The doctrine that labor is the sole originator of wealth is, perhaps, the central doctrine in the system of Adam Smith.” Similarly, James Bonar (1893:153) stated that for Smith “every product of labour is part of the national wealth. Wealth means consumable goods of every sort.” C.Gide and C.Rist (1948 [1915]:74) took Smith to mean “Labour is the true source of wealth.” From the neoclassical perspective, land, labour and capital combine to produce commodities. Their marginal products separately measure the contribution of each to production,

but this is not Smith. To discover the origin of value, Smith looked back to a primitive state, where land was a free gift of nature, where labour alone actively produced commodities and where capital goods simply embody past labour.

- 10 In his history of the administration of justice, Smith (1976 [1776]:708–23) gave a richer and more complex theory. He explained how the typical society passed through four stages of economic development, which he identified as the ages of hunters, shepherds, early husbandmen, and commerce. These four stages correspond to the economic activities in *Genesis*: Adam and Eve gathered their subsistence in the garden of Eden, Abel herded sheep and Cain was a farmer, who went to live in the land of Nod, east of Eden, where he built a city called Enoch for his son, Enoch. This was a familiar story. Ronald Meek (1977:19) refers to Smith's "theoretical system as *a*, if not *the*, materialist conception of history." He argues that the concept of four stages of historical development originated in eighteenth century Scotland and France.
- 11 Alternative interpretations are offered by Edwin Cannan (1967 [1917]), Vincent Bladen (1938, 1975), Ronald Meek (1956a), Hla Myint (1965 [1948]), Mark Blaug (1978), Rory O'Donnell (1990), among others.
- 12 In his *Theories of Surplus Value*, Karl Marx (1963–71:1, 71) gave credit to Ricardo for exposing the "contradiction" that the wages of labour can no longer equal the labour embodied in a commodity as soon as profit and rent become component parts of price, but Smith did not claim otherwise. See also A.C. Whitaker (1968 [1904]), Ronald Meek (1956a) and Maurice Dobb (1973), among others.
- 13 Many authorities read Smith's labour measure of value in the context of modern economics, where labour produces only its marginal product. They do not see the logic of Smith's argument, where labour alone produces all commodities. Since a given labour sacrifice produces more consumer goods in a rich nation than in a poor nation, labour sacrifice measures the wealth of nations. Alternative views are presented, for example, by Paul Douglas (1966 [1928]), J.A. Schumpeter (1954), Eric Roll (1956), H.M. Robertson and W.L. Taylor (1957), Hla Myint (1965 [1948]), Andrew Skinner (1970), D.P. O'Brien (1975), Mark Blaug (1978), Rory O'Donnell (1990) and Glenn Hueckel (1998, 2000).
- 14 In his criticism of Ronald Meek (1956a) and Samuel Hollander (1973), among others, Vincent Bladen (1975:511) claimed that "labour embodied and labour commanded" refer to the same thing. At first reading, the phrase "labour command" immediately suggests hiring labour at the market wage, but Smith used the notion of labour command to refer to both the real price of labour and the real price of commodities. See also Vincent Bladen (1938).
- 15 In chapter five Smith (1976 [1776]:48–9) observed that hardship and ingenuity are compensated in the market, so that wages are a rough measure the sacrifice of labour. In chapter ten, he explained at greater length how "The whole of the advantages and disadvantages of the different employments of labour and stock must, in the same neighbourhood, be either perfectly equal or continually tending to equality" (Smith 1976 [1776]:116). If the whole of the advantages and disadvantages of different employments become perfectly equal in equilibrium, labour must be perfectly homogeneous. This is briefly discussed later.
- 16 What Smith meant by labour sacrifice is not unambiguously clear. Sometimes Smith (1976 [1776]:47, 50) referred to something like the "disutility" of Jevons, which Locke called "pain," and sometimes he referred to leisure forgone: "toil and trouble" suggests disutility or pain, whereas "he must always lay down the same portion of his ease, his liberty, and his happiness" implies leisure forgone.
- 17 Ricardo (1951 [1821]:13–14) did not always see that the origin, measure and determinant of value are distinct concepts. His many followers include, among others, Hla Myint (1965

[1948]), Ronald Meek (1956a), Samuel Hollander (1973), Mark Blaug (1978) and Rory O'Donnell (1990).

- 18 Since the price of each commodity includes the capital consumed during production, so too does the gross national revenue, which equals factor cost plus capital consumption.

The gross revenue of all the inhabitants of a great country, comprehends the whole annual produce of their land and labour; the neat revenue, what remains free to them after deducting the expence of maintaining; first, their fixed; and, secondly, their circulating capital; or what, without encroaching upon their capital, they can place in their stock reserved for immediate consumption, or spend upon their subsistence, conveniencies, and amusements. Their real wealth too is in proportion, not to their gross, but to their neat revenue.

(Smith 1976 [1776]:286–7)

Here again Smith identifies the real wealth of the nation with its consumption.

- 19 Karl Marx (1963–71:1, 93 and 2, 217), Piero Sraffa (1951:xxxvi), J.A.Schumpeter (1954:189 and 309), R.L.Meek (1956a:71) and E.Roll (1956:162) all cite the second sentence, but not the first, to support their assertions that Smith had a simple adding-up cost of production theory of value in civil society. They should also have quoted the preceding sentence, if not the whole paragraph, to show that labour either collects or produces the whole output of every society.
- 20 According to Piero Sraffa (1951:xxxv), Ricardo thought that Smith's "original error respecting value" was his adding up theory: price equals wages plus profit plus rent. Maurice Dobb (1973:46) wrote that alternatively it has been called "a simple Cost of Production Theory." Smith fairly consistently maintained, however, that labour produced the whole national product and that competition allocated the income derived from it between wages, profit and rent.
- 21 R.L.Meek (1956a:77n) wrote: "I use the term 'cost theory' to include any theory which approaches the problem of the price of a commodity from the angle of the 'costs' (including profits) which have to be covered if it is to be worth a producer's while to carry on producing it." Smith clearly had a cost of production theory in Meek's sense. Ricardo (1951 [1821]:88–92) also presented a necessary cost of production theory in his chapter "On Natural and Market Price," as did Karl Marx (1961–62 [1867–94]:III, 156) after he transformed labour values into market prices.
- 22 Like Ricardo, Marx and Walras who followed him, Smith had no short period. As a matter of logic, under a regime of perfect competition, all commodities, including all capital goods, can be bought or sold on any market day, so that fixed inputs, fixed costs and the short period are logically inconsistent with perfect competition.
- 23 Output also adjusts to equilibrium for Walras (1954 [1874–77]: Lesson 20), when he treated the theory of production. His stability conditions apply to a market where no production occurs.
- 24 The Marshallian stability conditions hold in the long run where production can vary: firms increase output where the demand price exceeds the supply price; firms reduce production where the supply price exceeds the demand price. The Walrasian stability conditions hold in a temporary period where no production occurs: buyers bid up prices where an excess demand exists; seller cut price where an excess supply exists.

- 25 See J.S.Mill (1965 [1848]:385–91) and J.E.Cairnes (1874:68), who wrote, following Mill's ideas, that "We are thus compelled to recognize the existence of non-competing industrial groups." The labour theory of value breaks down when non-competing groups exist.
- 26 As R.H.Campbell and A.S.Skinner (Smith 1976 [1776]:117n) note in their useful edition of the *Wealth of Nations*, Cantillon had previously discussed learning time, riskiness and trustworthiness in his *Essai*, while Hutcheson had discussed trustworthiness in his *System*.
- 27 Samuel Hollander (1973:183), for example, puts aside the statements by Smith that an increase in competition tends to reduce the rate of profit and searches instead for passages that are more in harmony with the neoclassical marginal productivity theory.
- 28 Smith's theories are called a "jumble" by Schumpeter (1954:191), a "curious inconsistency" by Dobb (1973:53) and a "contradiction" by Blaug (1978:50).
- 29 Knight (1965 [1935]:150) has explained this principle with great clarity: "The cost of any alternative (simple or complex) chosen is the alternative which has to be given up; where there is no alternative to a given experience, no choice, there is no economic problem, and cost has no meaning."
- 30 Smith (1976 [1776]:184, also 334, 364) mentioned that the rent of land is often reckoned at a third of the produce of land: "The rent of an estate above ground, commonly amounts to what is supposed to be a third of the gross produce; and it is generally a rent certain and independent of the occasional variations in the crop." He did not, however, reconcile this claim with any theory of rent. It possibly came from his knowledge of agriculture or from reading Cantillon's *Essai*. Similar comments appear in both sets of the *Lectures*, LJ (A) and LJ(B), by Smith (1978:185–6, 190–1, 383, 522).
- 31 Locke and Smith arrived at their doctrine of justice by different routes, "but for these *two* writers," concluded Overton H.Taylor (1960:68), "the content of justice itself was substantially the same."
- 32 Echoing Locke, Smith (1976 [1776]:715) wrote: "Civil government, so far as it is instituted for the security of property, is in reality instituted for the defence of the rich against the poor, or of those who have some property against those who have none at all."
- 33 The term mercantilism is now used in a variety of ways. See D.C.Coleman (1969) for a useful review of the debates on mercantilism. W.D.Grampp (1952) discusses liberal elements in mercantilist thought.
- 34 J.Cropsey (1975:149) has argued that "Liberty continued to mean for Smith what it had meant to Locke, to Aristotle, and to the long tradition of political philosophy: the condition of men under lawful governors who respect the persons and property of the governed, the latter having to consent to the arrangement in one way or another."
- 35 See A.S.Skinner (1979) for a discussion of the many areas where Smith advocated state intervention in the economy. His most severe restrictions were, perhaps, in the field of banking, which Smith justified on the grounds of justice:

Those exertions of the natural liberty of a few individuals, which might endanger the security of the whole society, are, and ought to be, restrained by the laws of all governments; of the most free, as well as of the most despotical. The obligation of building party walls, in order to prevent the communication of fire, is a violation of natural liberty, exactly of the same kind with the regulations of the banking trade which are here proposed.

(Smith 1976 [1776]:324)

The obligation not to harm other people takes precedence over the free activity of individuals. Justice trumps liberty. See also the discussion by D.Winch (1983) on science and the legislator.

- 36 The hierarchy of labour productivity in the *Wealth of Nations* is ably discussed by Samuel Hollander (1971). See also S.Hollander (1973).
- 37 Peter Minowitz (1993) has analysed how Smith used the metaphor of the invisible hand three times in his published works: first in the *History of Astronomy* to explain how the Greeks thought that the invisible hand of Jupiter caused irregular cosmic events, second in the *Theory of Moral Sentiments* to explain how the invisible hand of Providence provided the necessities of life to the people, and third in the *Wealth of Nations* to explain how the self-interest of individuals promoted the economic welfare of society.
- 38 For the literature on the vent-for-surplus theory, see J.S.Mill (1965 [1848]), S. Hollander (1973), among others. The idea that specialization gives each producer a surplus of one commodity that can be traded for the surplus product of other people goes back to Plato and Aristotle.
- 39 Ricardo extended Smith's analysis by explicitly stating the theory of comparative advantage, which shows that a gain from trade is possible for both countries even where one of them has an absolute advantage in the production of both commodities. If each country specializes in the production of that commodity which it can produced relatively cheaper, Ricardo (1951 [1821]:128) concluded, free trade will tend to increase "the mass of commodities, and therefore the sum of enjoyments."
- 40 J.T.Young criticized the widely held and long-established view stated by Blaug (1986:132) that "Locke's theory of property rights...provided the underpinnings of the labour theory of value that was to emerge in the writings of Smith." Young (1997:83n) claims that Blaug's interpretation "is either wrong or in need of some modification." The labour theory of value is an economic theory, however, not an ethical theory. In his theory of property, Locke accounts for all the labour requisite to produce a loaf of bread. This is an economic proposition, which Smith, Ricardo and Marx all followed. When Smith turned to the question of property rights in the *Wealth of Nations*, he clearly stated Locke's labour theory, even though he may have arrived at the doctrine by an alternative route than Locke, as Knut Haakonssen (1981:106–7) suggests.
- 41 Schumpeter (1954:184) wrote that "no matter what he actually learned or failed to learn from his predecessors, the fact is that the *Wealth of Nations* does not contain a single *analytic* idea, principle, or method that was entirely new in 1776." Jacob Viner (1955:108) surveyed the theory of international trade before Adam Smith and concluded that "I believe I have succeeded in showing that all the important elements of Adam Smith's free-trade doctrine had been presented prior to the *Wealth of Nations*"
- 42 D.P.O'Brien (1976:391) has argued persuasively that "of all the philosophies of the history of science which deserve to be taken seriously that of Lakatos seems the most successful in explaining the history of Smith's unparalleled achievement."
- 43 Donald Winch (1996), Keith Tribe (1999) and Emma Rothschild (2001) have recently made important contributions to understanding Smith's economic and philosophical views.

9

David Ricardo

- 1 On the life of David Ricardo, see J.R.McCulloch (1967 [1853]), J.H.Hollander (1968 [1910]), P.Sraffa (Ricardo 1951–73:X), D.Weatherall (1976), J.P. Henderson with J.B.Davis (1997) and A.Heertjie (2004), among others.
- 2 B.R.Mitchell (1962) gives estimates of the National Income and Debt of Great Britain. The financial markets in the City of London were a critical element in the victory of the English over the French.
- 3 See the Sraffa edition of the *Works* by Ricardo (1951–73:IV, 4–9) for a discussion of the events and people leading to the development of the theory.
- 4 Ricardo's theory of value faced criticism soon after it appeared from Robert Torrens (1984 [1818]), T.R.Malthus (1989 [1920]), Samuel Bailey (1931 [1825]) and Richard Jones (1956 [1831]), among others. Modern authorities include E.Cannan (1967 [1917]; 1929), J.H.Hollander (1968 [1910]), F.H. Knight (1965 [1935], 1956 [1935]), J.M.Cassels (1935), P.Sraffa (1951, 1960), G.S.Stigler (1952, 1965 [1958]), J.A.Schumpeter (1954), O.St Clair (1965 [1957]), M.Blaug (1958;1978), R.L.Meek (1956a, 1977), L.L.Pasinetti (1977), D.P.O'Brien (1975), S.Hollander (1979), G.A.Caravale and D.A. Tosato (1980), M.Morishima (1989), T.Peach (1993), among many others.
- 5 If the economy were in a stationary state where current labour merely renews the past labour embodied in the stock of capital in order to keep it intact, the problem of valuing technologically obsolete capital goods disappears. Ricardo probably did not see this solution, however, because he discussed the age of hunters in the previous paragraph and abridging labour in the manufacture of stockings in the next paragraph.
- 6 Ricardo (1951 [1821]:60n) knew this example was impossible and deleted it from his third edition after a criticism of it appeared in the *British Review*. In the third edition, he replaced the amortization charge with the notion of keeping capital intact.
- 7 Many authorities have commented on Ricardo's cost of production theory. Alfred Marshall (1961 [1890]:I, 503) interpreted Ricardo as having a long run cost of production theory like Marshall's own theory. H.J.Davenport (1964 [1908]: 33) questioned whether "the repute of Ricardo as the great cost-of-production theorist" was justified. D.P.O'Brien (1975:84–91) has offered an alternative interpretation of Ricardo's cost of production theory. Samuel Hollander (1979:280–5) cites many places where Ricardo explained how the cost of production regulates supply and, therefore, price.
- 8 Ricardo's measure of value gave rise to academic industry in the history of economic thought after the publication of *Production of Commodities by Means of Commodities* by Piero Sraffa (1960). Luigi L.Pasinetti (1977) gives a lucid exposition of Sraffa's model. Geoff Harcourt (1972) discusses the capital controversy. Sraffa's influence is evident in many articles in *The New Palgrave Dictionary*, in which the article on "Sraffian economics" is by Paul A.Samuelson (1987). See also essays in Giovane A.Caravale (1985) and the survey by Schefold (1998).
- 9 In a Walrasian system of general equilibrium, the prices of all commodities and productive services are determined simultaneously before production and exchange begin. If wages rise and profits fall, as Ricardo postulated, then all relative values tend to change under a competitive regime. A *numéraire* for one equilibrium is not in general valid for another. Walras's followers had a solution to this problem. Enrico Barone (1935 [1908]), using the method of Vilfredo Pareto (1964 [1896–97]:II, 92–4), demonstrated how to measure and compare competitive equilibria and, therefore, Pareto optimal equilibria in terms of quantities produced without reference to utility. See P.Dooley (1998) for a discussion.

- 10 Ricardo did not object to calling rent a monopoly income. In commenting on his difference with J.B.Say, Ricardo (1951 [1821]:284) wrote, "Our difference proceeds from the different view which we take of rent: I always consider it as the result of a partial monopoly, never really regulating price, but rather as the effect of it."
- 11 Ricardo initially believed that technological improvements benefited everyone. In his third edition, he introduced a chapter "On Machinery," in which he demonstrated that new machinery may reduce the gross produce of the nation. In this case, Ricardo (1951 [1821]:390) wrote, "there will necessarily be a diminution in the demand for labour, population will become redundant, and the situation of the labouring classes will be that of distress and poverty."
- 12 Since rare wines are a differentiated product, they were perhaps produced under conditions which define monopolistic competition rather than perfect competition or monopoly. This, however, is a twentieth century theory.
- 13 The mathematical model of Kenneth Gordon (1983) shows that wages and profits may follow either a smooth or oscillatory path, depending on the coefficients in his equations. His model applies to both Malthus and Ricardo, because the rate of population growth depends on the real wage relative to the subsistence wage.
- 14 See Blaug (1958) for a concise discussion of the legislation. Notable commentators on the condition of the poor include Karl Marx (1961–62 [1867–94]), Sidney and Beatrice Webb (1963) and George Orwell (1940 [1933]). S.Nickell (2004) gives an account of recent poverty and worklessness in Britain.
- 15 Knut Wicksell (1934 [1901, 1906]) and J.M.Keynes (1936) are among the most notable authorities who criticized and extended the monetary theory inherited from Ricardo. In the area of international trade theory, honours are due to J.S.Mill's (1965 [1848]) *Principles*, Alfred Marshall's (1949 [1879]) *Pure Theory of Foreign Trade*, Bertil Ohlin's (1935) *Interregional and International Trade* and Paul A.Samuelson's (1948) article on factor price equalization. Jacob Viner (1955) has provided a useful history of the literature on trade.
- 16 Ricardo did not satisfactorily deal with the question of how the total gain from trade was split between the two countries. Over a century passed before Paul A. Samuelson (1948) simply and elegantly demonstrated how, under the usual assumptions in trade theory, the factor prices in both countries tend to equalize.
- 17 Simon Power has given a useful survey of the origins of the Heckscher-Ohlin concept. He traced the concept back to Sismondi, Adam Smith, Longfield, Ricardo, Torrens and others. Power (1987:298) concluded that "the Heckscher-Ohlin concept is indeed possessed of a far longer and richer intellectual heritage than Ohlin was aware of."

10

Karl Marx

- 1 On the life of Karl Marx, see John Spargo (1910), Otto Rühle (1929), Franz Mehring (1966), H.P.Adams (1940), J.A.Schumpeter (1965 [1951]), Isaiah Berlin (1963) and D.McLellan (1973).
- 2 Michael Evans (1984) shows the considerable influence of Smith on Marx in *The Economic and Philosophic Manuscripts of 1844*, which was apparently written before Marx had read Ricardo.
- 3 A selection of their articles appears in *The American Journalism of Marx and Engels* (1966). They were informative and analytical as well as well-written.
- 4 See, for example, A.Labriola (1904), E.R.A.Seligman (1907), B.Croce (1966 [1914]), M.M.Bober (1965 [1927]), among others. R.A.Nordahl (1982) gives a useful discussion of Marx's uses of historical knowledge.

- 5 In the *Critique of the Gotha Programme*, Marx (1938 [1891]:3) wrote: “Labour is *not the source of all wealth. Nature is just as much the source of use-values* (and it is surely of such that material wealth consists!) as labour, which itself is only the manifestation of a force of nature, human labour power.”
- 6 Among the most frequently cited economic theorists in Volume I of *Capital*, aside from Marx and Engels themselves, are Ricardo (42), Smith (40), Petty (19), Locke (8) and Quesnay (5), which may give a crude measure of their influence. Malthus (21), J.S.Mill (18), Senior (17), Say (14) and J.Mill (13) were severely criticized.
- 7 Discussions of Marx’s theory of value can be found in E.Aveling (1902), M. Dobb (1940, 1973), E.Roll (1956), L.Rogin (1956), R.L.Meek (1956a, 1977), Joan Robinson (1966 [1942]), E.Mandel (1968), M.Blaug (1978), E.K.Hunt (1979), J.Elster (1985), among others.
- 8 A.Shaihk (1984), W.P.Cockshott and A.Cottrell (1997, 2004) and E.B. Chilcote (2004), among others, have explored the empirical evidence supporting the labour theory of value. Not suprisingly, labour time gives a rough approximation of commodity prices.
- 9 In his *Grundrisse*, Marx (1973 [1939]:85–6) wrote that there can be “no production without stored-up past labour, even if it is only facility gathered together and concentrated in the hands of the savage by repeated practice;” and “Capital is, among other things, also an instrument of production, also objectified, past labour.”
- 10 Marx (1963–71:1, 364–9) discussed Locke’s labour theory of value and property rights in his *Theories of Surplus Value*. He noted how Locke followed Petty on many points of economic theory: money, interest and stock, for example. He also quoted Petty on rent, productive and unproductive labour, value, price and past labour.
- 11 This abstracts from the problem of selling that portion of the spindles used up.
- 12 Joan Robinson captured the essential difference between constant capital and variable capital, but she went too far counting the labour embodied in constant capital back *ad infinitum*.

When “gross national product” is represented by labour *value*, it consists of two parts—c, the pre-existing “constant capital” used up during, say, a year and net labour *value* (v+s)—the labour time worked during the year. The constant capital was produced in the past by labour time working with then pre-existing constant capital and so on, *ad infinitum* backwards. It therefore cannot be reduced simply to a number of labour hours that can be added to the net *value* of the current year. And there is no advantage in trying to do so.

(Robinson 1980 [1973]:V, 255)

Guglielmo Carchedi (1986:225–7) calls this “the infinite regression problem,” which he disputes on the grounds that only the socially necessary labour time needed to reproduce constant capital transfers value into new commodities.

- 13 E.von Böhm-Bawerk (1949 [1896]) was among the first and most influential critics with his *Karl Marx and the Close of His System*. He was followed by L.von Bortkiewicz (1949 [1907]), J.W.Scott (1920), P.H.Wicksteed (1933 [1910]), among many others. Note 16 extends the list.
- 14 Marx (1961–62 [1867–94]:III, 170) also thought that “the sum of the profits in all the spheres of production must equal the sum of the surplus values, and the sum of the prices of

production of the total social product equal the sum of its value,” but this is not necessarily so, as Meek (1956a) illustrated.

- 15 A further complication arises because the past labour embodied in things that are no longer being produced, such as barge canals and stone bridges. They are still being used today and embodied in the production of new commodities, but they cannot be transformed into market prices using today’s prices. Technologically obsolete constant capital may have no current cost of reproduction, though it may continue to earn what Marshall called a quasi-rent. The value of old capital goods for Marshall is simply the present value of their quasi-rents, which is often unrelated to their cost of production.
- 16 The debate extends well beyond what Marx wrote: P.M.Sweezy (1942), J.Winternitz (1948), F.Seton (1957), P.A.Samuelson (1971a), M.Morishima (1973), R.Meek (1977), L.Pasinetti (1977), J.Robinson (1977), I.Steedman (1977), E.K.Hunt (1979), J.E.King (1982), A.Freeman (1984), F.Moseley (1993) and C.Carchedi (1993), for example, among a great many others, all of which would require a large book to review. The intensity of the debate has not diminished with passage of time, as illustrated by the collections of essays in *The New Value Controversy and the Foundations of Economics*, edited by A. Freeman, A.Kliman and J.Wells (2004).
- 17 This is essentially Joan Robinson’s point when she wrote:

The relative prices of particular commodities were not relevant to Marx’s main argument, for it is concerned with the overall division of the net product (or value added) of industry as a whole between wages and profits. The overall rate of exploitation—the ratio of net profits to wages—is the clue to distribution.

(Robinson 1980 [1969]:IV, 60–1)

- 18 J.A.Schumpeter (1954:651) and M.Blaug (1978:251) appear to equate Marx’s surplus value with the excess profits of neoclassical theory, in which case competition would tend to reduce surplus value to zero. Labour is exploited in Marx’s sense, however, because labour produces all commodities, as Smith asserted, but labour does not receive all the income. Profits arise from unpaid labour time. Normal profits are simply less exploitive than excess profits.
- 19 “While appropriation by itself is an objective fact, pure and simple,” wrote Walras (1954 [1874–77]:78), “property, on the other hand, is a phenomenon involving the concept of justice; it is a right.”
- 20 P.M.Sweezy (1942) and P.A.Baran and P.M.Sweezy (1966) discuss the decline of competition and the rise of monopoly from a Marxian point of view. They point out that surplus value may increase with monopoly.
- 21 T.Sowell (1960) gives a useful analysis of the immiseration of labour.
- 22 Sir Robert Giffen (1884) reported in his *The Progress of the Working Classes in the Last Half Century* that the real income of English workers nearly doubled between 1830 and 1880.
- 23 Among many others, J.A.Schumpeter (1954:651–2), J.Robinson (1980 [1973]:V, 258–60) and M.Blaug (1978:257–61) criticize Marx’s theory of the falling rate of profits.
- 24 The authorities on Marx’s theory of cycles often emphasize different aspects of his work. See, for example, H.Smith (1988 [1937]), Maurice Dobb (1940), Paul M.Sweezy (1942), Joan Robinson (1966 [1942]), Shigeto Tsuru (1976 [1952]), Leo Rogin (1956), E.Heimann (1964 [1945]), Howard Sherman (1971), David S.Yaffe (1990 [1972]), M.Itoh (1988 [1978]), E.K.Hunt (1979), among others.

11

Classical relics in neoclassical thought

- 1 The classical economists are here defined to include Adam Smith, T.R. Malthus, J.B.Say, James Mill, David Ricardo, N.Senior, J.S.Mill, Karl Marx and their kin folk in theory. The early neoclassical economists are here defined to be the founders of the marginal utility theory: Carl Menger, W.J. Jevons, Léon Walras and their followers. H.H.Gossen should be added to this list because of his earlier publication of *The Laws of Human Relations* (1883 [1854]), which stated the principle of diminishing marginal utility and the condition for maximum utility, sometimes called Gossen's first law and Gossen's second law, respectively. However, his work was not discovered and recognized for many years.
- 2 A.C.Whitaker (1968 [1904]:13) in *History and Criticism of the Labor Theory of Value in English Political Economy* called the origin of value the "ultimate nature" or "essence" of value, though he accepted uncritically the criticism of the classical theory of value by von Wieser, who made marginal utility the origin of value, instead of labour.
- 3 Enrico Barone (1935 [1908]) presented an elegant theory of socialism based on individual choice in his "The Ministry of Production in the Collectivist State," following earlier work by Vilfredo Pareto. His approach has not proved popular among socialists.
- 4 Marxian values would be proportional to market prices under a competitive regime, if every industry had the same capital structure. See Chapter 10.
- 5 Walras (1954 [1874–77]:119) wrote: "let the term *rareté* designate the intensity of the last want satisfied by any given *quantity consumed* of a commodity."
- 6 Walras (1954 [1874–77]:408–9) illustrated a fallacy in the notion of no rent land. If land on the extensive margin of cultivation has several doses of labour and capital employed on it, it will tend to yield a rent up to its intensive margin, so that rent exists on the extensive margin of cultivation.
- 7 The controversy over the doctrine of rent engaged many able commentators: C.Menger (1950 [1871]), W.S.Jevons (1957 [1871]), L.Walras (1954 [1874–77]), A.Marshall (1961 [1890], 1893), F.Fetter (1977 [1901]), E. Cannan (1967 [1917]), D.H.Buchanan (1946 [1929]), F.H.Knight (1956 [1935]) and G.J.Stigler (1941), among others. The critical literature on the theory of rent is reviewed by P.C.Dooley (1991) in "Marshall's Parable of the Meteoric Stones: Rent, Quasi-rent and Interest."
- 8 Ricardo reasoned that rent was not a cost of production.

That corn which is produced by the greatest quantity of labour is the regulator of the price of corn, and rent does not and cannot enter in the least degree as a component part of its price.

(Ricardo 1951 [1821]:77)

He also argued that a tax on rent would fall only on the landlords, who could not shift it on to anyone else. Furthermore, a tax on rent would not affect the quantity of land supplied, because, beyond the margin of cultivation, land pays no rent. Thus, the supply of land is perfectly inelastic.

- 9 George Stigler (1966:249) accepted this theoretical possibility, but maintained that, as a practical matter, "the consumption uses of land take only a tiny fraction of land." This is no doubt true for southern Saskatchewan, but not for southern England.

- 10 Mill (1965 [1848]:833–6) considered agricultural rent as the alternative cost to urban land; and Alfred Marshall (1893:89–90) conceded that rent is a cost where land has several uses, but he interpreted Ricardo as treating different crops as an aggregate output.
- 11 E.J.Mishan (1968, 1981) has addressed the related concept of producers' surplus. It implies that the income and substitution effects of all landlords must be zero. E.J.Mishan (1981:210–11) draws an L-shaped indifference curve to show that land has a specific use; but it is sufficient for the slope of the budget lines to be steeper than the slope of the indifference curves.
- 12 The concepts of pleasure and pain appeared long before Adam Smith wrote about "toil and trouble," so that they cannot be counted as classical relics; nor are they inconsistent with neoclassical theory. Jevons and Marshall both supposed that labour may at first be pleasurable, so that its marginal utility is positive; but that labour become irksome, tiring or painful as the hours pass, so that the marginal utility of labour diminishes and becomes negative, that is, it becomes marginal disutility. The notion of real sacrifices fell victim to the doctrine of ordinal utility. Indifference curve analysis treats the supply of labour as a sacrifice of leisure time, not toil and trouble. It compares leisure—an endowment of labour (L_0) minus labour supplied (L^s)—with consumption (C), so that the utility function is $U=f(C, L_0-L^s)$. See Figure 11.2 as an example.
- 13 The analysis of the economic well-being of society is called welfare economics. Walras, Marshall, Pareto and Barone were among the principal founders of neoclassical welfare economics.
- 14 Notice that in the case of labour the total product is ABCD with AECD going to wages, which leaves a surplus of EBC. The reverse obtains in the case of capital. Does the labour surplus equal the interest paid to capital according to its marginal product? And vice versa? This is only true if the production function is homogeneous of the first degree, as Enrico Barone (1965 [1895]) proved in his rejected review of Wicksteed's *The Co-ordination of the Laws of Distribution*. Perfect competition requires this condition.

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