

Notes on the Theoretical Foundations of Political Economy

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Chapter 1

Introduction

*Theoretical Foundations of Political Economy*¹ was first taught at Barnard in 1980 by Professor Sylvia Hewlett, as a core course in the Political Economy track to the Economics Major. The course has always involved reading classic primary source texts in the history of economic thought, intensive class discussion, and the writing of critical/expository papers on the issues raised. Since the founding of the Barnard Writing Fellows Program, the course has been a "writing intensive" course, in which students prepare drafts of papers for conferences with Writing Fellows and then revise these drafts for final submission to the instructor for a grade.

The core readings of *Theoretical Foundations* are Adam Smith's *Wealth of Nations*, central economic texts of Karl Marx, including a substantial part of *Capital*, Volume I, and John Maynard Keynes' *The General Theory of Employment, Interest, and Income*. The present version of the course also includes Thomas Malthus' *An Essay on the Principle of Population*, important chapters of David Ricardo's *The Principles of Political Economy and Taxation*, Friedrich Engels' *Origins of the Family, Private Property and the State*, central chapters from William Stanley Jevons' *The Theory of Political Economy*, Carl Menger's *The Theory of Value*, and John Bates Clark's *The Distribution of Wealth*.

1.1 The goals of *Theoretical Foundations*

These classic texts announce and address central political economic questions of the present day. Much contemporary writing and debate on these issues restates the positions first put forward by the classic authors, and modern discussion continues to return to these sources for

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fresh inspiration and insight. *Theoretical Foundations of Political Economy* looks at the history of economic thought primarily for its contribution to our understanding of current political economic problems, not as an exercise in piety or abstract scholarship in the history of ideas.

The course aims to strengthen students' knowledge and competence in several dimensions.

1.1.1 Reading, writing, thinking skills

Many students of economics feel inhibited from forming their own opinions about important political economy issues, and expressing them in speech and writing because they feel they "don't know enough", or "know nothing" about these complex issues. *Theoretical Foundations* addresses this issue directly by supporting students in the development of their critical thinking and writing skills in the political economic field.

The classic political economy texts of *Theoretical Foundations* offer a rich variety of concepts and problems for analysis and critique. In reading these texts and writing critical expository essays on them, students learn to deploy the basic analytical concepts of political economy, to see their potential contradictions, and to apply them to real-world examples. These short essays hone the writing and analytical skills students will use in their later study of economics and in graduate study and careers that put a high premium on clear and cogent analytical writing about economic issues.

In order to make the connections between the classic texts and contemporary issues, students are encouraged to read regularly the economic reporting in serious journals such as the *New York Times*, *Business Week*, and *The Economist*.

1.1.2 Familiarity with the sources of economic concepts

Theoretical Foundations provides students with a map of the central issues and concepts of political economy that allows them to locate and integrate their other courses in economics. The course covers a broad range of schools of economic thought, Classical Political Economy (Smith, Malthus and Ricardo), the Marxist Critique of Political Economy (Marx, Engels), the Marginalist or Neoclassical revolution (Jevons, Menger, Clark) and Keynesianism (Keynes). The insights and ideas from these schools of thought underpin a large proportion of modern economic writing. Students who have taken *Theoretical Foundations* are in a position to recognize the sources and internal logic of the concepts they are taught in other courses.

1.1.3 Orientation toward contemporary political economic issues

The classic texts of political economy address the central problems of industrial capitalism on a world scale, which continue to structure the political and economic dilemmas of contemporary society. While texts written 60–200 years ago obviously cannot address the concrete details of contemporary issues, they nonetheless offer central insights into the structure of contemporary problems and their interlinkages.

An understanding of the Marxist critique of capitalism illuminates the problem of the reconstruction of socialist economies, for example, in part through providing insight into the origins and structure of socialism, and in part by clearly identifying the fundamental political and economic conflicts nascent capitalist institutions produce.

The issues of stability, growth and competitiveness of capitalist economies and the impact of government policies on economic development, a major preoccupation of contemporary political discourse, is the core concern of the classic texts. The role of technical change in capitalist society is a key topic in the Classical political economists and Marx. The role of state policies in fostering and hindering economic competitiveness arises in Smith, Ricardo, and Keynes.

Our contemporary anxieties about the impact of economic development on the environment, resource base and biosphere of the earth find their roots in classical political economic discourse. The theme of limited growth finds its sharpest exposition in Ricardo's study of the exhaustion of land resources, the fall in the rate of profit and the emergence of an economic stationary state.

Capitalist economic development brings with it sharp disparities in regional and personal income levels, which in turn become a major source of contemporary political and economic conflict. Classical political economy, Marx, and Keynes all address the role of these class divisions in the metabolism of capitalist development.

The broad picture the classic texts paint of the process of capitalist economic development offer an indispensable background for understanding the phenomena of migration, urbanization, and the emergence of racial and gender conflicts at the center of contemporary societies.

1.2 An Overview of *Theoretical Foundations*

1.2.1 Adam Smith

Smith begins his textbook of economics with a vision of capitalist economic development as a self-sustaining, largely self-regulating *virtuous circle of capital accumulation*. The growth of wealth through private initiative creates a wider and deeper market that allows for a more detailed division of labor, which in turn raises labor productivity and creates more wealth. When this virtuous circle functions well it is the source of many social and political advantages; when it becomes dysfunctional, it can be the source of intractable conflicts and social harm. Smith is on the whole cautiously optimistic about the robustness and social beneficence of capital accumulation, but spends a great deal of his book investigating the policies that can foster and destabilize the process.

Smith introduces the *theory of value* as a basic tool of political economic analysis, on which all economic reasoning ultimately depends. In fact, Smith puts forward two incompatible theories of value, the *labor theory of value* based on the idea that the expenditure of labor is the true social cost of wealth, and an *adding-up theory of value* which tries to derive the price of a commodity from the prices of the inputs of labor, capital and land that enter into its production. The logical problems with each of these theories of value are the source of major theoretical efforts in political economy.

The conceptual framework for understanding the quantitative side of political economy is *value-added accounting*, which Smith explains in surprisingly modern terms. This leads him to the theory of the *distribution* of value added among workers, capitalists and landowners, and to a theory of the *natural price* of commodities based on long-run equilibrium levels of wages, profits and rents.

Capital accumulation is the central engine of economic development for Smith. His inquiry into the sources of capital accumulation is couched in the language of *productive and unproductive labor*. Productive labor, like factory workers, produces a marketable product and yields a profit to its employer which can be the source of future capital accumulation, while unproductive labor, like domestic servants, simply drains the wealth of the employer, so that its employment actually reduces the fund available for capital accumulation.

Smith's theory of money is in the *banking school* rather than the *currency school* tradition. The latter is the source of the modern *quantity of money theory of prices*. Smith, however, sees money prices as largely regulated by the cost of gold production, and the variation of the quantity of money in circulation as more closely linked with the

scale of production and the rate of increase of output than with money prices.

The political economic centerpiece of Smith's book is his advocacy of *laissez-faire economic policy* in opposition to the *mercantilist policy* popular in the Europe of his time. For Smith the core of *laissez-faire* policy was to reserve the decision as to where wealth should be invested to the private wealth-holders themselves (with some important exceptions concerning national security.) His critique of mercantilism continues to resonate in contemporary debates about the wisdom of industrial policy, trade restrictions, and employment security. Smith's conception of the wealth of a nation and its increase prefigures contemporary concerns with balance sheets of national assets and liabilities, including environmental assets and damage.

1.2.2 Thomas Malthus

Malthus wrote as a critic of the "human perfectibility" literature of the late 18th century. He puts forward a rhetorically powerful argument that the tendency toward explosive population growth dooms any schemes for ameliorating the average state of human society.

Malthus is a pioneer in clearly enunciating a scientific model of demography. Malthus' model is based on the idea that a rise in the standard of living resulting from an increase in real wages will sharply lower mortality rates, especially infant mortality, and thus lead rapidly to an increase in population and labor supply, thus pushing the real wage back down. (A fall in the real wage would be reversed by symmetrical mechanisms, in his view.) Since Malthus thought that food production was relatively inflexible, he predicted a situation in which human population is maintained in equilibrium at a low standard of living with high mortality and chronic food shortages. Though this model has proved to be incapable of predicting the *demographic transition* of modern industrial economies, in which a fall in mortality is matched by a fall in fertility rates, and population stabilizes with a long lifespan and low mortality and fertility, it still influences popular conceptions of world population problems and is the analytical foundation of the modern science of demographics. Malthus' analysis of food production has proved similarly to be far off the mark, but the reasons for the failure of his theory give us important insights into the dynamics of population and agricultural technological change.

Malthus' analysis of population also extends Smith's conceptions of *equilibrium* to population and the level of the real wage, since in his model actual wages oscillate around the level at which the mortality rate just balances natural fertility.

1.2.3 David Ricardo

Ricardo is one of the most penetrating thinkers ever to write on economic topics. His book on political economy begins with a critique of Smith's adding-up theory of value and develops a more rigorous and powerful version of the labor theory of value. In Ricardo's theory wages, profits and rents divide the net product of an economy according to laws of distribution derived from competition. Ricardo adopts Malthus' demographic analysis of the real wage in a one-sector *corn model* to determine its equilibrium level, and treats rent and profit as the residual shares of the net output of corn. Despite difficulties in extending this theory to the case where there are many different commodities produced, this framework allows Ricardo to arrive at very powerful conclusions about the dynamics of capital accumulation.

In Ricardo's vision, workers and landlords consume their incomes, while capitalists largely accumulate. This *class analysis* of the dynamics of capitalist production still offers important insights into a world divided sharply between rich and poor. The expansion of capital through accumulation allows for population growth in Ricardo's theory, but this increase in population presses against limited land resources and raises rents at the expense of profits. Eventually profits and the profit rate fall to zero, and the economy stagnates in a *stationary state*. Ricardo's analysis of *diminishing returns* to capital and labor inputs to production is the foundation of neoclassical equilibrium theory, and prefigures contemporary concerns about environmental consequences of unbridled economic growth and the *limits to growth*.

In Ricardo's view technological change and international trade could at least postpone the stationary state, by increasing the availability of cheap food for the growing industrial labor force. Ricardo's analysis of the advantages of international trade, based on his theory of *comparative advantage*, continues to be the foundation of modern analyses of trade and growth policy.

1.2.4 Karl Marx

Marx came to economics from studies in history and philosophy, where he proposed the theory of *historical materialism*, which sees the development of human societies as closely linked with their level of technological development, which in turn depends critically on the *social relations* governing the appropriation and allocation of the *surplus product*. While Smith, Malthus and Ricardo assumed that there were *universal laws* governing political economy, Marx argued that each stage of human development produced its own particular *laws of motion*, and that

the contradictions of each *mode of production* such as slavery, feudalism and capitalism, paved the way for the emergence of its successor. Marx directs his critical analysis to a study of the ways in which human economic and political institutions *reproduce* themselves and, when they fail to reproduce, lead to revolutionary changes in society.

Marx analyzes most human societies as *class societies*, in which a particular class (slave-owners, feudal lords, capitalists) appropriates the surplus product of the direct producers (slaves, serfs, workers). Marx found in Ricardo's labor theory of value a rigorous analysis of the process by which surplus product is appropriated in the form of surplus value in capitalist society. The exact mode of appropriation of surplus is a key factor in Marx's analysis, and leads to very different laws of motion of society.

Marx criticizes Malthus' theory of population and Ricardo's theory of the stationary state for not taking into account the specificity of the capitalist mode of production and particularly of the *technological dynamism* built into a system of competing capitals. Marx argued that capitalism would not subside into a stationary state because of this inherent technological momentum, but would transform itself into another mode of production, *socialism* in which control of the social surplus was democratized.

Friedrich Engels, Marx's close collaborator, uses the methods of historical materialism to study the emergence of gender relations in marriage and the family as a systematic aspect of the development of political and economic institutions.

1.2.5 W. S. Jevons, Carl Menger, and J. B. Clark

In part in reaction to Marx's politically powerful reformulation of Classical political economy, a group of *marginalist* thinkers emerged at the end of the 19th century to found *neoclassical economic theory*, the school of economic analysis that remains dominant in industrial capitalist societies. Rather than just tinkering with the labor theory of value, the marginalists reject it wholesale as the basis of their revolution in economic theory, and put forward a *subjective theory of value* linking the value of commodities to their *marginal utility* to consumers. This change in the theory of value leads to major changes in the method and scope of economic analysis under the neoclassicals. Economic theory focuses on *the efficient allocation of resources* rather than on accumulation and technological change. The class theory of distribution developed by the classical economists gives way to a *factor theory of distribution* based on the *marginal productivity* of factors in production. This amounts to

explaining the wages of labor and the profits of capital as exactly analogous to the rent of land in Ricardo's theory. The distribution of income no longer reflects a structural property of the economic system, as in the classical political economists, but becomes an accidental and contingent result of natural differences in talent, intelligence and temperament.

The neoclassical economists reformulate Smith's defense of laissez-faire policy, but in terms of the *Pareto-efficiency* of competitive equilibrium allocations in the absence of *externalities* and the presence of *full information* on the part of market transactors. This approach to economic policy also creates a rationale for government intervention in cases of *market failure*, where monopoly power, externalities or informational imperfections play an important role.

1.2.6 John Maynard Keynes

The classical political economists (though not Marx) share with the neoclassical tradition the assumption of *Say's Law*, which holds that the willingness to sell commodities, including labor-power, on the market is simultaneously an expression of the willingness to buy other commodities, so that in the aggregate there can never be an excess supply of commodities. Say's Law has the important implication that *aggregate demand* has no long run influence on economic outcomes. For example, Say's Law underpins Ricardian trade theory conclusions, since it predicts that workers who lose jobs as the result of international competition can always find other jobs (perhaps at lower wages) in other sectors of the economy.

Keynes' economic analysis directly challenges these presuppositions on the grounds that in the *short run* in monetary economies demand is the controlling factor in determining production and investment decisions, and that the classical *long run* is only a succession of demand-determined short run equilibria. The classical economists saw *money as a veil*, which they abstracted from theoretically in their analyses, on the ground that a well-functioning monetary system acted exactly as if commodities could be exchanged directly for each other without the intervention of money. For Keynes money is the link between the present and an uncertain and fundamentally unknowable future, and thus cannot be neglected in economic analysis without arriving at drastically misleading results. Because the existence of money separates the decision to sell in the present from the commitment to buy in the future, Say's Law does not hold in Keynes' view. The *subjective expectations* of potential investors as to the profitability of investment projects regulates the amount of investment spending and hence the level of aggregate

demand and output. Keynes challenges the laissez-faire consensus of previous political economy on the ground that the state has to engineer the appropriate boundary conditions of money supply and deficit policy to allow for demand levels that approximate the full employment assumed by the classical political economists. Furthermore, Keynes questions the ability of private investors to make wise and informed decisions over very long future periods about which they must be highly uncertain. For Keynes the state plays a vital and positive role in securing the conditions for capital accumulation.

1.3 Learning Political Economy

This brief review suggests some important points about learning political economy. There are orderly and rigorous concepts and theories in political economy, but they play a very different intellectual role from the concepts and theories of physical and biological science. Because of the complexity of human social interaction and the difficulty we have in confronting our own social existence objectively, there cannot be a "grand unified theory" of political economy. Each of the conflicting theories of political economy explains part of the truth, but each contains its own limitations.

The student of political economy faces the dual challenge of understanding these rigorous conceptual analyses at a high critical and logical level, and simultaneously of becoming adept at detecting their limitations and proper scope of application. The key to developing this kind of knowledge, which is perhaps more an art than a science, lies in the difficult task of moving from the powerful abstractions of conceptual theory to their concrete correlatives in real historical and social circumstances. The student of political economy has to see beyond the immediate vocabulary and imagery of theory to the kernel of social reality it describes. For example, Ricardo understands diminishing returns as the problem of rising food prices due to the exhaustion of arable agricultural land as capital accumulation increases population. The astute political economist does well to recognize that what Ricardo calls "land" includes all natural resources, and that the diminishing returns Ricardo sees in rising food prices might also show up as increasing environmental degradation and cleanup costs. With these insights Ricardo's theory gains resonance and depth as a way of looking at fundamental problems of economic growth on a finite planet, and the consideration of contemporary environmental concerns can be put in a broader historical perspective as well.

Chapter 2

Adam Smith and the *Wealth of Nations*

2.1 The Division of Labor and the Extent of the Market

Adam Smith starts his discussion of the sources of the *Wealth of Nations* with the concept of the *division of labor*. Smith means by this the breaking down of production of useful products into a series of separate tasks, each of which can be accomplished separately from the others.

For Smith the primary effect of the division of labor is to increase *labor productivity*, the average amount of useful output available per hour or day of labor. Labor productivity is measured fundamentally as a ratio of the output of some particular good, pins, wheat, houses, cars, education, to the amount of labor required to produce it. Thus the basic measure of labor productivity in a firm or country or the whole world takes the form of statistics on the amount of wheat produced divided by the total number of labor hours devoted to producing wheat, or the number of automobiles produced divided by the total number of labor hours devoted to producing cars.

Since labor productivity and its rate of increase differ in different sectors producing different products, we often want to take an average, or an index of labor productivity over a whole economy. Economists do this by weighting the output of each sector (say, wheat and automobiles) by the relative market price. This amounts to dividing the *real GDP* of a country (the GDP corrected for inflation by the use of an index of prices) by the total labor input measured in hours or days or employed

workers.

Thus Smith is proposing that an important factor in determining labor productivity is the degree of division of labor, and that increases in the division of labor can lead to major increases in labor productivity, both in individual sectors, and in the average for an economy as a whole.

2.1.1 The advantages of the division of labor

Smith puts forward three ways in which the division of labor increases labor productivity: the *increase in dexterity of the workers*, the *reduction in time lost passing from one task to another*, and the *invention of machinery* specialized to particular tasks.

The dexterity of individual workers is supposed to increase because the worker spends all her time on one task, and can become extremely skilled at it. Anyone observing the difference between the speed with which a professional specialist and a novice can perform a task is struck by this effect. On the other hand, excessive specialization can also lead to boredom, fatigue, and alienation from the task which can lower a worker's output as well.

The reduction in time lost moving from task to task is of limited importance, since these gains can be realized by workers who move from one task to another relatively infrequently, so that the set-up costs are spread out over long runs of effort. For example, a pin maker might spend one whole day cutting pins from wire, and the next sharpening them, thus avoiding time lost moving from task to another within the same work shift.

The invention of machinery, on the other hand, appears to have almost no limits in the increasing division of labor. Tools and machines can be specialized to maximize the worker's effectiveness at each aspect of a productive task. In metalworking, for example, a worker might become quite skilled at shaping gears and cams with specialized files and jigs, but a greater impulse to productivity comes from the introduction of lathes and other specialized cutting tools, and an even greater increment from the employment of dies and stamping machines adapted to producing particular shapes.

The division of labor can give rise to the emergence of wholly new specialized tasks, and make possible the production of completely novel outputs. Instead of wiring circuitry with soldering irons, for example, modern electronics workers etch integrated circuits onto silicon chips. The emergence of a market for self-contained electronic circuits with particular functions can give rise to entirely new methods of production and, eventually products.

Notice that for Adam Smith much of what we think of as *technological change*, the emergence of new products and new methods for producing existing products, is at its root an aspect of the division of labor, and hence is an endogenous and predictable consequence of the ongoing process of economic development.

2.1.2 The Division of Labor at the Detail and Social Levels

Though Smith's famous example of the pin factory suggests that the division of labor takes place in the individual factory or site of production, his discussion makes clear that the division of labor also takes place at the level of the whole economy or society. The *detail division of labor* is the process by which production at a certain site is divided up into specialized tasks, along the lines of the pin factory. The *social division of labor* is the process by which different aspects of a complex production process can be separated into different points of production, which may be located in different firms, or even different geographical regions.

Again, if we think of the production of modern electronic devices, we can see the social division of labor at work. The computer or calculator is often designed taking an already existing integrated circuit chip as its core. Thus the computer manufacturer effectively farms out the manufacture of the chip to a completely different firm. The stages of chip manufacture, as well, may be spread all over the world, with the logical chip design located in, say Texas, the physical chip design and creation of the templates for etching in Massachusetts, the actual etching and creation of the chip in Taiwan, and the attachment of pins and connectors to the printed circuit in the Philippines.

The social division of labor can be supported either by markets and spontaneous trade, or by social planning mechanisms, or, more frequently, by a combination of both. The construction of the railroads in the U.S. in the 19th century was in part spontaneous response to market forces, but in part fostered by a strong and effective national transportation policy, including the provision of substantial subsidies in the form of land grants to railroad builders. The market fostered the development of the railroads because they allowed for a much more refined social division of labor (for example, concentrating wheat production in one area of the country, and dairy and fruit production in other areas), but the Federal government's policies envisioned the broad outlines of this national economic. Japan's spectacular economic development since 1960 has been the result of a mixture of social planning of the division of labor through the Ministry of Industry and Trade (MITI), and the market-mediated efforts of individual firms.

Discussion Questions:

What role does the division of labor play in the conversion of the previously socialist economies of Russia and Eastern Europe to capitalist economies oriented toward the world market? What type of social division of labor did the socialist political regimes foster, both internally in each country, and in terms of patterns of international trade? What changes in these patterns must take place to adapt these economies to the world market?

Discuss the U.S. policy of isolating Cuba through an economic blockade in terms of the division of labor. What impact does the blockade have on Cuban productivity?

Discuss the impact of regional common markets, such as the European Union and the North American Free Trade Area (NAFTA) in terms of the division of labor. What impact do you think these institutions have on the productivity of labor in the countries involved? Would the world division of labor be fostered even more by the establishment of freer world international markets?

2.1.3 Division of Labor and the Size of the Market

Having established the idea that the increasing division of labor underlies rises in labor productivity, Smith argues that the division of labor itself is largely determined by the *size of the market*. In modern language we would refer to *increasing returns to scale*, the tendency for costs of production to decline with the overall scale of production. This is an extremely important and pervasive theme in political economy. In many lines of production it is possible to lower unit costs by building large production facilities with the capacity to produce very large amounts of the output. The high *fixed costs* of the facility are eventually paid for by the lower *variable costs* and higher profits achieved for each unit of output. A good example is the mass production of automobiles undertaken in the early 20th century by Henry Ford. Ford's assembly-line methods of production allowed him to produce cars at a fraction of the cost of the individually hand-made automobiles produced by his competitors, but he could recover the cost of his factories only by selling a very large number of units.

The scale of production in an industry depends on the size of the market, that is, the number of units of output the industry can sell. This in turn depends on the *number of consumers*, the *income and demand patterns of the consumers*, and the *number of producers* sharing the market.

The number of potential consumers of an industry's product can be increased by population growth and by improvements in transportation technology which make the product available to a larger number of people. Smith emphasizes both these factors.

The income and demand patterns of the consumers also have an important influence on the size of the potential market for output. As wages, profits and rents increase in the course of economic development, the same number of consumers can support larger productive facilities because they buy more goods and services of all kinds. In addition, economic development leads to a shift in demand patterns, away from locally-produced and towards mass-produced goods. These shifts also foster the increase in the market.

The size of productive facilities, and as a result the degree of division of labor that can be achieved, also depends on how many firms share the market. If there are a thousand small firms of approximately equal size sharing a market, the average scale of production facilities of each one is going to be much smaller than if there were only five or ten firms in the industry. This is one of the main motivations for mergers and acquisitions, which allow a large number of small firms to coalesce into a small number of big firms with bigger productive facilities and lower costs. A current example is the restructuring of the banking industry the U.S. has been going through for the last 20 years. In most countries retail banking is concentrated in fewer than 10 very large banks that operate branches everywhere. In the United States Federal and state government regulations limiting inter-state banking and branching within states protected the continued existence of over 10,000 commercial banks, many of them quite small. Because economies of scale in banking are significant, there is substantial market pressure to consolidate this industry into a smaller number of bigger banks. Federal and state legislations has been gradually changing to permit this consolidation. Similar shakeouts take place from time to time in other industries, such as computers, retail discount stores, and so forth.

Discussion Questions:

What is the relation between scale of production, division of labor, and advances in technology? To what degree do technological innovations depend on the extent of the market?

What is the scope for division of labor and reorganization of production in higher education?

What has been the impact of the division of labor on housework and childcare?

What differences are there between the division of labor in human societies and the division of labor achieved by other species, such as ants?

What is the relation between the division of labor and the intensity of labor? Does the division of labor necessarily mean harder or less pleasant work for most people?

2.1.4 The Virtuous Spiral of Economic Development

The links between the division of labor and the extent of the market create a system of *positive feedbacks*, in which increases in the division of labor lower costs, raise real incomes, and extend the market, thus leading back to more increases in the division of labor. This process creates a self-reinforcing positive spiral of economic development. For Smith this positive feedback process is the deep secret of the wealth of nations. Those nations which can foster the spontaneous creation of the virtuous spiral and whose policies allow it to proceed without running into legislative or institutional limitations, will prosper and grow economically.

Smith is aware, as the rest of his book indicates, that it is not always easy to create the conditions for the virtuous spiral of economic development to take hold, and that positive feedback processes are sometimes difficult to manage because of their inherent stability. Nonetheless, Smith puts his faith in the ultimate benefits to be gained from harnessing the virtuous spiral to increase standards of living and enhance the wealth of the sovereign.

2.1.5 The Division of Labor and Employment

The increasing division of labor with its consequent rise in labor productivity has at least one immediate negative effect, a reduction in the demand for labor in the industries undergoing rapid rises in productivity. The reason for this is that the increases in the productivity of labor may run ahead of the widening of the market. Even though more units of the product are being produced and sold, if labor productivity is rising even faster, fewer workers will be required to produce the output, and unemployment can result.

Smith acknowledges this effect of the increasing division of labor, but argues, on the basis of reasoning that a few years later came to be known as *Say's Law*, that *in the aggregate* there cannot be a chronic excess supply of labor. The argument is that the workers unemployed by technological change in one industry can eventually find jobs in other

industries, since the source of demand for commodities over the economy as a whole is in real terms just the willingness of workers and owners of capital and land to make their resources available for production.

We will have more to say about Say's Law later, but it will help to keep two points in mind. Over long periods of time, it appears that something like Say's Law does operate: at least there is no long-term drift toward constantly increasing unemployment as the result of technological change and rising labor productivity. On the other hand, over shorter periods, and the medium run, the absorption of technologically unemployed workers into new jobs can be quite slow and create real social, economic and political problems. The stubbornly high unemployment rates in many Western European countries over the last decade and a half are an example. At least one important issue about Say's Law is what time scale we are looking at, and what we believe is the analytical connection between economic events on a short and long time scale.

Discussion Questions:

Could the division of labor be supported by any other institutions than private exchange on markets? Has it been in historical fact?

What conditions underly the development of a network of exchange?

What role do legal protections of private property, public order, public works and transportation infrastructure play in fostering the division of labor?

Give some examples of the division of labor in the contemporary world economy. Do these examples tend to support Smith's general account?

The U.S. and other advanced industrial capitalist countries have experienced a *slowing of the rate of growth of the productivity of labor* over the last 25 years. What might this have to do with the division of labor?

2.2 The Theory of Value

Theories of value and distribution inevitably arise when we analyze the operation of exchange-based economic systems like capitalism. Theories of value have the aim of explaining why commodities have value and what determines the relative value of commodities. Theories of distribution focus on the division of the value of commodities among the different components of income, wages, profits, and rent.

2.2.1 Nominal and Real Price in Smith

Smith begins by distinguishing what he calls the *nominal price* of a commodity (the amount of money for which it exchanges) from the *real price* of the commodity, the amount of labor for which it exchanges. In Smith's view the labor expended in the production of the commodity is the ultimate real social price paid for it: in other words, in this line of thinking labor is the only really scarce productive resource.

Smith is not entirely clear about the labor price of a commodity, since there are two possible meanings one can give to it. One is the amount of *labor expended* in the production of the commodity, which is what Smith has in mind, for example, in his discussion of the exchange of deer and beaver in a primitive economy. But once we have money prices of commodities and labor sells for a wage, we might also understand the labor price of the commodity to mean the amount of labor the commodity could exchange for by selling it for its price and using the money to hire labor for the wage, which is called the *labor commanded* by the commodity. There is a difference between labor embodied and labor commanded because wages in capitalist societies comprise only a fraction of the price of the commodity, since some of the value contained in the commodity becomes profit and rent. Thus in general a commodity can command more labor than it embodies.

An example may help to make this point clear. Suppose that 1 year's labor and 20 bushels of seed corn can produce 120 bushels of harvested corn. The *net product* of the year's labor is 100 bushels of corn (since of the 120 bushels harvested 20 just go to replace the seed corn used up.) Under these circumstances the labor embodied in 100 bushels of corn is 1 year. But suppose that the real wage of agricultural workers is 50 bushels of corn, with the other 50 bushels taking the form of profit and rent. Then 100 bushels of corn could command 2 years of labor. Smith shifts back and forth between the labor embodied and labor commanded conception of the real price of commodities.

If money is a produced commodity like gold, as it was in Smith's time, then there is a direct relation between nominal price and real price established by the real price of gold. For example, if 10 hours of labor are required to produce a table, 20 hours of labor are required to produce an ounce of gold, and 5 hours of labor are required to produce a bushel of wheat, 1/2 ounce of gold or 2 bushels of wheat will exchange for a table. If, an ounce of gold is equal to \$20 (as was the case in the United States from 1791 to 1933), we would find the price of a table to be \$10 and the price of a bushel of wheat to be \$2.50.

The basic vision of Smith's labor theory of value is that labor is expended to produce commodities which are then sold for money:

labor \rightarrow commodities \rightarrow money

The nominal price of a commodity, in this view, can vary:

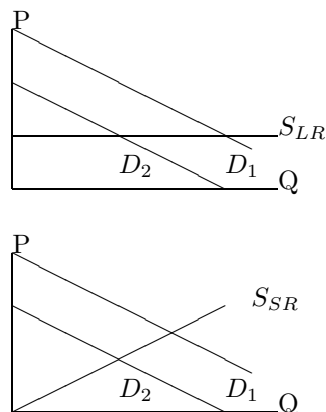
- a) because it takes more or less labor to produce the commodity
- b) because it takes more or less labor to produce gold
- c) because relationship between gold and money changes as the result of state policy.

2.2.2 Market Price and Natural Price

In discussing the theory of value Smith makes a distinction, which is extremely important for later political economy, between the *market price* and *natural price* of commodities. The market price is just the amount of money for which the commodity changes hands at any particular moment. It rises and falls because of shortages and gluts, changes of taste and supply, and speculation. But Smith believes that there are important forces tending to push the market price back toward a certain level, which he calls the *natural price* of the commodity. Since there are always disruptions in any market, he does not expect the market price to converge smoothly to the natural price and then stay there, but instead to fluctuate or *gravitate* around the natural price.

This fundamental insight into the dynamics of market prices survives into contemporary economics through Marshall's distinction between *short-run equilibrium* and *long run equilibrium*. Marshall assumes that in the short run the supply curve slopes upward, so that fluctuations of demand will push prices up and down (like Smith's market price.) But in the long run the entry and exit of firms will lead the supply curve to be horizontal at minimum average cost. In the long run fluctuations of demand change the scale of production of the commodity, while the price remains at the minimum long-run average cost, which is thus analogous to Smith's natural price.

Smith argues that the theory of value concerns the determination of the *natural price*, and that forces of "supply and demand" are responsible for the fluctuations of market price around the natural price. This is rather different from modern Marshallian and neoclassical price theory, which always views supply and demand as the proximate determinates of market price. Smith's distinction between market and natural price, as we have just argued, turns into the neoclassical distinction between the *short run* and the *long run*.



The Marshallian long-run supply curve (top graph) is horizontal at minimum average cost, corresponding to Smith's natural price. The Marshallian short-run supply curve (bottom graph) is upward sloping, leading to fluctuations of short-run price with changes in demand (analogous to Smith's market price).

2.2.3 Smith's Labor Theory of Value

Smith starts off his discussion of the theory of value by positing a *labor theory of value* in which the relative prices of commodities depends primarily on the relative amount of labor it requires to produce them. This is consistent with his argument that labor is the real price of commodities.

Smith's discussion of the labor theory of value raises many different ideas and issues that have prompted an unending stream of books and articles ever since. Smith himself does not by any means resolve all of these issues, and may not even have been aware of some of them. The situation is further complicated by the fact that Smith abandons the labor theory of value in the middle of his argument without explaining why, and shifts over to another theory, the *adding-up theory of value*.

Smith explains the labor theory of value with the parable of the producers of deer and beaver in a hunting economy without settled agriculture or industry. He argues that hunters of deer and beaver, would exchange deer for beaver at a ratio reflecting the ratio of the average labor time it takes them to hunt and kill each animal. If it costs one day's labor to hunt a deer and two days' labor to hunt a beaver, the exchange will be two deer for one beaver.

There are two different reasons why this exchange ratio might hold, and Smith's opinion about them is not very explicit. First, the exchange

might be in this ratio because both parties viewed this as a "fair" price, in that they both subjectively value the expenditure of labor as the ultimate real cost of a good. Second, competition might force exchange to the ratio of labor times because anybody in this society can shift his effort from deer-hunting to beaver-hunting. If a beaver hunter holds out for a higher price of beaver in terms of deer than the relative labor time, say, demanding three deer for his beaver, the deer hunters will refuse to trade with him, since they can go out and hunt their own beaver. Since it would cost them three days' labor to kill three deer and exchange them for one beaver, and only two days' labor to hunt the beaver themselves, they will prefer to shift over to beaver hunting. Of course these two arguments tend to merge into each other, though the second requires the additional hypothesis that anyone can shift costlessly between the two types of production.

If we project this parable into a society with settled agriculture and industry, it suggests that relative commodity prices will tend to reflect the relative labor time it takes to produce the commodities. As in the example above, if the table requires 10 hours of labor to produce and a bushel of wheat requires 5 hours, the table will exchange for 2 bushels of wheat. But as we move from the hunters in the primeval forest to production in a capitalist society there are important institutional changes that might influence relative prices. The hunters in the primeval forest did not have to pay any rent to hunt, and they owned their own weapons, traps and snares. But in a modern capitalist society the worker typically does not own her own means of production, and landowners have appropriated the productive land and will charge a rent on it. Thus a shift from producing tables to producing wheat is not simply a question of shifting the labor resources around, but also a question of shifting capital goods and land as well. This calls into question the argument that the ability of labor to shift from line of production to another will insure that commodities exchange in proportion to the labor required to produce them.

2.2.4 Value-added Accounting

Rather than pursue these subtleties to a conclusion, Smith turns his attention to explaining *value-added accounting*, which explains how the price of any commodity can be resolved into wages, profits and rent.

The basic insight of value-added accounting starts from the income statement (also called the profit-and-loss statement) of a commodity producing firm. The firm calculates its profit over a year by subtracting from its sales revenue the cost of the commodities it has produced and sold. The cost of producing the commodities falls into four categories:

the cost of inputs and raw materials purchased from other firms on the market; the wages paid to labor; the rent paid to landowners; and the profits remaining as a residual to the owners of the firm. Thus we have:

$$\begin{aligned} \text{Profit} &= \text{Sales Revenue} \\ &- \text{Cost of Purchased Inputs} \\ &- \text{Wages} - \text{Rent} \end{aligned}$$

On the other hand, the *value added* by the productive effort undertaken in the firm is the difference between its sales revenue and the cost of purchased inputs: the firm has added this much to the value of the purchased inputs.

$$\begin{aligned} \text{Value Added} &= \text{Sales Revenue} - \text{Cost of Purchased Inputs} \\ &= \text{Wages} + \text{Rent} + \text{Profit} \end{aligned}$$

Furthermore, the cost of purchased inputs in turn is resolved into the wages, profit, and rent of the supplier firm, together with its cost of purchased inputs. Over the whole economy, the cost of purchased inputs eventually is entirely resolved in wages, rent and profits. Thus Smith thinks of the price of the commodity as equalling the sum of wages, rent and profit received by the workers, landowners and capitalists who participated in its production.

Price	Profit
	Rent
	Wages

Value-added accounting decomposes the price of commodities into wages, rent, and profit.

There are two ways to think about this kind of quantitative accounting relation. On the one hand, one could view the price as being composed of and determined by the wages, rent and profit, which is the adding-up theory of value Smith pursues. On the other hand, one could view the whole price as being given, say, by the labor time required to produce the commodity, so that one of the income shares (e.g., profit) would be determined as whatever is left over once the other two (e.g., wages and rent) have been paid. David Ricardo pursues the second line of reasoning in his labor theory of value.

Smith's adding-up theory proposes to determine the natural price of the commodity by adding up the labor required to produce it multiplied by the *natural level of the wage*, the land required to produce it multiplied by the *natural level of rent*, and the capital required to produce it by the *natural profit rate*:

$$\begin{aligned} & \text{Natural Price} \\ &= \text{Labor} \times \text{Natural Level of Wage} \\ &+ \text{Land} \times \text{Natural Level of Rent} \\ &+ \text{Capital} \times \text{Natural Level of Profit Rate} \end{aligned}$$

This conception organizes the remainder of Book I. Smith addresses in order the theory of the wage, the theory of the profit rate, and the theory of rent.

2.2.5 Competition and gravitation

The decomposition of price into wages, rent and profit, is the basis of Smith's (and the other Classical economists') theory of why market price will tend to gravitate around natural price.

Suppose that the market price of a commodity is above its natural price. Then one or more of the income components must also be above its natural level. For example, if furniture is selling at market prices above the natural price, either wages or profits (or both) in the furniture industry are likely to be above their natural levels. These excess returns to labor and capital will tend to attract labor and capital from other sectors into the furniture industry, increasing the output of furniture and driving down the price. This is an example of a *negative feedback* process: the hypothetical starting point, a price higher than the natural price, sets in motion forces that tend to eliminate the excess.

If market price in a sector lies below the natural price, Smith argues symmetrically that returns to labor and capital in that sector will be depressed below their natural levels, so that labor and capital will tend to leave the sector, reducing the output and raising the price (and wages and profits for those workers and capitalists who stay in the industry.)

The Classical economists viewed this gravitation of market price around natural price as a never-ending fluctuation. Market price chases natural price, but can never catch it, except perhaps for a fleeting moment, because other factors, such as technology and patterns of demand, will always be changing and as a result disturbing the relation between market price and natural price in one direction or the other.

Contemporary economics, on the other hand, focuses more theoretical attention on the ideal imaginary state of *equilibrium*, where market price and natural price coincide and there are no residual forces tending to push the market price in one direction or the other. It is not always clear what the theoretical rationale for this focus is, but one position that many economists take is that the forces of negative feedback keep the economy close to the equilibrium state at all times, so that an understanding of the equilibrium state of the economy is a good approximation to its actual state. Other economists criticize this position on the grounds that what we care about is precisely the forces in play at any moment bringing about change in prices and incomes, and these forces are ignored in a purely equilibrium analysis.

2.2.6 Wages

Smith's chapters on the components of value added, wages, profit, and rent, have a lot of interesting insights, which have been the seed of important later work in economics, but they do not, in the end, give the systematic accounts of the determinants of the natural levels of wages, profits and rents that Smith seems to promise.

Employers and Workers

Smith believed that employers have a structural advantage over workers in the wage bargaining process (at least under the British laws of his time). Workers' "combinations" (that is unions) were illegal under eighteenth-century British law, but there were no comparable restrictions on the tacit or open combination of employers to depress wages. (Presumably, the laws depended on the incentives of competition to break up employer agreements.)

Wages and Subsistence

Smith, like the other Classical political economists, recognized that wages have the broad social function of allowing workers to reproduce themselves. Classical political economy sees population maintenance and growth largely as the consequence rather than the cause of economic development. In order for wages to perform this function, they have to be high enough to allow workers to buy a subsistence standard of living. Smith thought that wages could not fall for very long under this level.

At the time Smith was writing most urban workers had relatively recently moved from the countryside to the city, and had close family and

community contacts in rural areas. In these circumstances one response workers will have to wages falling below the customary subsistence level is to leave the urban labor market and move back, at least temporarily, to rural communities.

While Smith thought that customary levels of subsistence put a floor under the level of wages, he argues that, in fact, wages in progressive and developing capitalist economies are normally above the subsistence level. The reason for this is that as capital accumulates it normally requires more labor, which must be attracted from the countryside by higher wages. The process of increasing division of labor through the accumulation of capital, according to Smith, tends to raise wages above the subsistence level, so that workers to some degree share in the fruits of technological progress and the increasing productivity of labor. (We will see that other Classical political economists had rather different views on the operation of the capitalist labor market.)

Wages and Growth

Smith associates high wages and a high worker standard of living with a *growing* capital stock, rather than just with a *large* capital stock, and depressed wages and low worker standards of living with a declining capital stock, rather than a small capital stock. Thus he would expect a country with a prosperous and rapidly growing economy to exhibit high and rising wages, even if its actual capital stock is smaller than that of another country that is not growing so rapidly.

The Natural Level of Wages

These observations are penetrating and have stood the test of time, but unfortunately do not amount to an actual theory of the natural level of wages, which Smith needs in order to complete his adding-up theory of value. Smith's theory of wages addresses the *dynamics* of wage levels, that is, the forces tending to raise or lower wages, more directly than the forces determining the actual level of wages in a country at a point in time.

Discussion Questions:

What role does absolute population pressure play in Smith's theory of wages?

What role do the potential monopoly power workers have over the supply of labor and the potential monopsony power employers have over the demand for labor play in Smith's theory of wages?

Does Smith have a "subsistence" theory of the level of wages?

What mechanisms in Smith's theory of wages would tend to assure workers a share of the fruits of increasing labor productivity?

What role does the accumulation of capital play in determining wages according to Smith?

2.2.7 Profits on Stock

Capitalist production is organized around the pursuit of *profit*. Once the firm has paid for its raw materials and other purchased inputs (including tools and facilities for production) and paid its workers (and, if relevant, rent to landowners), the money left over from sales revenue is profit. Since large firms with large sales will tend to have more absolute profits than smaller firms, profitability is measured in two ways: the *profit margin* is profit as a percentage of sales revenue, and measures what proportion of the total price of the commodity represents profit; the *profit rate* expresses profit as a percentage of the *capital invested* in production. The profit margin is an important indicator of a firm's competitiveness, especially in relation to other firms in the same business, but the profit rate is economically the more significant measure. A prospective investor is concerned with how rapidly her wealth will increase as a result of investing in a firm, which is determined by the profit rate, and does not really care what the profit margin is. Industries that require a relatively small capital investment may operate with a low profit margin, but with profit rates on capital invested that are comparable to other industries with high profit margins, but much more capital invested per unit of sales revenue.

Adam Smith makes several important observations on profit rates and their evolution over time, though he does not actually put forward a theory of the natural rate of profit.

The Profit Rate and the Interest Rate

Smith thought that interest rates paid on money loans to capitalists were a good approximate indication of the profit rate in a given country at a given time. In a rough and average sense this is probably true, but there are many circumstances in which profit and interest rates can move in opposite directions. Certainly capitalists cannot afford to pay interest rates above their profit rates for very long (though they may do so temporarily in order to stay in business for the long haul), and competition among capitalists for funds generally will tend to pull interest rates above zero.

The Profit Rate Varies, and Falls with Accumulation

Smith argues that profit rates (like real wages) will vary from place to place and over time, so that it is impossible to settle on one level of the profit rate as normal or appropriate.

In this connection Smith raises a major theme of economics and political economy in asserting that profit rates tend to fall with the accumulation of capital (which he calls "stock.") Smith's discussion of the fall in the rate of profit with accumulation moves between several different levels. Clearly if we think of any particular sector of the economy, there will be a tendency for the rate of profit in that sector to fall as more capital moves into it, other factors being equal, since more capital means more production, which will tend to lower the price in the sector.

But Smith also argues that the rate of profit in the economy as a whole will tend to decline with the accumulation of capital in all sectors. He isn't so clear about why he thinks this will happen. It might be due to rising real wages if population does not expand as rapidly as capital, a theory neoclassical economists returned to in this century. It might also be due to rising rents if agricultural productivity does not rise in proportion to accumulation, a theory Ricardo develops, though Smith tends to be optimistic about the availability of imported food and new techniques of agriculture. It might also be due to technical change that increases the proportion of capital to wages in production that accompanies accumulation of capital, which was Marx's theory.

Almost all schools of economic thought have adopted some version of the thesis that profit rates tend to fall with accumulation, and the investigation of this idea has been one of the most fruitful lines of thought in developing the ideas of political economy.

Competition Tends to Equalize Profit Rates

Smith puts great emphasis on the tendency for competition among capitalists to *equalize profit rates* between different industries. His argument for this is a key element in his support for laissez-faire policies, and also the an important foundation of the concept of competitive equilibrium in later economic theory.

The idea is that if profit rates in one industry are higher than the average for the economy (Smith seems to identify this average profit rate with the natural profit rate) capitalists will tend to shift their capital toward that industry. As a result labor will move as well, and the output of the industry will rise, which tends to reduce prices and profit rates there. Symmetrically, capital will tend to leave industries where profit rates are lower than the average, leading to higher prices and

thus to higher profit rates for the capitalists who remain. In this way competition provides a negative feedback tending to make profit rates in all sectors equal. This is a key part of Smith's (and later political economy's) view of the capitalist economy as a *self-regulating* system that requires no external governance, a concept that underpins Smith's support of laissez-faire economic policies.

While Smith saw a *tendency* for competition among capitalists to equalize profit rates, it is doubtful that he thought that profit rates in any real economy would ever be completely equalized. The reason is that changes in demand, technology, and foreign competition will always be changing the relative profitability of the sectors of the economy. The movement of capital to seek profit rate equalization is a central part of the metabolism of the capitalist economy, but it will never reach its goal of completely eliminating differences in the rate of profit across sectors.

The Natural Rate of Profit

Smith's discussion of profitability has many important insights that are the source of later economic theories and models. But in the end he does not put forward an unambiguous theory of the natural rate of profit or its determinants in a given economy at a given time.

2.2.8 Variability of Wages and Profits

Smith argues for competition among workers and among capitalists as a pervasive force tending to equalize wages and profit rates in the economy. But he also points to factors that lead to long-lasting differences in wages and profit rates between different "employments" of both labor and capital.

The Agreeableness of Work

Some jobs are simply pleasanter than others to do. Other things being equal, Smith argues that the pleasanter jobs will have lower wages. Novelists, composers and painters, for example, will on average have lower incomes from those employments than clerical workers, since the production of art is more interesting than accounting.

Costs of Learning a Trade

Every line of employment involves some expenses in learning the skills and information required to do the tasks effectively. Smith thought that employments that had high costs of training would have correspondingly higher wages.

Variability of Demand

Some sectors of the economy experience a relatively steady demand and others a highly variable demand. Smith thought that wages in the variable demand sectors would be higher, to compensate workers there for the uncertainty and inconvenience of fluctuating employment opportunities. Construction trades in the modern economy are an example of this, since construction is highly sensitive to the business cycle and construction employment varies a lot over time. Wages of construction workers also tend to be higher than wages of comparably skilled workers in other sectors.

Curiously enough, Smith limits this effect to wages, not to profit rates. This is because he thinks, on the basis of eighteenth-century experience, that most capital is *circulating capital* that can be quickly moved from one employment to another in response to changes in demand. In the modern economy a much bigger proportion of capital is *fixed capital* which cannot be moved very rapidly from sector to sector. As a result profit rates in sectors with volatile demand also show a tendency to be higher than profit rates in stable demand sectors.

Trust

Some employments, according to Smith, put a high premium on the *moral character* of the workers. He gives the example of doctors and goldsmiths (who were the forerunners of deposit bankers), whose wages he thought were high because of the scarcity in the population of the trustworthy moral characteristics required in those lines of work.

Probability of Success

Some lines of work are inherently riskier than others. It is harder to predict the success of a lawyer, for example, than of a shoemaker, according to Smith, and as a result successful lawyers will have higher incomes than successful shoemakers. This effect also is important in the entertainment and sports sectors, where the success of individual aspirants is highly variable.

2.2.9 Rent

Finally, Smith turns his attention to the last component of value added, *rent* on land and other scarce resources.

Smith views rent as a monopoly price. The owner of particularly fertile land, or a river that can generate hydropower, or an oil well or

iron mine, can exclude producers from making use of the productive power of her assets. As a result she is in a position to *bargain* for a share of the profits in production, which takes the form of rent. The basis of rent, then, for Smith, is *monopoly*. The landowner can command a rent insofar as there are not other equally good alternatives available to potential producers.

This theory (which is the basis of Ricardo's, and later analyses of rent) implies that rent is an *effect* of the price of the commodity produced on the rented land. If the price of corn rises, so will the rents to landowners whose land is particularly well-suited to producing corn. If the price of corn falls, so will the rents on corn-producing land, because potential producers will not anticipate as large excess profits from producing on the landowner's land.

The further implication of Smith's analysis of rent is that there is no "natural" level of rent that can help to explain the natural price of commodities, because rent itself is determined by price, not the other way around.

2.2.10 The Theory of Value Revisited

Smith's organization of Book I around the idea of natural price and the decomposition of value-added into wages, profits and rents is a brilliant pedagogical device. It gives us a coherent picture of the whole economy in the microcosm of the value-added of the individual commodity, and leads to an easily grasped survey of the theory of value and distribution.

But *logically* Smith's discussion is incomplete as an account of the adding-up theory of natural price. In the first place, he does not deliver the theories of natural wages and the natural level of the profit rate that are required to make the adding-up theory complete. Instead, he offers an insightful account of the way in which competition among workers and capitalists will tend to equalize wages and profit rates (other factors being equal) and lead to the emergence of *average* wage levels and profit rates in the economy against which sectoral differences will be tested. But he is unable to specify exactly what will determine the level of these economy-wide averages.

The problem with the adding-up theory of value becomes particularly acute in the case of rent, which Smith analyzes, quite convincingly, as a residual *determined by the level of prices*. But if this account of rent is correct, as most people have judged it to be over the years, then the adding-up theory, which tries to explain the level of prices by the natural level of rents, is unacceptable because it depends on *circular reasoning*. In order to know the level of prices, according to the theory, we have

to know the natural level of rents; but the theory of rent tells us that it is the level of prices that determines the level of rent, so we are left without a firm determination of either rents or prices.

As Ricardo argues, the labor theory of value is not subject to this criticism of circularity. The labor theory of value gives an independent determination of the whole average price of commodities, the labor time required to produce them, which depends on the technology and state of development of the economy. Only if the whole is determined, Ricardo argues, is it possible to reason rigorously about its division into the parts of wages, profit and rents.

Chapter 3

Smith, Part II: Accumulation, Laissez-faire, and Money

After his discussion of the theory of value and distribution, Smith turns in Book II of *The Wealth of Nations* to a direct consideration of the sources of private and national wealth. The central concept here is *accumulation*, the process by which a part of the value newly produced in each year is reinvested to increase the stock of assets.

3.1 Accumulation: Productive and Unproductive Labor

3.1.1 Measuring stock: the private and national balance sheets

The first step to understanding the accumulation of assets is to measure them in a conceptually coherent framework. Smith's treatment of capital assets (which he calls *stock* is quite close to the modern conception of the asset side of the *balance sheet*. One strikingly foresighted aspect of Smith's discussion is his proposal to use the same balance sheet concepts to measure the wealth of private individuals and of the society (or nation) as a whole.

Smith divides the assets of private households (which would include firms, since in his day most firms were individual proprietorships) into

three categories: a *consumption fund* consisting of the stocks of goods held for consumption, including inventories of foodstuffs, furniture, houses, private transportation vehicles, and so on; a *circulating capital fund*, which the firm uses to buy inputs to production that are rapidly consumed, such as raw cotton for a spinning factory, or nails and lumber for a builder; and a *fixed capital fund* consisting of long-lived assets such as improvements to land, productive buildings, and equipment which lasts through many cycles of production.

The circulating capital fund at any one moment consists partly of money and partly of inventories of goods, because as the items in inventory are used up in production and the output sold their value returns to the form of money, and usually remains in the form of money for some time before the inventory is replenished by new purchases. Both the money and the goods circulate from the point of view of the individual firm, since it is constantly turning money into goods and goods into money in the process of doing business.

Smith uses the same division to conceptualize the assets of society as a whole. He asks us to imagine a *social consumption fund*, consisting of all the houses, private vehicles, furniture, appliances, and inventories of food and other perishables held by all the households in the country. This fund provides for the consumption needs of the population, and has to be replenished as it is used up. The *social circulating capital* is the aggregated stocks of inventories of raw materials, partly finished goods, and finished goods awaiting sale held by all the productive enterprises of the society. The *social fixed capital* is the aggregated stock of machines, buildings, improvements to land like dams, and roads, and the acquired useful abilities of the population, which modern economists call *human capital*.

There is some doubt as to whether money, which forms part of the circulating capital of the household and firm, should be viewed as circulating or fixed capital at the level of the society as a whole. The reason is that the stock of money, though it circulates among households and firms, mostly stays put within the nation as a whole, and depreciates relatively slowly. Thus the stock of money (gold coins) appears from a social point of view to be more like an element of fixed capital.

3.1.2 Accumulation

Smith's vision of accumulation starts from the idea that the consumption fund of the society serves primarily to employ labor. The larger is the consumption fund of society, the more labor it can employ, and therefore the more it can produce.

In Smith's way of thinking, the central question of accumulation has to do with how labor is employed. He distinguishes between *productive labor*, that is, workers who produce a vendible, tangible product that can be added to the stock of the country, and *unproductive labor*, which consumes part of the consumption fund but produces no tangible output to add to stock as a result. For example, the same owner of capital may pay wages to workers in a factory, who spin raw cotton into thread, and to servants on his estate, who keep up the house, groom the horses, and stand behind the guests' chairs at dinner. The factory workers are productive labor in Smith's view, because they labor to add to the stock of cotton thread, which is part of the total assets of society. These total assets grow as a result of their labor. The household servants are unproductive labor in Smith's framework, not because they do not work, but because their work produces nothing to add to the stock of society's assets.

Smith puts this in another, slightly different way, by pointing out that the owner of capital increases his capital by employing factory workers, since he recovers their wages and even makes a profit on the sale of their output, but decreases his capital by employing household servants, whose wages do not return to him in the form of money.

Looking at the matter from a social point of view, Smith argues that many high-status occupations are in fact unproductive labor. He says that the King and army represent unproductive labor from the social point of view, since their efforts, however desirable and even necessary they may be from a social point of view, represent a net drain on the stocks of society, since the King and his soldiers do not produce a vendible, tangible product that can add to the social stock. Lawyers and judges also fall into the unproductive category (as do opera singers and doctors) for the same reason.

Discussion Questions:

Why does Smith classify the providers of services, such as waiters and performers, in the unproductive labor category. The owner of a restaurant or the producer of a play can make a profit. What impact do these labors have on the social stocks of assets?

Should college professors be classified as productive or unproductive labor?

What is the relation between the productive/unproductive labor distinction and the gender division of labor? Is there a tendency for women's work to be classified as unproductive, even if it is seen as useful and necessary?

Modern neoclassical economists reject the productive/unproductive labor distinction completely, arguing that if labor commands a price on the market it must be producing something of use to someone, and is therefore productive. Is there any important economic difference between labor expended on steel-making, primary school education, stockbroking, advertising, settling legal disputes, and providing gambling services?

An increasing proportion of the labor of industrial capitalist economies is allocated to the production of services as these economies develop. What impact might this have on the tendency for average labor productivity averaged over all the labor employed in these economies to grow more slowly as they develop?

How does the accumulation of capital occur, according to Smith?

What factors limit or encourage capital accumulation according to Smith?

From Smith's point of view, what is the distinction between productive and unproductive labor? Give examples of each. Is college teaching productive according to his definitions? Housework? Childrearing? Practising law?

What are the relations between the accumulation of capital and the division of labor?

3.1.3 Private and public benefits of accumulation

With an eye to the substantial fortunes many of his students looked to inherit, and in the grand Scotch tradition of parsimony, Smith praises saving and accumulation at the expense of consumption, and recommends the employment of productive rather than unproductive labor. Not content with holding out the joys of increasing wealth for the accumulator, Smith goes so far as to characterize savers as public benefactors.

There is no doubt that those who accumulate wealth make themselves better off in material terms (without getting into the difficult philosophical questions of the relation between wealth and happiness). But it is not so clear why Smith thinks that private accumulation has benefits to the public at large. You might think that the capitalist, by accumulating wealth, does public good by providing more jobs for workers; but Smith believes in Say's Law, so that he does not envision a chronic underemployment of labor, and he believes over long periods that population adjusts to the demand for labor. Under these assumptions it is hard

to see how the accumulation of private wealth does anything more than increase the number of workers living at the same standard of living.

If Smith believes that a large population is a good thing in itself, for example, because it is a source of military power to the sovereign (as it was in the eighteenth century), then that would explain why he thinks accumulation of private wealth is a public advantage. But modern individualistic neoclassical welfare economics argues vigorously that there can be no welfare of the society as a whole that is not the welfare of some individual.

Smith may also have in the back of his mind the issue of the division of labor and the extent of the market, though he is not very explicit about this. If there are large unexploited increasing returns to scale to production, then the increase in population and production from private accumulation will have the side effect of increasing the productivity of labor and potentially raising the whole society's standard of living. In this perspective the private saver is a public benefactor because society as a whole always saves too little to take advantage of the increasing returns to scale that are possible. In modern economics jargon, saving has a *positive externality* in this case, because the increase in the nation's capital raises everyone's productivity and wealth above and beyond the levels anticipated when individuals make a decision to save.

Discussion Questions:

The United States in recent years has had a very low and declining rate of saving. Analyze the causes and effects of this low rate of saving using Smith's theory of accumulation.

Since 1975 the rate of labor productivity increase in the United States has been only half the level it achieved in the 1945-1970 period. What possible explanations of this fact does Smith's theory of accumulation provide? What impact might the division between productive and unproductive labor have?

3.2 The Invisible Hand and the State

3.2.1 The National Balance Sheet and Economic Policy

Smith approaches the problem of economic policy through a consideration of the national balance sheet.

In outline, the national balance sheet looks like this:

National Balance Sheet	
Assets	Liabilities
Gold	Debts owed to other nations
Consumption Fund	
Circulating Capital	
Fixed Capital	National Net Worth

The *mercantilist* writers of the late seventeenth and early eighteenth century tended to focus entirely on the quantity of gold in the country, and shaped their policy recommendations in order to maximize the amount of gold. For example, the mercantilists favored restrictions on imports, to prevent gold leaving the country, and subsidies to exports, since exports brought gold into the country.

Smith criticizes the mercantilists on the ground that the real measure of national wealth is the national net worth, not just the gold stock. In focusing their attention purely on the gold stock the mercantilists make two serious errors, according to Smith.

First, mercantilists support measures that increase the gold stock but diminish the national net worth. For example, policies that induce citizens to sell assets to foreigners for gold below their market prices might increase the gold stock, but decrease the national net worth because the real value of the gold gained is smaller than the value of the assets given up. But this is precisely what an export subsidy scheme amounts to, in Smith's view: the subsidy induces citizens to sell assets (commodities produced within the country) to foreigners at a loss, that is, effectively at prices lower than the world market price. Similarly, a tariff on imports prevents citizens from exchanging gold for commodities that might be worth more than the gold given up.

Second, Smith argues that the mercantilists are misguided in their claim that the economic strength of a nation is determined by its stock of gold, rather than by its national net worth. Smith argues that what matters to a country is the real development of its productive resources, people, land and capital, rather than its cash money holdings. A country with a large and well-developed productive base will in the end have more resources to pursue its policy goals through diplomatic and military means. Smith, in fact, recommends that the nation is best off with the smallest gold stock it can manage, since holding gold diverts capital from productive enterprises than turn a profit.

Smith's discussion of the national economic interest is in many ways the most influential aspect of his book, and continues to be the basis of the modern consensus of political economy in Anglo-Saxon countries at least. Nineteenth century Britain became almost a laboratory model

of Smith's political economic conception, as it developed the first and at the time the largest modern industrial economy on the basis of free trade and the policy of holding an extremely small reserve of gold.

The issues Smith raises in his discussion of the national balance sheet remain timely and relevant. The fallacies with which he charges the mercantilists continually crop up in political debate in one form or another. For example, during the last twenty years politicians of both parties in the United States have tended to focus their attention disproportionately on the Federal deficit and stock of debt, neglecting the impact of their policies on the Federal net worth (and its impact on the national net worth). This has led to policies that are highly questionable economically, such as allowing the cutting of trees in Federal forests at below market prices. As the trees are turned into money, the Federal deficit appears lower, but the Federal net worth may decline because the loss of the natural resource assets is larger than the gain to the deficit.

3.2.2 Smith's Case for Laissez-Faire

Smith generalizes these insights into a powerful case for a particular philosophy of economic policy, which is called *laissez-faire*, the French idiom for leaving things alone to take care of themselves. It is important to see exactly what Smith means by laissez-faire policy, and the distinct limits he envisions for it.

In keeping with his analysis of the national balance sheet and the accumulation process, Smith argues that national income is maximized when each unit of national capital seeks out the highest profit rate at world market prices. This will be the result of the self-interested decisions of capitalists as long as they are free to invest their capital as they see fit and the prices they face are world market prices. If part of the national capital is invested in a sector with a lower than average profit rate, then the whole profit income of the nation, and hence its whole national income, will be lower than if the capital were shifted to a higher profit rate sector. As we have seen, Smith thinks of capitalists' ceaseless pursuit of higher profit rates as the mechanism through which profit rates tend to be equalized. In an ideal sense, the maximum profit rate for the national capital will result only when all the components of national capital are invested at the same profit rate, which is also the highest available.

When the government attempts to intervene to encourage or discourage the investment of capital in certain sectors, one of two things happens, according to Smith. It may be that the government policy is ineffective, and doesn't actually change the allocation of capital, in

which case the policy is harmless but also useless. On the other hand, if the policy works, and actually changes the allocation of capital, from Smith's point of view it must be lowering net national income at world prices. The reason is that national income at world prices would be maximized by allowing individual capitalists to seek the highest profit rate they can find: if the government induces them to do anything different, it must result in lower over all profits and national income.

For example, if the government decides to protect capital and jobs in an industry threatened by foreign competition by putting tariffs or quotas on imports (as the U.S. government does in several sectors such as clothing) the effect is to induce U.S. capitalists to invest more of their capital in the protected industries than they would without the tariff. But the profit rate in these industries at world market prices is lower than the average profit rate, so that as a result national income as a whole must decline. The tariff makes the profit rate in the protected industry appear to be equal to the average, but only by diverting funds from other sectors or consumers of the protected commodity, and the amount of income diverted must, according to Smith's reasoning, exceed the subsidy to the protected capital, so that overall the nation experiences a loss. Thus Smith concludes that the national interest, in the form of the national balance sheet, is best served by getting rid of tariffs, subsidies, and other forms of intervention in private market allocation of capital.

This argument rests on several assumptions that Smith does not make completely explicit. First, Smith is implicitly assuming that the country cannot influence the world market prices of the commodities it produces. In modern economic jargon he is thinking of a *small country in a large world economy*. If the country in question has so large a share of the world market that its policies can influence world prices, then intervention might be able to shift some of the *world* surplus to the country, thus increasing its national income. Smith's laissez-faire reasoning would still apply at the level of the whole world economy, so that the income gained by one nation through its protective policies would be more than offset by the losses to other nations.

Second, as we have emphasized, Smith assumes that Say's Law is operating, so that there will be no long-term unemployment of labor or capital. If a nation reduces tariffs protecting some sector, that sector will generally shrink in size, disemploying some labor and capital. Say's Law reasoning assumes that this unemployed labor and capital will find new employment in other sectors, thus allowing the nation to maximize its overall profit rate and national income.

3.2.3 Smith's Qualifications of Laissez-Faire

Smith makes several specific qualifications of his laissez-faire policy recommendations.

First, he argues that defense or national-security considerations may require a nation to protect and subsidize a sector that otherwise would not be profitable. The example he gives is the British Navigation Laws of the eighteenth century, a complex system of restrictions on trade aimed at securing strong merchant shipping and ship-building sectors for Britain. Since Britain depended on its naval strength to defend itself against continental European powers, a pool of experienced seamen and ongoing ship-building facilities were an important national security asset. Smith endorses these navigation measures on this ground, despite his recognition that under laissez-faire Britain would not have a comparative advantage in shipping and ship-building, and that these sectors would become much smaller.

This general concern continues to arise in contemporary political economic debates. The U.S. has subsidized its merchant marine for many years, for example, and the U.S. government tries to intervene in computer and nuclear power markets on the basis of national security concerns.

Smith also endorses tariffs to even the tax burden on commodities when there is a tax on domestic producers. This is consistent with his goal of equalizing the real profit rate across sectors of investment.

A third qualification to pure laissez-faire is the use of tariffs as bargaining chips or retaliatory measures in international negotiations. Here the idea is that it might be worth paying a short-term economic price in national income in order to induce another country to adopt better policies. The U.S. uses this kind of economic policy quite frequently, for example, in our trade embargo on Cuba, trade restrictions with China, and linkage of trade privileges with other countries' domestic policies on human rights.

In line with his emphasis on increasing returns to scale through the increasing division of labor, Smith sees a role for tariffs in fostering the growth of small firms in important sectors, the *infant industry* exception to laissez-faire. The idea here is that the nation may have a *potential* comparative advantage in a sector if only it can reach a certain scale of production. Without protection, however, small firms venturing into the sector will be destroyed by existing foreign competition. A tariff in such a case may permit the growth of a large enough domestic industry to compete internationally. The contemporary Asian "tigers," including Korea, Taiwan, and Singapore have successfully encouraged infant

industries through tariff restrictions, export subsidies, and low-interest loans.

Finally, Smith acknowledges that there may be significant short-term adjustment costs to implementing laissez-faire policies, due to the slowness with which capital and labor disemployed in sectors vulnerable to foreign competition will be reabsorbed in other parts of the economy. To cope with these short-term adjustment costs, he accepts the need for a gradual movement toward laissez-faire through the elimination of tariffs and subsidies.

3.2.4 The State and the Market

While Smith has a lively and vivid appreciation of the spontaneous growth potential of the private economy through accumulation and the division of labor, he also puts forward a sophisticated and complex view of the relation between the market and the State. While he recommends against the State intervening in particular markets for purely economic ends, he sees a the need for the State to create the boundary conditions within which markets and enterprise can flourish. The State, for example, needs to guarantee property and enforce contracts in order to create the legal substructure within which trade and production can grow. But inevitably the definition of property rights and contract responsibilities involves the State in concrete issues of resource allocation and investment planning. The reason is that in defining the limits of property rights (through environmental regulations, zoning, regulation of monopoly, and the like) the State indirectly influences the directions in which the private division of labor will develop.

There are many modern instances of these political economic issues. We are in the midst of a major reform of property rights in the electromagnetic spectrum (radio and television broadcasting frequencies). Many countries, including the U.S., are moving to create transferrable property rights in parts of the spectrum, and as a result are creating new markets and new economic possibilities, as well as new sources of wealth. But these reforms also inevitably have a major impact on the development of the broadcasting, telephone, and information transmission industries. A similar development of property rights in various kind of environmental pollutants (sulfur emissions, greenhouse gas emissions) is in a more nascent stage on the international scene. The chronic debates and problems we have over health and automobile insurance are also closely related to the establishment of property rights and responsibilities.

Thus Smith's vision of laissez-faire is not a one-sided encouragement of private enterprise and the market to the neglect of political and gov-

ernmental institutions, but a balanced understanding of the interplay between market and State institutions in allowing the virtuous circle of economic development to proceed.

Discussion Questions:

What is Smith's conception of private self-interest? What might be some other conceptions? Does Smith's conception depend on the society he lived in?

What is Smith's conception of the general or public interest? How is this conception conditioned by Smith's society?

Is Smith's argument that the pursuit of self-interest serves the general interest a tautology (i.e., simply the consequence of his definitions of terms)? In what cases do you think it has real content?

What limits does Smith see to the workability of a laissez-faire policy? What assumptions does his support of such a policy depend on?

What are the relations between laissez-faire policy and the accumulation of capital? To what extent do the positive benefits of laissez-faire depend on capital accumulation?

How would you sum up Smith's view of a good society and a successful development of human character?

How does Smith use history in his thinking?

3.3 Smith's Theory of Money and Banking

Smith has characteristic views about money and banking, which have important ramifications in relation to later theories. He considers a *gold standard* system of money, in which the government has established a legal relationship between the national money (dollars or pounds or francs) and a quantity of gold. As we have seen, in this type of system the money prices of commodities are regulated over the long run by the relative production costs of gold and commodities. If the gold prices of commodities fall a lot, gold becomes more valuable in terms of commodities, gold production becomes more profitable, and resources will shift toward gold, which will tend to raise the gold prices of the other commodities. Similarly, if gold prices of commodities rise sharply, gold loses value in relation to other commodities, gold production becomes unprofitable, and the supply of new gold will decline. The price level (or inflation) in this type of system is influenced mainly by the gradual

change in relative production costs of gold and other commodities as technology changes.

The quantity of gold required to circulate the commodities in a country depends on the *velocity of money*, that is, how many transactions each gold coin can participate in over a year. The velocity of money can be measured as the ratio of the value of transactions in a year to the stock of gold money. On the average, the velocity of money in transactions depends on the payment customs of a country, and the degree of development of its banking system.

Smith puts considerable weight on the fact that the stock of gold required to circulate commodities is a drain on the profit-making capital of the country. If the country could increase the velocity of money, it could divert some of the capital tied up in holding gold into profit-making investments, and thus increase its wealth. One way the velocity of money can be increased is through the wider use of banks, which centralize the gold reserves of many depositors. Since the demands of different depositors for gold are not exactly correlated, the bank can hold a lower gold reserve than the depositors would need if each held their own, and the velocity of money increases. Smith, like many Scots, is an enthusiastic supporter of banking, banknotes, and *cash accounts*, an early form of credit card that allowed depositors to hold lower average balances in managing their affairs. (The English say that “the Scotch hate gold.”)

Smith extends his laissez-faire recommendations to the banking system, proposing that banks should be allowed to issue as much deposits or banknotes as they wish, as long as they are in a position to redeem deposits and notes with gold on demand. In his view, banking and credit share the self-regulating character of the market in general. If banks issue more banknotes than the public wants to hold, the public will redeem the notes for gold, and thus regulate the total note issue to the appropriate size.

Smith was aware of certain pathologies that unregulated banking systems could support. These are all, in one way or another, connected with an unstable multiplication of credit. In Smith’s time much trade was financed on *bills of exchange*, a receipt for goods in transit signed by the shipper, which other merchants and banks would accept as collateral for cash loans. In boom periods, some traders would issue bills beyond their actual inventories of goods in transit, which would allow an unstable growth of loans and credit in the economy as a whole. Such pyramids of credit are vulnerable to sudden crises, in which the failure of some of the issuers of bills to pay triggers off a chain reaction of other traders’ failures. The credit system collapses temporarily, ruining many merchants, and often interrupting trade and production, creating

unemployment.

Smith argues that this kind of *overtrading* in bills of exchange can be avoided if banks strictly follow a policy of lending only on *real bills*, that is, bills of exchange that are backed by actual goods sold and in transit to their purchasers. This *real bills doctrine* has played a key role in banking policy debates ever since.

Smith's monetary theory is interesting in part because he is clearly not a *quantity theorist* of money in the modern sense. The *quantity of money theory of prices* argues that it is the quantity of money, rather than the cost of production of gold, that determines the average price of commodities. The quantity theory is the dominant consensus theory in modern policy circles, and underlies the *monetarist* policies of controlling money supply growth that many central banks have adopted. Smith argues for a flexible, demand-determined money supply, on the ground that, in a gold-standard system, the price level will be anchored by the production cost of gold relative to other commodities.

Smith's monetary views are also different from Keynes'. While Keynes argues that the quantity of money determines the interest rate (rather than the price level directly as the quantity theory predicts), Smith thinks the interest rate is largely determined by the rate of profit, not by the amount of money or credit created.

While both the Keynesian and quantity theories of money recommend interventionist monetary policies in which a central bank regulates the supply of money, either to influence interest rates, or to stabilize the price level, Smith's monetary theory fits consistently with a *laissez-faire* policy of banking.

Chapter 4

Thomas Malthus and the Theory of Population

Thomas Malthus was an English clergyman of the late eighteenth and early nineteenth centuries, who had a strong interest in the life of the English poor and working class, and an equally strong interest in political economy and philosophy. His pamphlet later revised as a book, *An Essay on the Principle of Population*, is widely regarded as the starting-point of *demography*, the systematic scientific study of population growth and its dynamics. Malthus' ideas have had immense political influence, and continue to be expressed in contemporary debates over population growth and pressures, population control measures, and the management of the finite resources of the earth.

Malthus corresponded and debated with Ricardo on political economic issues. Ricardo, as we shall see, adopted important parts of Malthus' theories in constructing his own system, but strongly criticized Malthus for misunderstanding the principle of Say's Law. Marx also took Malthus' work as a foil, vigorously criticizing Malthus' claim to have discovered universal laws of population, and arguing that Malthus' ideas are a classic expression of the ideological prejudices of the British landowning/capitalist ruling class coalition.

4.1 The Context of Malthus' *Essay*

By the late eighteenth century it had become apparent, especially in England, that the systematic application of engineering and science to productive technology would revolutionize the productivity of labor,

and make possible previously undreamed-of levels of wealth creation. The implications of this development became the subject of an ongoing philosophical debate, which prefigures the politics of the nineteenth and twentieth centuries. The drama of the French Revolution, with its overturning of the centuries-old institutions of the *ancien régime* fuelled this debate and underlined the urgency of the issues at stake.

Some optimists, among whom William Godwin, the husband of the early feminist Mary Wollstonecraft, and the father of Mary Shelley, the creator of Frankenstein's Monster, was prominent, argued that the new age dawning would allow human beings to "perfect" society by eliminating the scourges of poverty, disease, war, and social conflict. The perfectibilist idea was that if the enormous surplus production inherent in the technological revolution were turned to social ends and distributed equally, it would provide the resources to bring everyone to a modest, comfortable standard of living, and to provide the social infrastructure of sanitation, housing, and transportation to eliminate endemic disease and starvation. A key point in the perfectibilist position was the assertion that humankind was in control of its own destiny: people could decide what to do with the newly created social powers of production to solve human problems. We can see in this position the seeds of the socialist movements of the nineteenth and twentieth centuries, which were based on the attempt to realize this dream.

The perfectibilist position naturally met a strong ideological conservative opposition. The conservatives argued on several grounds that the hopes of the perfectibilists were illusory and their pursuit dangerous to the well-being of the society. Some conservatives found the perfectibilist position objectionable on theological grounds, because it claimed too much responsibility and power for human beings, at the expense of God. Other conservatives saw the perfectibilist emphasis on social control of the new technologies and their surplus product a threat to class interests and to political stability of the nation, which rested on class divisions. Conservatives argued that the ills of humanity the perfectibilists aspired to eliminate by social action were in fact the consequence of *human nature*, which could not be changed by technology or increased productivity of labor. In the eyes of these conservative critics, the perfectibilist proposals were fraudulent false promises that could only serve the purpose of serving the perfectibilists' ambition to power.

These issues have dominated twentieth-century history and political economy.

Malthus wrote his *Essay* as a critique of the perfectibilist position. He claimed to establish a *mathematical* proof of the *impossibility* of the realization of the perfectibilist program. Malthus was thus one of the first writers to introduce mathematical arguments and models into social

science. It is worth noting the structure of Malthus' rhetoric: rather than appealing to theological or philosophical arguments directed at proving the *undesirability* or *imprudence* of the perfectibilist goals, he appeals to mathematical arguments against the *feasibility* of their ideas.

4.2 Malthus' Postulates and Their Implications

Malthus' demonstration of the impossibility of realizing Godwin's proposals takes the form of a logical argument resting on two *postulates* (somewhat analogous to the postulates of geometry), one concerning the dynamics of human populations, and the other concerning the dynamics of food production.

4.2.1 Human Populations Tend to Grow Geometrically

Malthus' first postulate is that in the absence of any *checks*, that is, countervailing forces, human population tends, on account of the "passion between the sexes", to grow geometrically (or *exponentially*), that is, according to the mathematical pattern 1, 2, 4, 8, Each woman tends to bear more than the two children that are required to replace herself and her mate, so that each generation will exceed the last in total size. The power of procreation knows no natural limits, according to this postulate.

4.2.2 Agricultural Output Tends to Grow Arithmetically

Can this geometrically growing population feed itself? Malthus argues that it cannot, because the growth of food production, depending in his view on the cultivation of more land, or the more intensive cultivation of existing land, cannot sustain more than an *arithmetic* pattern, 1, 2, 3, 4, ..., based on addition rather than multiplication. In the first few stages of population growth, the arithmetic increase in food supplies can keep pace with the growth in population, especially if the natural rate of population growth is low. But geometric growth, no matter how low its rate, always overtakes and dwarfs any arithmetic series. In Malthus' examples the ratios are 1:1, 2:2, 4:3, 8:4, 16:5, . . . , so that population always overwhelms the food supply if the two postulates hold.

4.2.3 Checks to Population

The postulates themselves thus lead to a *contradiction* in that they predict that eventually the population will outgrow its food supply by whatever factor you choose if you wait long enough. Since people cannot live on air, something, argues Malthus, must intervene to bring population into balance with the food supply. Malthus calls these equilibrating forces *checks*. They are factors that tend to reduce population growth, either by lowering the birth rate or raising the death rate, so that it marches in step with his postulated law of arithmetic increase of food. Malthus classifies these factors (not always completely consistently, especially in the later revision of his book) into the categories of *preventive checks* and *positive checks*.

Preventive Checks

Preventive checks are practices that lower the birth rate and thus reduce the underlying tendency of population to grow exponentially. If women delay marriage, so that the average age at marriage rises, they spend a smaller part of their fertile lifetimes at risk of conception, so that fertility rates fall. If a higher proportion of the women in a society choose not to marry and have children at all, the fertility rate and population growth rate will fall. Finally, if married couples abstain from sex, they will conceive fewer children and lower the fertility rate.

Malthus clearly appreciates the potential of these preventive checks to control fertility, but does not believe that in practice they will be very effective.

Another possibility is the use of contraceptive devices or drugs. As far as we know one or another form of contraception has been known and employed in all human societies. (These methods were of varying effectiveness, of course, but so are contemporary methods.) Malthus is aware of this possibility, but follows the Church of England of his time in adopting the position that sexual intercourse with contraception is against “natural law,” and therefore a “vice.” Malthus views the wider use of contraceptive methods as a moral evil, and hence not an acceptable solution to the problem of controlling fertility.

Positive Checks

If preventive checks do not reduce the fertility rate enough to bring population growth in line with the posited arithmetic growth of food output, Malthus argues that positive checks, starvation and disease, will raise

the mortality rate to bring about the inevitable equilibrium. As population outstrips the food supply, some part of the society will become malnourished, and die either directly from starvation or indirectly from diseases that are the result of their weakened condition.

Malthus' own experience with the British poor and working class indicated that the most sensitive components of the mortality rate were the death rates of the very young and the very old. Infants and the elderly are those most vulnerable in periods of want. As food becomes more expensive, mothers' nutrition declines, and as a result children are born underweight and vulnerable to infectious disease. Poorly nourished mothers might themselves survive, but their lactation is poor, and their babies often did not. The literature and biography of the early nineteenth century underline how pervasive infant mortality was among all classes.

4.2.4 The Majority of Humanity Must Always Live in Misery

Malthus thus draws his conclusion (which led some of his contemporaries to call political economy the "dismal science") that the great majority of humanity must, of mathematical necessity live in great enough misery and poverty to stabilize the total population through a high mortality rate, especially among infants. The only theoretical loophole is the possibility that people might control their sexual passion so as to lower fertility rates. Malthus thinks this would be a good thing, but does not seem to have high expectations that it will come to pass.

In Malthus' eyes, these considerations show the vanity and emptiness of the perfectibilist project to harness technology to ameliorate the human condition. Certainly technology might raise output per worker in industry and urban wages. But the higher standard of living supported by high wages will lead to an explosion of population, largely due to a decline in the rate of infant mortality. The resulting population growth will outstrip the growth of the food supply, and the real wage will fall as food prices rise, forcing the urban working class back to the margins of subsistence, where vice, neglect and want once again will raise mortality, especially infant mortality, to restore equilibrium.

Malthus invokes the whole prestige of mathematics in supporting this gloomy view of the human fate. Malthus' challenges Godwin and the other perfectibilists to show where the logic of his argument has gone wrong.

Charles Darwin was struck by the relevance of Malthus' arguments to the situation of species competing for survival. Malthus' gloomy vision

of human society was one of the important bases of Darwin’s vision of natural selection as the basis of biological evolution.

Mathematical arguments, if they are correctly reasoned, can do no more than link a set of assumptions to a set of conclusions. The conclusions may follow logically from the assumptions, but they will apply to reality only to the extent that the assumptions themselves reflect the relevant aspects of the real world. Computer programmers refer to the “garbage-in, garbage-out” phenomenon: computers won’t make arithmetic mistakes, but they will produce nonsensical output if their program or input data are defective.

4.2.5 A Malthusian Model

Malthus’ analysis of population is an important early instance of *equilibrium reasoning*, and becomes a key element in Ricardo’s influential model of capitalist development. Malthus did not put his argument in terms of graphs (or even, despite its mathematical character, in terms of equations), but it is enlightening for us to do this exercise.

In Fig. 1, the horizontal axis measures some index of the standard of living. For Malthus and Ricardo, this was usually the “real wage,” basically, the amount of food a worker could put on the table. The vertical axis measures both the fertility rate and the mortality rate (the number of births and deaths per thousand living people). Malthus’ proposed laws of population and food supply can be summarized on this graph by a *fertility schedule* showing the fertility rate associated with each level of the standard of living, and a *mortality schedule* showing the mortality rate associated with each level of the standard of living.

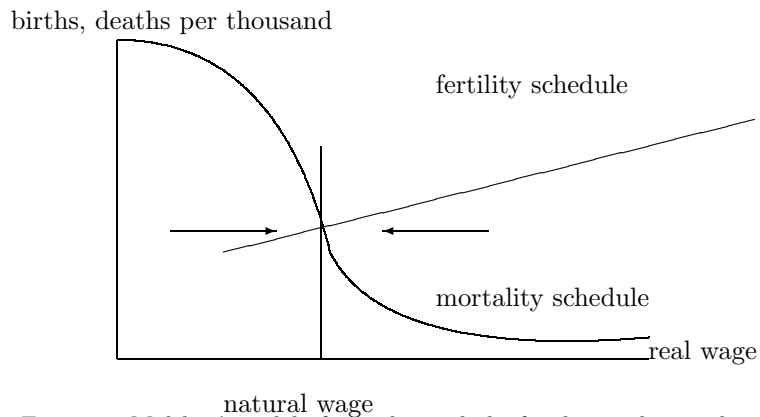


Figure 1. Malthus’ model of population links fertility and mortality rates on

the vertical axis to the standard of living, measured by the real wage on the horizontal axis. The *fertility schedule*, shows fertility rising slowly with the standard of living. The *mortality schedule* shows mortality, particularly infant mortality, dropping sharply as the real wage rises. The intersection of the two curves establishes the *natural wage rate*, at which the population stabilizes. This equilibrium is *stable*, because a rise in the real wage will set in motion a population increase that will force real wages back down.

The fertility schedule in the graph is shown as sloping gradually upward, to reflect the impact of higher real wages in earlier marriage and better pre-natal maternal nutrition. The mortality schedule starts at a high level, and declines sharply around the equilibrium level of the real wage. This shape is intended to express Malthus' idea that infant mortality becomes very sensitive to the real wage at some low level. This *subsistence real wage* is not determined purely biologically, but in part culturally and socially: it represents the level of the standard of living at which normal reproduction starts to break down in a given society and time.

The point at which the fertility schedule intersects the mortality schedule is an *equilibrium*, where the population will be stationary, with deaths just equalling births. This equilibrium, on Malthus' reasoning, is *stable*, because the increase in population that occurs when the death rate falls below the birth rate will tend to raise food prices and lower the real wage. (Over a longer period, the increased population also increases the supply of labor, which will tend to lower the wage rate.) Symmetrically, the rise in infant mortality that occurs as the real wage falls below the equilibrium level will relieve the pressure on food supplies, lower food prices, and allow the real wage to rise.

Discussion Questions:

How would you represent an improvement in medical treatment that lowered infant mortality through the schedules in the graph? Which schedule would shift? In which direction? What would be the impact on the natural level of the wage, other factors remaining unchanged?

How would you represent a change in attitudes that led to women marrying later through the schedules on the graph? Which schedule would shift? In which direction? What would be the impact on the natural level of the wage, other factors remaining unchanged?

4.2.6 Malthus' Critique of the Poor Laws

As in contemporary industrial capitalist societies, there was a fierce debate in Britain during the early years of the Industrial Revolution over

welfare policy, which the British called the *Poor Laws*. In Malthus' time the Poor Laws required each parish (a unit of local government) to support its own paupers at a minimum income level, through the provision of "workhouses" or "poorhouses," where the poor lived at parish expense. The inmates of workhouses had to labor at low-skilled jobs in order to repay some of the expense of their upkeep. (Charles Dickens' portrait of the misery and abuse to be found in workhouses and poorhouses contributed to the later revulsion against this system in favor of direct money payments to poor families.) This system of relief was financed by local property taxes. Since each parish was responsible only for "its own" poor, many parishes tried to prevent poor families from moving in, to avoid their becoming a "charge" on the tax bill. As a result it was very difficult for poor families to migrate within Britain to take advantage of employment opportunities.

The Poor Law system was expensive and failed to reduce absolute rates of poverty and dependence. There were many proposals for the reform of the system.

Malthus argues that the Poor Laws encourage (or perhaps even create) poverty. His argument grows out of his general analysis of population. The Poor Laws, in his view, allow people to marry and have children without being able to provide for them. Since in his view the supply of food is relatively inelastic, this larger population must raise food prices and lower the wage of employed workers, leading to more poverty. In terms of the graphical model, Malthus sees the Poor Laws as shifting the fertility schedule upward, leading to a lower equilibrium natural wage, and higher infant mortality, an index of greater social suffering.

Malthus' approach to the political economy of welfare has vigorous advocates in contemporary advanced industrial capitalist societies. During the debates on Federal welfare policy in recent years, critics of the policy have used arguments very similar to Malthus' to claim that welfare actually creates poverty, or at least makes the problem worse. Malthus, like these critics, is less explicit about what he thinks will happen to the poor if the Poor Law system of support disappears.

4.3 The Logic of Malthusianism

Like most highly influential social/political arguments, Malthus' is part logic and empirical science, and part ideological projection of particular moral values. Malthus is unusually explicit about at least some of the values that inform his argument, his attitude toward the morality of contraception, for example. His argument also has implications

about social justice and equality, and the causes (or blame) for the suffering caused by poverty. In Malthus' eyes, the structure of property rights and property ownership in society take the form of unchangeable constraints, almost like natural physical laws, and the focus of possible change is directed at the behavior of the poor and working class in the context of these constraints. One may doubt whether Malthus is actually addressing the poor and working class directly at all: perhaps his target is the discomfort that members of the middle and upper classes in Britain felt at the evident polarization of their society. One tendency of his argument is to fix the sources of poverty in the moral attitudes and behavior of the poor, and to discourage direct attempts to alleviate the suffering of poverty on the grounds that they make the whole situation worse through their indirect effects on the equilibrium wage.

On the one hand, Malthus says that human population tends to increase geometrically. But is this consistent with the rest of his analysis, especially his discussion of preventive checks? The preventive checks (which lower the fertility rate for every level of standard of living) raise the equilibrium level of the standard of living, and reduce fertility below the theoretical maximum. Doesn't this imply that every human society has customs and practices that control fertility rates? What then happens to the postulate of inexorable geometric increase in population due to the "passion between the sexes?"

If (as Marx suggests in his criticism of Malthus) we amend Malthus' postulate to say that every society has its own law of population growth, which must correspond to its own productive powers and system of social distribution, what happens to Malthus' critique of the perfectibilists? Perhaps the prosperous utopia envisioned by Godwin and his associates will solve its population problem precisely by solving its production problem, and achieve a stable population at a high standard of living with low fertility and mortality rates.

4.4 Population and Food Since Malthus' Time

These logical considerations are not entirely abstract and theoretical: the history of industrialization and population since Malthus wrote has played out many of these themes and possibilities. In its usual frustrating way this history does not unambiguously settle the debate between Malthus and Godwin on either side. Some of what has happened supports the perfectibilist vision, but experience has not completely dispelled the Malthusian shadow, either.

4.4.1 Population Growth, Economic Growth, and the *Demographic Transition*

As more and more nations and regions of the world have experienced industrialization and urbanization, some fairly clear patterns have begun to emerge that extend and modify Malthus' postulates. The basic scenario is the shift of population from a traditional, low-productivity, low-technology, rural, agricultural mode of production to a modern, high-productivity, high-technology, urban, industrial mode of production. This shift tends to take place more and more rapidly as time goes on. As it occurs, average standards of living rise rapidly as measured by income, education, health, or housing indexes. At the same time, some sectors of the population sink into the terrible misery of rural stagnation or urban congestion and decay.

Demographic statistics confirm over and over again Malthus' stylized mortality schedule. A rise in standards of living, leading to better average sanitation and nutrition, lowers mortality sharply, especially infant mortality, as Malthus predicts. The immediate result is a more or less explosive growth of population, also in line with Malthus' predictions. The growth of the population also permits the Smithian division of labor to increase as the basis of the increase in labor productivity that raises standards of living.

But the history of fertility rates in the course of economic development tells a more complicated story than Malthus, who expected a mild rise in fertility rates with increasing wages. What happens in a country after a country experiencing economic development is that at higher levels of the standard of living fertility begins to fall. Some of the factors behind this phenomenon are fairly well understood and documented in the demographic literature. In traditional agricultural societies, children are seen largely as an economic asset, since their labor contributes to family income from a relatively early age, and parents' main hope of support in their old age is a large number of children. In urban industrial societies, however, children become a more expensive consumption good, reflecting costs of nutrition, health care, and education. The support of parents in old age shifts more to their savings invested in financial assets and to state pensions. Women's economic lives change in ways that make later childbearing and lower total fertility rates more attractive to them. As more women undertake high-productivity economic activity, the opportunity cost to them of pregnancy and childbirth rises. As a result women delay childbearing and choose childbearing patterns that result in fewer births per mother. These effects are called the *demographic transition*.

If we draw the graphs representing Malthus' model on a larger scale, we can see the theoretical significance of the demographic transition, as

in Figure 2.

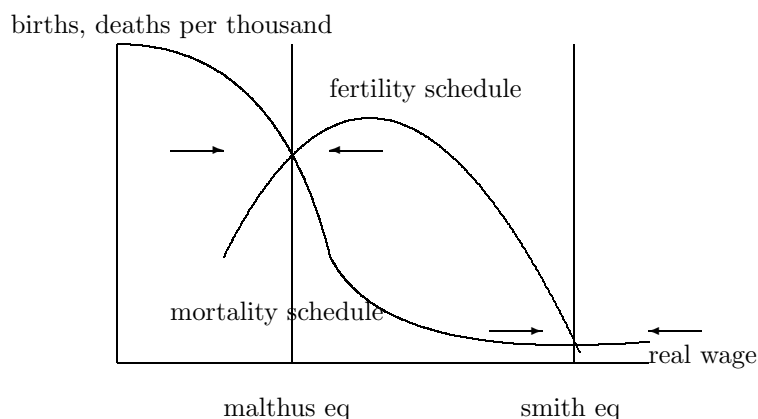


Figure 2. The *demographic transition* experienced by industrializing economies can be seen in an extension of Malthus' model through a fertility schedule that first rises and then falls as the real wage rises. This reveals two equilibria, one at a low real wage with high mortality and fertility rates, the *Malthusian equilibrium*, and the other at a high real wage with low mortality and fertility rates, the *Smithian equilibrium*.

Figure 2 shows the possibility that there might be two equilibria in Malthus' model. The first occurs at a low real wage, with high mortality and fertility rates. This is the equilibrium Malthus described. The force that tends to make the Malthusian equilibrium stable is the tendency for the wage to decline with increasing population. But there could be another equilibrium at a high real wage with a low mortality rate matched by a low fertility rate. Many economically developed countries in the world give signs of achieving this equilibrium.

We might call this the *Smithian equilibrium* because it would be stabilized by forces that tend to *raise* the wage with an increase in population. Smith proposes exactly such a mechanism in his analysis of the division of labor. The larger is the total population, the more extensive the division of labor, and hence the higher is labor productivity. If there is in turn a link between labor productivity and the level of workers' standards of living, which indeed seems to be the case in most countries over a long-run time horizon, then an increase in population will tend to raise the real wage and push the population back toward the Smithian equilibrium.

Malthus' first postulate, that population grows inexorably at a geometric rate, has fared rather badly at the hands of the history in the

two hundred years since he wrote his *Essay*. It appears that population growth, both through fertility and mortality, is highly sensitive to the processes of economic development, and that people have adapted their reproductive behavior to changing economic circumstances in more subtle and sophisticated ways than Malthus anticipated.

4.4.2 Feeding the World

What about Malthus' second postulate, that the food supply can increase only arithmetically, and is thus doomed to fall short of the geometric growth potential of population?

History has not been particularly kind to this postulate over the last two hundred years, either. On the whole food supplies have grown somewhat more rapidly than human population, which is to say that food production has also sustained a geometric rate of increase. At the present time the world's population produces more than enough food to feed itself, though its maldistribution as a result of the imbalances of economic development and political conflict and incompetence regularly leads to horrible regional famines as in East Africa in the late 1980s and in North Korea in the middle 1990s.

This increase in food output is the more remarkable because there has been a considerable rise in the costliness, if not the nutritional quality, of the world's diet, as more and more people eat higher and higher on the food chain.

How has this increase in food production been accomplished? The two most important factors have been the opening of new and more productive agricultural regions, on the one hand, and the application of advanced technology in the form of mechanization, pesticides and fertilizers, and genetic engineering of food crops and animals, on the other. These developments have transformed both labor and, to a lesser extent, land productivity in agriculture. Together they have defeated the forces of diminishing returns that Malthus apparently thought would dominate historical trends in food production.

But the spectre of diminishing returns still haunts humanity. The technological advances that have allowed us to feed ourselves have also brought serious environmental problems and have depleted important resources. There is no guarantee that the future path of food production will continue the trends of the last two hundred years, though many experts in this area are cautiously optimistic that the humanity can continue to feed itself even if the population were to increase fivefold from its current levels. We cannot be sure, however, that some ecological or resource catastrophe might not intervene to frustrate these projections.

4.4.3 Fifteen to Thirty Billion People

Demography continues to be an uncertain and controversial science. At the present time a consensus view does exist, however, concerning the broad outlines of world demographics. There is much controversy about many details, and some serious scholars challenge key elements of this consensus.

The consensus holds that the world as a whole is undergoing the demographic transition observed first in the early industrializing countries. Fertility rates are dropping in newly-industrializing countries, as they did historically. In fact, if anything, fertility rates seem to be falling more rapidly in recently industrializing countries than they did in earlier industrializers. A look at the extended Malthusian model indicates that the predicted equilibrium size of the world population depends very sensitively on the exact shape of the fertility schedule, which is not known with a high degree of accuracy. Estimates of the time at which the world population might reach equilibrium vary from as soon as 2050 to as late as 2150, and estimates of the eventual size of the world population vary from fifteen to thirty billion people. These are enormous uncertainties.

The consensus view on the stabilization of world population due to the demographic transition does not extend to a very detailed vision of the distribution of wealth and income in the stationary population. Distribution, which to a very great degree determines the amount of suffering and minimum welfare of people, depends on even less predictable political and economic factors than fertility and mortality themselves.

Chapter 5

David Ricardo and the Fate of Capitalism

David Ricardo was a successful London stockbroker who took up political economy as a kind of hobby. He was a founder of the Political Economy Club in London, which came to exert a powerful influence on British economic policy through its efforts to educate Parliament in the principles of liberal, free-trade political economy. Ricardo prepared testimony for committees of Parliament on several occasions, especially concerning monetary policy and free trade.

Ricardo's influence on the development of British and world political economy has been immense. His unusual gift for analyzing complex economic interactions through simple and powerful abstractions established the paradigm for later economic reasoning and model-building. Ricardo's abstract logic is subtle and powerful, but he never loses sight of the implications of his abstract analysis for the concrete complexity of the real world.

Ricardo's *liberal political economy* emphasized the laissez-faire aspects of Smith's analysis, and firmly supported free trade. Like Malthus, with whom he carried on a fertile intellectual dialogue on political economy, Ricardo opposed attempts to alleviate poverty through Poor Laws or welfare programs. These policy prescriptions became almost a religion among the British political elite in the nineteenth century. Ricardo's analysis of rent and comparative advantage are the foundation of the contemporary *neoclassical* school of economics, and his discussion of the labor theory of value is the starting point of Karl Marx's critique of political economy and the capitalist system. The last half of the twentieth century has seen the emergence of a small but vigorous *neo-Ricardian*

school of economics dedicated to completing the analytical framework Ricardo created.

5.1 Ricardo's Labor Theory of Value

Ricardo begins his *Principles of Political Economy and Taxation* by saying that he agrees with everything Adam Smith has to say, except Smith's treatment of the theory of value and distribution. Since theories of value and distribution underly all economic analysis, the exception Ricardo makes is perhaps more important than his general endorsement of Smith's ideas.

Ricardo criticizes Smith's adding-up theory of value on the grounds of circularity, particularly involving rent. He argues that the labor theory of value, properly understood, is the only logically sound foundation for political economic reasoning.

Ricardo focuses attention on what Smith called the *natural price* of commodities that are easily and widely produced. He explicitly excludes commodities whose value depends on their rareness and scarcity, like the paintings of dead old masters, or unique geological or archeological specimens, from the labor theory of value. What Ricardo is interested in is the determinants of the value of commodities that are being produced routinely all the time, like food grains (which he, following British usage refers to generically as *corn*) and textiles. In contemporary economic terms, we can think of Ricardo's theory of value as addressing the determinants of the long-run supply price in a competitive market with free entry. As we know, the long-run supply price in a market is determined by the *minimum average cost* of production given the technology available.

In Ricardo's view, the value of reproducible commodities in this long-run sense is fundamentally determined by the amount of labor embodied in them. If it requires 20 hours of labor to produce a table, 1 hour of labor to produce a bushel of corn, then according to this labor theory of value the long-run supply price of tables will be twenty times the long-run supply price of a bushel of corn. If the price of tables is \$40, the price of a bushel of corn will tend toward \$2. One advantage of the labor theory of value is that it gives a precise and unambiguous answer to the question of what determines the relative value of commodities.

If gold or silver were also produced within the country, and the national money were defined in terms of a certain amount of gold or silver, the same reasoning would establish the money prices of commodities as well. For example, if it took 10 hours of labor to produce an ounce of

gold and the dollar were defined as 1/20 of an ounce of gold, the price of the table would indeed be \$40 and the price of a bushel of corn \$2.

Ricardo is aware that there are different types and qualities of labor employed in an economy with a developed division of labor, depending on the skill level of the workers and the particular branch of production in which they work. Ricardo takes a rather commonsensical approach to this problem, arguing that it is possible at any particular moment to establish at least a rough equivalence between different types and qualities of labor across industries. In other words, Ricardo assumes that there is a unit of standard labor to which all specific forms of labor can be reduced. An hour of a skilled computer programmer's time might represent five or six of these standard hours, for example. Ricardo does not worry very much about the technical methods that might be used to estimate this standard. The important issue for him is that once the standard is established, it is possible to reason on the basis of the labor theory of value using that standard.

5.1.1 Ricardo's Correction of Smith

One of Smith's versions of the labor theory of value equated the value of a commodity to the amount of labor it can *command* in exchange on the market rather than to the amount of labor it *embodied*. Ricardo criticizes this *labor-commanded* interpretation of the labor theory of value on the ground that it makes the value of commodities depend on the wage. If, given the assumptions made above about tables and corn, the wage is \$1/hour, a table commands 40 hours of labor, and a bushel of corn 2 hours of labor. If the wage for some reason were to rise to \$2/hour, without any change in the production methods used to produce tables and corn, the value of the table in the commanded-labor sense would fall to 20 hours, and the value of a bushel of corn to 1 hour. In Ricardo's view this implication of the labor-commanded interpretation is a fatal defect, because he wants the theory of value to determine the value of the commodity *independently of variations in wages*. As we shall see, this feature of the labor-embodied interpretation plays a key role in Ricardo's reasoning.

5.1.2 Comparative Advantage and Trade

One important use Ricardo made of his version of the labor theory of value was to develop the theory of *comparative advantage* as the basis of trade between countries. Ricardo considers an imaginary world economy in which two countries, "England" and "Portugal", produce two

commodities, “wine” and “cloth.” Ricardo assumes that in England it requires 100 hours of standard labor to produce a bolt of cloth and 120 hours of labor to produce a barrel of wine, while in Portugal it takes only 90 hours of standard labor to produce a bolt of cloth and 80 hours to produce a barrel of wine. In labor terms, Portugal has an *absolute advantage* in the production of both commodities, since it requires less labor to produce them in Portugal than in England.

Nonetheless, argues Ricardo, there is the possibility of mutually advantageous trade between England and Portugal, in which England exports cloth to Portugal in exchange for wine. The reason is that the *opportunity cost* of a barrel of wine in terms of cloth is $6/5$ bolts of cloth per barrel of wine in England and $8/9$ bolts of cloth per barrel of wine in Portugal. It is cheaper for Portugal to get cloth by producing wine and selling it to England to buy cloth than by producing cloth directly.

This analysis shows that Ricardo believed that the labor theory of value holds *within* each country, but not *between countries*, presumably because capital and labor are not free to move from one country to another to bring about an equilibrium.

This example also leaves unexamined the determination of the gold price of cloth and wine, presumably on the assumption that neither England nor Portugal produce gold, so that the gold value of their currencies can vary so as to maintain the comparative advantage equilibrium.

The theory of comparative advantage has been both extremely influential and extremely controversial. It is a major analytical support for the policy of world free trade which became the dogma of nineteenth-century Britain, and has been politically dominant in the U.S. since the Second World War. It has also been challenged in important ways. Ricardo is not very explicit about the source of comparative advantage. The example he chooses suggests that comparative advantage is rooted in geographical and climatological differences, that is, in *exogenous* differences in the natural resource endowments of different countries. But in the modern world a huge amount of trade takes place between countries that have very similar resource endowments, suggesting that the widening division of labor itself is a cause of *endogenous* comparative advantage.

If comparative advantage is economically endogenous, it might be possible to influence the development of trade patterns dynamically through economic policy. It might, for example, be extremely disadvantageous for a country to adapt passively to emerging world patterns of comparative advantage, rather than seeking to develop its comparative advantage in certain directions.

5.1.3 Competition and the Labor Theory of Value

Ricardo was aware of another difficulty for his interpretation of the labor theory of value, which is that it is potentially inconsistent with Smith's claim that competition among capitals will equalize profit rates across industries. The problem is that according to the embodied labor theory of value, full-time workers of standard quality in different industries will all add the same amount of value to the product. If wages are equal, which will tend to be the case if workers are free to move from one industry to another, then each standard full-time worker will also produce the same amount of profit. But workers in different industries may work with very different amounts of capital, measured by value. Since the *profit rate* is defined to be the ratio of the profit flow to the capital invested, under these circumstances profit rates will not be equal in different industries.

A numerical example makes this very clear. Suppose one full-time worker can produce 1 ton of steel or 100 bushels of corn. Then according to the embodied labor theory of value, the price of a ton of steel should be the same as the price of 100 bushels of corn. If the price of a bushel of corn is \$2, then the price of a ton of steel should be \$200, according to the theory. Suppose that the wage of a full-time worker is \$100/year. Then both steel workers and agricultural workers produce \$200/year in new value, or which \$100/year goes to wages, leaving \$100/year as profit. But suppose each worker in the steel industry is equipped with \$2,000 worth of capital, and each worker in the corn industry is equipped with \$500 worth of capital. Then the profit rate in the steel industry will be $(\$100/\text{year}/\$2,000) = 5\%/\text{year}$, and the profit rate in the corn industry will be $(\$100/\text{year}/\$500) = 20\%/\text{year}$. When prices are proportional to embodied labor, but capital invested is not proportional to embodied labor, the embodied labor theory of value predicts different long-run profit rates. Ricardo, however, basically accepts Smith's argument that competition among capitals tends to equalize profit rates across industries through the movement of capital from lower profit rate to higher profit rate industries.

It is possible to show mathematically that if profit rates are equalized, relative prices will change with wages, unless the capital invested per worker is the same in all industries. This is a further problem for Ricardo, because, as his criticism of Smith's commanded-labor theory of value shows, he thinks a theory of value should determine the prices of commodities independently of movements in the wage rate.

Ricardo was aware of this logical difficulty, and had two ideas for dealing with it. In the *Principles*, he argues that equalization of profit rates will make price ratios deviate from embodied labor ratios, but

not by very much, because differences in capital invested per worker are not very big in fact. This has come to be known as the *93% labor theory of value*. Curiously enough, there is evidence that even in modern economies the deviation between long-run supply price ratios and embodied labor ratios is not very big.

In any case, Ricardo proceeds to develop his larger theory on the basis of the embodied labor theory of value. His conclusions will hold at least to the extent that variations in capital invested per worker across industries are small.

The Invariable Measure of Value

Ricardo also considered another way to make the embodied labor theory of value consistent with competitive profit rate equalization. Ricardo argues that if we could find *one* commodity which was always produced with the *average* amount of capital per worker, the value of that commodity would be unambiguously determined by the amount of labor required to produce it, and its value would be independent of the wage. He called this commodity the *invariable standard of value*. (The value of the standard is “invariable” to changes in the wage, not to changes in technology.)

The advantage of the invariable standard of value is that Ricardo could analyze changes in its value due to technology and then modify the conclusions reached for other commodities depending on how much the capital invested per worker in producing them deviated from the average. Thus the conclusions reached on the basis of the embodied-labor theory of value could be rigorously extended to all commodities.

Unfortunately, Ricardo never found a commodity that could reliably serve as his invariable standard. When he died, an unfinished essay headed “The Invariable Standard of Value” was on his desk.

5.2 Accumulation, the Falling Rate of Profit, and the Stationary State

Ricardo uses his embodied-labor theory of value as the foundation of an extraordinary analysis of the dynamics of capital accumulation. The idea is that the labor theory of value determines the whole value of the commodity (on average over the whole society), which then is divided up between wages, profits and rent according to the *theory of distribution*. Ricardo then makes the simple and plausible assumption that workers spend all their wages as a class on wage goods to reproduce themselves,

while landowners spend all their rents on luxury goods, but that capitalists save a large part of their profit as the source of saving and capital accumulation. Thus as long as the profit rate is positive, capital accumulation will increase the stock of capital, the demand for labor, and the population. This self-sustaining growth process will come to a halt only when the pressure of population on land raises food prices so high that profits become zero, the *stationary state*.

5.2.1 The Corn Model

Ricardo begins his analysis by considering the production of agricultural food grains, or *corn*. In the simplest case, the cultivation of corn requires *land*, *labor*, and *capital* in the form of stored-up corn to feed the agricultural workers until the next harvest. The land is owned by landowners who rent it out to capitalist tenant farmers, who in turn hire agricultural labor to work it.

Industrially produced commodities require capital and labor, but negligible amounts of land. Ricardo assumes that labor and capital are freely movable among different sectors of the economy, so that the wage rate and the profit rate in every industrial sector must settle in a long-run average sense at the same level as in agriculture. Thus a correct analysis of the determination of the wage and the profit rate in the agricultural sector will also determine the wage and the profit rate in the economy as a whole. This insight allows Ricardo to reduce the problem of his theory of distribution to understanding the determinants of wages and profits in agriculture.

The analysis of distribution can be carried out either in terms of money prices and wages or in terms of corn. When we use the money price system, we will assume that money is gold, and that gold is produced by a given amount of labor, so that the monetary unit is effectively a unit of labor time.

5.2.2 The Natural Wage

Ricardo adopts Malthus' analysis of population and wages, arguing that the dynamics of mortality and fertility determine an equilibrium level of the corn wage at which the population will be stable. This equilibrium corn wage becomes the *natural wage* for Ricardo. He assumes it to be a given characteristic of an economy, though different countries may, because of differences in customs and culture have different levels of the natural wage, and to change very slowly over time in any given country.

Ricardo assumes that the wages advanced to agricultural workers account for the lion's share of the capital per worker, abstracting from

workers' tools and seed. The given level of the corn wage then also determines the amount of capital required to employ a worker. Workers and capital are applied together in fixed proportions to the land.

Like Malthus, Ricardo assumes that the overwhelming majority of the population of a country will be workers, either in agriculture or industry. There may be differences in wage levels due to differences in skill and cost of training in different sectors of the economy, and differences in cost of living in different geographical regions, but these can be averaged out as far as the analysis goes. The amount of capital available to be advanced as wages determines the number of workers, and this in turn determines the population of the country and the demand for food.

5.2.3 Rent

Ricardo then turns his attention to the situation of the landlord and the determinants of *rent*. The theory of rent is easiest to understand if we reason in terms of corn, though the same arguments can be expressed in terms of money in a straightforward way.

The land in a country is not all of the same fertility for growing corn. Some land has very good soil, easy access, better local climate, and as a result will produce a very large harvest of corn with a given application of labor. Other land is not quite so favored by nature, and yields somewhat less corn for the same application of labor. In fact, we could imagine ranking all the land in a country in order from the most fertile to the least fertile at any moment in time. It is convenient to measure the quantity of land by the amount of labor (or capital, since capital per worker is fixed in Ricardo's model) required to cultivate it. So let us imagine the whole land of a country divided up into plots that require 1 person-year of labor to cultivate. Some of these plots may be bigger in area than others, of course.

To help us visualize the whole agricultural economy of a country, Figure 1 arranges these plots of land along the horizontal axis in order of their fertility. Any point on the horizontal axis represents a particular small plot of land. Since each plot of land can employ 1 worker, the distance from the origin to a point along the horizontal axis also measures the number of agricultural workers employed on land up to a given level of fertility.

In Ricardo's abstract model, the size of the industrial sector is determined by the amount of agricultural employment, since industrial workers are employed to produce the clothing, tools, furniture, and so on required by the agricultural workers (and themselves). Thus, given

the patterns of technology and consumption, and the productivity of labor in the various sectors, there is a one-to-one correspondence between the size of the employed agricultural labor force and the whole population. Under this assumption the horizontal axis can also measure the total population of the country.

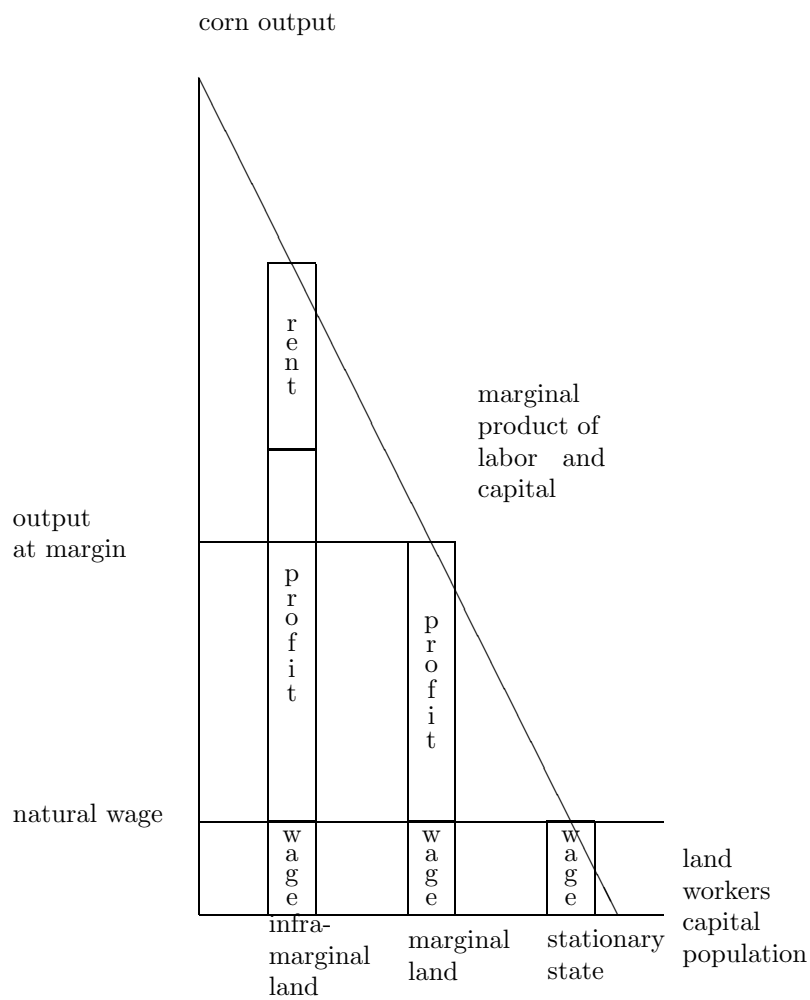


Figure 1. Ricardo's theory of distribution and accumulation. The horizontal axis measures the land in cultivation, ordered by fertility. The unit of land measure is the amount a worker can cultivate in a year, so the horizontal axis also measures agricultural population and total population. The vertical axis measures the fertility of the land. Land is cultivated in order of fertility: the output of marginal land is divided between profit and wages. Land of higher fertility commands a rent. The total rent of the economy is the area of the triangle above the output of the marginal land.

The vertical axis in Figure 1 measures the output of corn per plot of land. The *marginal product of labor* schedule shows the declining output per worker at the margin as less fertile land is brought into cultivation. It is actually made up of a whole lot of very thin rectangles, but it is drawn as a straight line. Three of the rectangles are shown on a larger scale. The downward slope of the marginal product schedule reflects *diminishing returns* to labor and capital as a result of the limited availability of fertile land.

The total corn output of the country is measured by the *area* under the marginal product schedule up to the least fertile land actually cultivated (the *agricultural margin*), since it is just the sum of the outputs of all the land plots cultivated.

The labor theory of value implies that on any plot of land the sum of profit and rent must be equal to the output of the land less the corn wage of the worker cultivating it. The output of the plot of land less the wage of the worker cultivating it is sometimes called the *surplus product*, since it is what is left over after the full costs of production, including the reproduction of the labor force, are deducted. What determines the division of this surplus product between profit and rent?

Ricardo considers the bargain that will be struck between the capitalist and the landowner. The capitalist is, by assumption, free to switch her capital to any other piece of land or to industrial production in search of a higher profit rate. If the landowner demands a rent so high that the capitalist would be left with less than the average profit rate, no capitalist will rent the land. On the other hand, if the capitalist tries to demand a rent so low that she makes more than the average profit rate on her capital, the landowner can easily find another capitalist who will pay somewhat more rent. The rent must be set just high enough to make the profit rate on the plot of land equal to the profit rate on all the other cultivated plots and on industrial capitalist production. This is Ricardo's *theory of differential rent*. The rent is "differential" because it depends on the relative fertility of the landowner's plot to the marginal plot of land.

In Figure 1, the level of rent on any plot of cultivated land will be the difference between the corn output of that plot and the corn output

of the marginal land. The total rent is the area of the triangle formed by the marginal product schedule to the left of the marginal plot.

The marginal land in cultivation in theory gets zero rent. This is an abstraction, of course, since in reality the landowner would demand a very low nominal rent to pay for the costs of making the rental contract. But in economic terms the principle that marginal resources command no rents is a central analytical idea. From this point of view it makes sense to consider a nominal rent as the equivalent of a zero rent.

The land beyond the margin could be used to grow corn, but its output is too small to provide a capitalist with the average profit rate once she has paid workers the natural wage, so no capitalist will invest to cultivate it. If the profit rate were to fall, however, some of this land would become profitable, and would come under cultivation.

Ricardo's theory of rent implies that as the population expands and the agricultural margin moves to the right, bringing less fertile land into cultivation, the rent of the already-cultivated land will rise. The owner of the previously marginal plot, who could not bargain for more than a nominal rent, now finds it possible to raise the rent above zero. Furthermore, as the agricultural margin shifts outward, a larger and larger proportion of the total corn output goes to rent.

Ricardo's theory of rent is important because it gives us a correct insight into one of the basic mechanisms determining incomes in a market economy. Rent is obviously important in the pricing of all natural resources, such as mineral resources, hydropower, and petroleum reserves. Economic rents, however, arise whenever the owner of a resource is in a position to collect a higher price for its use than it costs her. In the case of land the cost is zero. The high incomes of movie and sports stars are economic rents in this sense, and thus subject to Ricardo's principles.

As we will see later, contemporary neoclassical value theory is based on the idea of applying Ricardo's theory of rent to *all* factors of production, including labor and capital.

5.2.4 Marginal Land and the Profit Rate

At any moment in time the population of the country is given, and requires a certain amount of corn as food, given the natural wage. This determines the agricultural labor force, the capital invested in agricultural, the total amount of land brought into cultivation, and the margin of cultivation. Ricardo's extraordinary insight is that because the marginal land yields no rent, the surplus product on the marginal land determines the profit rate *in the whole economy*. Remember that Ricardo, like Smith, believes that competition among capitals will tend

to equalize profit rates in different sectors of the economy. The profit rate of capital invested on marginal land will, then, tend to be equal to the profit rates on other land (as a result of differential rent) and to profit rates in all sectors of industrial production. Since the size of the population determines the marginal land in cultivation, the profit rate in the economy as a whole has to adapt.

This beautiful discovery closes Ricardo's system and gives it complete determinacy. In effect, it solves the problem of distribution. Malthus has already given a theory of the natural wage in his demographic analysis; Ricardo has given Smith's theory of rent as a residual a rigorous form; all that remains is to determine the profit rate, which Ricardo has now accomplished.

We can summarize Ricardo's theory of distribution, in the following terms. Malthus' laws of fertility and mortality establish the long-run natural real wage in a country. The population may expand or contract as a result of changes in the amount of capital available to employ workers, but the workers themselves find their standard of living always returning to the same level. Given the population of the country, the fertility of its land determines how much of the land has to be brought into cultivation to provide the necessary food, and as a consequence the fertility of the marginal land. The surplus product of workers on the marginal land takes the form of profit, and determines the profit rate. All workers share basically the same standard of living, and all capitalist share the same rate of profit on their capital. The surplus product on land more fertile than the marginal land takes the form of rent.

5.2.5 Accumulation

Ricardo's next step is to put his theory of distribution into motion as a theory of *capital accumulation*.

Ricardo's theory of capital accumulation is based on assumptions about the consumption/saving behavior of the classes of workers, landlords and capitalists.

Ricardo thought that workers as a class consumed their wages in the process of reproducing themselves. This view, which is held by Smith, Malthus, and Marx in addition to Ricardo, may not be very far off the mark even for contemporary capitalist societies. Contemporary working class households, of course, do save, for retirement, to finance their children's educations, and to tide themselves over spells of unemployment. But all these motives for saving are also motives for *dissaving*: the saving of households contemplating retirement is offset by the dissaving of retired households, for example. Because of these offsets the net saving

of workers' households may in fact be rather small or zero. Since official statistics do not categorize households by class status in Ricardo's sense, it is difficult to be sure one way or the other. Neoclassical economists reject the class divisions Ricardo and Smith took for granted, and attribute all private saving ultimately to "households," but this category includes both the wealthiest capitalists and the poorest workers.

Ricardo thought, or at least provisionally assumed, that landowners also spent all their rental income on consumption. He was here reflecting the British social reality of his day. Large British landowners were generally aristocratic families who spent fortunes maintaining their political influence and power, but very little in improving their estates or, with a few notable exceptions, building factories or mills.

Thus for Ricardo pretty much all the saving and capital accumulation in the society was attributable to capitalists. Ricardo went further and assumed that capitalists saved practically all of their income. This may seem strange in light of the enormous homes and estates we associate with nineteenth century successful capitalists, but in fact even these enormous expenditures absorbed only a tiny fraction of the total income available to them. Ricardo falls into line with the image of the abstemious capitalist, who works to make money without stint, and hardly spends anything on himself.

The total profits of the society, measured in corn, are represented in Figure 1 by the rectangle lying above the natural wage, and bounded by the extensive margin of land. If all these profits are accumulated, in the next year there will be a larger demand for labor and the population and agricultural labor force will increase, moving the extensive margin to the right in the diagram. This is the basic dynamic of capital accumulation according to Ricardo's thinking.

A little work with the diagram shows that the effect of capital accumulation is to increase the population, food output, and agricultural labor force, to increase total rents, but to lower the rate of profit as the surplus on the marginal land declines due to diminishing returns. The total *amount* of profit may increase in the early stages of capital accumulation, because the amount of capital is rising faster than the profit rate is declining, but eventually the amount of profit has to decline as well. If the diagonal line representing the marginal product of labor and capital, that is, the schedule of fertilities of the plots of land, remains unchanged, the profit rate and the amount of profit have to approach zero.

5.2.6 The Stationary State

This is a quite extraordinary and influential conclusion for Ricardo's analysis to reach. Ricardo has a logically powerful argument that capital accumulation will eventually bring about its own demise. Eventually the rate of profit will fall to zero and accumulation will cease. Ricardo called this the *stationary state*.

The reason that this happens is clear from Figure 1: eventually the population becomes so large that the marginal land is just fertile enough to pay the natural wage and yields no surplus product at all, and therefore no profit. There is, of course, a very large total surplus of corn, represented by the triangle above the natural wage, but in the stationary state it all takes the form of rent, which, according to Ricardo's assumptions will be consumed, not accumulated. In the stationary state capital invested can be recovered, but without the increment of profit. There is a very large population living at the subsistence (or natural wage) standard of living, and regulated by the Malthusian mechanisms of high fertility and high mortality. The capitalists as a class have to struggle competitively as hard as they can simply to maintain their capitals intact; they find they have no profits to reinvest to expand production.

Looked at from another point of view, Ricardo's stationary state represents the imposition of resource *limits to growth*. At the stationary state the population has grown to its maximum level, given the capacity of limited land to provide food. The limits to growth in Ricardo's world come from diminishing returns to capital accumulation, and take the form of inexorably rising rents, which eat away profits. If we look at the system in terms of money and money prices, the profit rate is eaten away by inexorably rising money wages, required to allow workers to subsist in the face of constantly rising food prices. Our contemporary anxieties about resource and environmental limits to economic growth ultimately stem from the same belief in diminishing returns: we worry more, however, about the environmental catastrophes and costs that might bring economic growth to a halt, than about rising rents.

Ricardo's analysis also gives us a rigorous answer to the puzzle raised by Smith's claim that the profit rate in the economy as a whole tends to fall with the accumulation of capital. The reason, according to Ricardo, is the diminishing returns to labor and capital due to the limited supply of agricultural land.

It would not help the stationary state if landlords accumulated. In fact, accumulation by landlords would drive the profit rate negative, since the only use that could be made of their capital would be to cultivate land on which the surplus product was negative.

5.2.7 Foreign Trade and Technical Change

While Ricardo thinks that the stationary state lies inevitably in the future of capitalist accumulation, he thinks that in the short and medium run there are two forces that might delay the stationary state and allow capital accumulation to continue: foreign trade and technological progress.

In the formal terms of Figure 1, both foreign trade and technological progress appear as a shift upward and outward of the marginal productivity schedule for labor and capital.

Foreign trade has this effect because a world market in corn effectively puts all the potential agricultural land in the world on the diagram. The horizontal axis stretches out dramatically, and the diminishing returns to accumulation are greatly slowed, if not halted altogether. The fall in the rate of profit due to rising rents slows down.

Ricardo and his followers used this argument very effectively in support of their free trade politics in nineteenth century Britain. The climactic episode in the political struggle over trade policy came after Ricardo's death in the 1830s, when Parliament repealed the *Corn Laws*, the tariffs and quotas that prevented the free import of grain into Britain. This event marked the shift of effective political dominance in Britain from the landowning aristocracy to the rising capitalist class. The landowners' interest in high and stable food prices gave way to the capitalist interest in low food prices and low wages.

Technical change that increases the output of agricultural land, say, through better fertilizers, or pesticides, or mechanical cultivation, or irrigation, also has the effect of raising and shifting outward the schedule of marginal products of capital and labor in Figure 1. Technical progress increases the amount of corn that can be produced on each plot of land, thus raising the schedule. The effect, in Ricardo's eyes, is similar to the opening up of foreign trade. Technical change raises the rate of profit immediately, and allows for more capital accumulation and more population increase before the stationary state arrives.

Ricardo, like Malthus, thought that technical changes in agricultural production was possible, but could not imagine a continuous and unending process of technical change driving economic growth. Individual inventions that raise productivity might sporadically raise the rate of profit and allow for an increase in population, but eventually the inevitable forces of diminishing returns would set in again, and the profit rate would start to fall. Ricardo is all in favor of technical progress, since he thinks capital accumulation is the fundamentally dynamic force in European society, and dreads the arrival of the stationary state, but

he has no hope that technical change can put off the stationary state forever.

5.2.8 History and Ricardo's Vision

How has history treated Ricardo's predictions? This is a difficult question to answer because of the gigantic sweep of Ricardo's vision, and the very long time it might take for the forces he analyzed to play themselves out.

In the almost two hundred years since Ricardo wrote, the two offsetting forces he analyzed, foreign trade and technical change, have clearly played the dominant role in the world economy. The development of the American continents, Australia, Southern Africa, and the opening of South and East Asia to the world economy, have greatly enlarged the stage on which the drama of capital accumulation plays itself out, and correspondingly slowed down the Ricardian fall in the rate of profit. It is not at all clear that humanity has exhausted the possibilities of increased utilization of agricultural land. The agricultural potential of Siberia is barely developed, for example. Much of the most fertile land in the world in Asia is still cultivated by extremely low-productivity methods. An optimist might fantasize that irrigating the Sahara desert could have the same impact on world agricultural output as the irrigation of the Central Valley in California had on U.S. food production.

The process of technical change, which Ricardo saw as a welcome but unpredictable relief from the pressure of diminishing returns, has if anything gained momentum over the past two hundred years. One major technological revolution after another has emerged: steam power, electricity, synthetic chemistry, the internal combustion engine, telephony, radio, electronics and digital computers and all the rest.

But the historical experience of the last two hundred years is not sufficient to dispel all the anxieties so beautifully encoded in Ricardo's model. How do we know that diminishing returns in the form of environmental decay or collapse or the exhaustion of natural resources will not eventually wear down our ingenuity and our pioneering spirit? Of course, we don't know the future, and can't be sure whether it holds a repetition of the technical and foreign trade revolutions of the last two hundred years, or the final arrival of Ricardo's stationary state.

The demographers' prediction that human population will stabilize over the next seventy to a hundred years at somewhere between fifteen and thirty billion people surely fits at least part of the picture of the stationary state. But a stationary population could coexist with a technologically progressive economy and a rising standard of living, or

sink back into a the Malthusian equilibrium at a bare subsistence level. Looking at the world right now one can see signs consistent with either path.

5.3 Ricardo on Machinery

In revising his *Principles* for a later edition, Ricardo had some second thoughts about the impact of machinery on the well-being of the different classes of society. He wrote up these considerations as the chapter *On Machinery* in the present text.

Ricardo asks himself whether the invention and adoption of machinery benefits each of the classes of society. The immediate effect of machinery is to increase the productivity of labor, which makes commodities cheaper in real terms, according to the labor theory of value.

This clearly benefits the landowning class, since they can buy luxury goods more cheaply. It equally benefits capitalists who find that both their consumption goods and the goods necessary to set their factories in motion become cheaper.

What about workers? Originally, Ricardo tells us, he believed that workers as a class must also benefit from the adoption of machinery, and the consequent cheapening of wage goods, but he realizes that this depends on a crucial assumption, that the total amount of capital devoted to the wage fund that supports workers remains at the same size. If this assumption holds, then employment will not fall, and workers will find their means of subsistence becoming cheaper with the adoption of mechanized techniques.

But the mechanized techniques are expensive for capitalists to put in place. Ricardo's second thought concerns the possibility that in order to buy expensive machines capitalists will reduce the wage fund itself, thus reducing employment of the working class and impoverishing marginal workers. Ricardo refers to this in rather obscure language as a *reduction in gross product while net product remains constant*. Here he uses net product to refer to the surplus product shared by capitalists and landowners, and gross product to refer to the whole output of the society. If this is the path that mechanization takes, marginal workers will be unemployed without the creation of other jobs to absorb them, wages will be forced down by competition among workers, and the Malthusian mechanisms of population decline will come into play.

It is difficult for Ricardo to come to a firm conclusion on the impact of mechanization, because the cheapening of commodities that benefits the capitalists may lead them to accumulate more, and thus increase

the total capital fast enough to offset the relative decline in the wage fund. Thus the actual course of employment depends on the exact balance between the forces of accumulation on the one hand, which tend to increase the wage fund and increase the demand for labor, and technological unemployment, on the other, which tends to destroy jobs and make workers redundant.

Ricardo argues that there is indeed a powerful motive at work to encourage capitalists to mechanize. The first capitalists to adopt machine techniques find that their costs of production fall very rapidly. As long as most capitalists in their line lag in mechanization, the price of the output will be determined by the backward techniques, and the innovating capitalists will be in a position to make *super-profits* because their costs are so low. Of course, as the other capitalists adopt the same technology, the prices of output will fall and these super-profits will decline. Still, the lure of the super-profits is a powerful motive for capitalists to mechanize.

Ricardo also notes that rising wages themselves will tend to push capitalists to adopt labor-saving techniques of production in order to prevent their costs from rising. As we have seen, one of the effects of diminishing returns in agriculture in Ricardo's model is to raise agricultural prices and money wages. This brings into play the counter-force of technological change seeking to avoid the rise in costs and fall in the rate of profit that would otherwise ensue.

Discussion Questions:

On the basis of Ricardo's analysis of machinery would you expect the incentives to the invention and adoption of machines to be stronger in North America or in Europe during the middle of the nineteenth century. (Hint 1: where were wages higher?) (Hint 2: where was land more abundant and labor scarcer?)

Link Ricardo's discussion of the incentives for capitalist innovation to contemporary technological competition.

Chapter 6

Karl Marx I: Historical Materialism and the Commodity

Karl Marx was born in 1818 and died in 1883. Marx was a student during the waning days of the *ancien régime* in Germany, in the late 1830s and 1840s. Britain, France, and to some degree Spain had consolidated themselves as modern nation-states by the nineteenth century, but Germany remained divided politically into a huge number of small kingdoms and principalities. Germany was experiencing the pressures of economic development and the industrial revolution, and there was widespread recognition that massive political and social changes were in process. Revolution broke out in Germany and Austria in 1848, but the revolutionary movement divided and was unable to unify Germany. Instead the Prussian autocratic state eventually created a German Empire by joining together the non-Austrian German-speaking peoples, thereby setting the stage for the cataclysmic upheavals of twentieth century history.

The realization that Germany was in the process of epochal social transformation prompted a vigorous debate over the direction and shape of that transformation. The field of this debate in Marx's student days was largely philosophy, and in particular the philosophy of George William Frederick Hegel. Hegel struggled with the problem of adapting the theological philosophy of the Western tradition to the emerging secular capitalist society. Hegel's and his successors' work put religion, history, and social institutions under a searching critical investigation, centered around questions like: "Where is history heading?" "What prin-

ciples guide the evolution of social and political institutions?" "Where does the legitimacy of political power lie?" "How can the disruptive forces of industrial capitalism be reconciled with traditional religious morality?"

Marx was at the center of this radical questioning of received values, and developed a theory, *historical materialism*, to address these fundamental questions. He hooked up with Frederick Engels, the scion of a well-to-do German manufacturing family, who had spent several years in the family business in Manchester, and written an extraordinary portrait of the social dislocation and conflict engendered by the industrial revolution, *The Condition of the Working Class in England*. Engels saw Marx's theory of historical materialism as a version of his own views, and became Marx's collaborator and intellectual and financial supporter for the rest of Marx's life. During this period Marx wrote the philosophical papers now known as the *1844 Manuscripts*.

Marx got involved in the radical wing of German politics and edited a newspaper during the revolution of 1848 that supported the most extreme democratic measures, the political organization of German industrial workers, and the destruction of all feudal property rights. Marx and Engels wrote *The Communist Manifesto* at this time to show the connection of the contemporary upheavals of German and European politics with the underlying forces of social change analyzed by historical materialism. With the failure of the revolution, Marx was forced to leave Germany and spent the rest of his life in exile, first in France and Belgium, and eventually in London, where he supported himself by writing for newspapers, and from Engels' subsidies. Marx, working frequently in the British Museum Reading Room, undertook a massive systematic study of political economy. The early drafts of this work are now known as the *Grundrisse*; Marx supervised the publication of revisions as the Volume I of *Das Kapital*, (*Capital*), and Engels prepared much of the rest of the material for publication after Marx's death in Volumes II and III of *Capital*, and *Theories of Surplus Value*. Though Marx was an ardent advocate of world-wide proletarian revolution to establish a socialist society, most of his theoretical work in economics concerns the capitalist system, and it is primarily as a theorist of capitalism that Marx's work in political economy remains important today.

Marx worked actively to promote the political organization of workers as a revolutionary force in Britain, France, and Germany. His intellectual genius, brilliant polemical writing, and evident loyalty to the idea of proletarian revolution made him an influential leader of a disorganized, fragmented, but emotionally and politically potent movement. Marx's relations with his political rivals within the workers' socialist movement often took the form acrimonious and uncompromising con-

flict. The strain of immense intellectual labor, unrelenting political struggles, and material poverty and deprivation eventually ruined Marx's health, and he was unable to push his projects forward much in the last decade and a half of his life. His last major foray into political economy took the form of detailed comments on a draft manifesto of a German Workers' Party (*The Critique of the Gotha Programme*).

Marx's political radicalism coexisted with a conventional Victorian lifestyle in his marriage to Jenny von Westphalen, the daughter of a prosperous family who sacrificed her life to Marx and their daughters. Marx's personal behavior and language often reflect the unquestioned racist and sexist presumptions of his time. Engels, an unrelenting critic of Victorian hypocrisy in sexual matters, lived in a long term relationship with a woman whom he did not marry, and became one of the intellectual founders of modern feminism through his work on the origins of the family and state.

Marx was a master of the German critical method. He made his own contributions in the form of a critique of existing ideas and writing. Marx takes a concept, such as the commodity, as he finds it in Smith or Ricardo, for example, and transforms it by questioning its historical origins and limitations, placing it in relation to a broader range of theories, and forcing it to confront its own social manifestations. By the time Marx is finished, the concept, without losing any of its original significance, functions in a new way in a new context. This *dialectical* theoretical method is a powerful way of developing new insights and questions, though it cannot by itself produce new knowledge of reality without the empirical test of observation or experiment. Marx understood this, and argues in parallel at a highly abstract level and at a very concrete historical level, using statistics, government reports, and newspaper reports to explain the immediate significance of his theoretical discoveries.

Marx was a critical genius, and his penetrating transformation of classical political economy into a doctrine of social revolution was a major intellectual landmark of nineteenth century political economic thought. Marx's intellectual prestige became a much-fought-over legacy of the various political movements that were founded on Marxist ideas, from the Social Democrats who are still a major force in European politics, to the Bolshevik Communist parties that ruled Russian and Eastern Europe for much of the twentieth century, and the Asian Communist parties even now guiding the modernization and industrialization of China and Indochina. I think it is important to keep in mind that Marx died before these various movements developed, and that, like other important thinkers, he should not be held responsible for all the good and evil done after his lifetime in the name of his thought. There is much to

learn, and much to criticize, in Marx's work.

6.1 Historical Materialism and the Capitalist Mode of Production

Marx's conception of historical materialism addresses the curious problem of the continual change in the form of the division of labor in human societies. Other species that adopt a division of labor, such as bees and ants, always organize the hive or hill in the same way. The division of labor appears to be programmed into these species at a genetic level. Human history, on the other hand, exhibits massive, fundamental, structural differences in the division of labor. The size of the human population, its distribution between large and small settlements, the technologies employed, the institutions organizing production, and the political institutions supporting social production, all differ greatly over time and space.

On the whole the nineteenth century believed that human history was a record of *progress*, of an increase in our collective power to control our conditions of existence. There are various philosophical (or, as Marx would come to call them, *ideological*) interpretations of human history. Some ancient philosophers, such as Plato, viewed the laws of social and political organization as unchanging over time, and reflecting eternal ideal principles of justice. Christian theologians explained history as the working out of a divine plan for mankind. Hegel saw history as the progressive realization of the abstract idea, which he associated with God.

Marx's position was that the human social world was part of the physical world, and had a *material reality* independent of the consciousness of the human beings who lived through it. In this sense Marx was a *materialist*. (This is not materialism in the sense of an obsessive concern with material wealth, comfort, or consumption, in the sense that the word is sometimes used now.)

Marx thought that the laws of social reality were as external and unyielding for any individual living through it as the laws of physics, but argued that social reality is constructed from the collective results of individual action through processes beyond any particular individual's control. On the one hand, individuals are always born into an ongoing society with accumulated resources, institutions, beliefs, and knowledge that constrain each generation's choices and action. On the other hand, it is impossible for an individual to act socially except through the web of existing social institutions and relationships, and equally impossible

for her to predict the full social ramifications of her choices, because they depend on the actions and choices of other people. "Humanity makes its own history, but not in circumstances of its own choosing," argues Marx in a famous summary of this point of view.

Because social reality is determined by human action, it is subject to historical change in a way that physical laws and biological laws are not, according to Marx's thinking. Over time, the collective actions and decisions of millions of people can fundamentally alter the resources and institutions of society, though not as the result of their conscious intentions. In this sense Marx's materialism is *historical*. Social reality is external to the individual and manifests laws that are as objective and unchangeable from the individual's point of view as physical and biological laws. But social reality is the collective creation of the people making up society, so that collectively people can change society in a way that they can never hope to change physical or biological reality. Not only can people change society, but inevitably they do, and this continual process of change is what Marx sees as history. An immediate corollary of historical materialism is that no human social institution lasts forever: in fact, all human social institutions are in a constant process of change and transformation. Even more precisely, human social institutions *reproduce* themselves through changing and transforming themselves. Marx criticizes Smith, Malthus, and Ricardo for talking as if there were universal principles of social and economic organization that could be discovered once and for all and would be valid for all human societies at all times and places.

The task of social science, from this historical materialist perspective, is to study the way in which particular historical social systems reproduce themselves, their *laws of motion*, and the *contradictions* through which they undergo transformation into something else. The procedure Marx adopts is to analyze the complexity of social reality into its abstract components by the application of the critical method. Once we understand these abstract components, we can reconstruct the complexity of social reality synthetically as their resultant. The image is something like one of those books showing the systems of the human body on different sheets of transparent plastic. As you lay one sheet over another, you see the image of the actual body reproduced as the sum of its component parts.

6.1.1 Surplus, Exploitation, and Class

In applying historical materialism to the understanding of human history as he knew it, Marx argued that all past civilized societies had a social *class structure*, founded economically on *class control of surplus product*.

(One important critique of Marx's ideas rests on the fact that we know more about the details of history today than he did, and no longer believe some of the generalizations he took for granted.) Civilized societies, in this view, are all based on their technological ability to produce a *surplus* above the immediate needs of the physical reproduction of their workers. Marx argued that in all the societies we have a record of this social surplus product was appropriated by a small minority of the population, thereby dividing the society into a class of producers and a class of appropriators of the social product.

Marx believed, for example, that ancient Greek and Roman society generated most of their surplus product from slave labor. In this situation the slaves are the direct producers, and the slaveowners the appropriators of the surplus product. Marx also believed that the surplus product of feudal European society stemmed from the labor of serfs who were bound to the land of their feudal lord. The serfs worked a certain number of days a week to cultivate the lord's land, thereby creating the surplus product that allowed the feudal lord to maintain soldiers and fortifications.

In Marx's language the appropriation of the surplus product by a narrow class is *exploitation* of the producing class. A class society is one in which a social surplus product is appropriated by one class through the exploitation of another.

6.1.2 Forces and Relations of Production

There are two aspects (or, as Hegelian language has it, *moments*) of exploitation. In the first place, the resources of the society must be advanced enough to make the production of a surplus above the reproductive needs of the producers possible. Marx calls the productive resources of a society *forces of production*. They include the population, its accumulated means of production, and its knowledge and technology. This concept is very broad, and embraces any relevant factor contributing to productivity. For example, knowledge about organizing the division of labor, even though it may not be embodied in any particular machine, is part of the forces of production.

But the technological possibility of producing a surplus does not guarantee that a surplus will actually be produced, nor that it can be appropriated by a particular class. Thus exploitation also involves particular social institutions governing the control over technology, resources, and labor, which Marx calls the *social relations of production*. For example, in feudal society the military power of the feudal lords gave them control over the land and the labor of the serfs. This control

was deeply engrained in the social institutions of the time in the form of feudal privileges and duties. Through enforcing these customs, laws, and contracts, feudal lords could get the weekly labor from the serfs required to cultivate their own lands and harvest the surplus product. The serfs would provide for their own subsistence by working on the land made available to them. Furthermore, the surplus product would be available to them and under their control as a result of the social relations under which it was produced. The surplus product, in turn, fed the soldiers and knights maintained by the feudal lord to enforce his rights and defend his domain from external threats. Similarly, under slavery the entire product of the slave belongs to the slaveowner. The slaveowner is directly responsible for providing for the slave's subsistence by providing minimal levels of food, housing, and clothing to the slaves. But whatever the slaves produce in excess of this subsistence minimum is immediately the legal property of the slaveowner, who thus appropriates the surplus product.

One can also think of the surplus product and exploitation in terms of the total *labor time* of the society's producers. The labor of a society has to be divided up between producing the goods necessary to allow the producers to reproduce themselves. Marx calls this the *necessary labor time*. But in any even slightly developed human society the task of producing the workers' subsistence does not take the whole available labor time. If workers are induced to work longer than necessary to reproduce themselves, the remaining labor time is *surplus labor time*. In an abstract sense, what the exploiting class appropriates when it gets the surplus product is the surplus labor time of society.

Marx believed that each historical class society had its own characteristic combination of forces of production and social relations of production, the combination of which he called the *mode of production*. Thus the ancient slave mode of production is the combination of the social relation of slavery with the technology of dispersed agricultural production on large estates. The feudal mode of production is the combination of serfdom, feudal privileges and duties, and agricultural production on small, divided strips of land in a communal setting.

Marx argued that the interaction of the forces and mode of production determined the path of technical change in the society. Some modes of production, in his view, tend to stifle technical change and progress because it threatens the stability of the social relations of production. Conversely, the gradual accretion of forces of production, particularly technology and changes in the organization of labor, can undermine and eventually overthrow the social relations of production. In the study of these dynamic interactions of the forces and relations of production lies the secret of historical change. Marx saw the process of historical change

as at its root a series of *class conflicts*, in which contesting needs and interests of the classes arising from the mode of production are fought out in political, cultural, and military terms. Revolutions like the French Revolution were, in Marx's view, the most dramatic expression class conflict.

6.1.3 Base and Superstructure

The mode of production, in turn, is only a part of the whole complex of institutions and practices that make up a human society. In Marx's language, it constitutes the *material base* which supports other aspects of society, such as government and laws, religion, education, and culture, including the sciences and arts, which Marx called the *superstructure* of society. Marx argues that there is a complex interaction between base and superstructure in the reproduction of social institutions, but that when push comes to shove, the needs of the base, and particularly of the social relations of base, determine the outcome. On the other hand, elements of the superstructure often make a critical contribution to the reproduction of the social relations of production.

For example, Marx argued that feudal Christianity played a powerful role in resigning the mass of the serfs to their subordinate social position in feudal society, fostering a psychological obsession with sin and the afterlife that distracted people from the immediate reality of their lives. Similarly, Marx argues that *bourgeois economics*, the wing of Classical political economy that emphasized the necessity of inequalities in the distribution of property and wealth in capitalist societies, and constructed an "apology" to defend capitalist social relations of production, plays an important role in reconciling capitalist workers to the inevitability of the institutions under which they live.

Marx interpreted societal laws as reflections of the underlying class structure. The first acts of the French Revolutionary Assemblies, for example, abolished the feudal privileges and practices that secured the surplus labor of the serfs for their lords. In Marx's view, this was an expression of the capitalist character of the French Revolution, which sought to free labor from serfdom to participate in the capitalist wage labor market. Furthermore, Marx argued that the ruling philosophical and religious ideas of a society generally echoed the beliefs of the appropriating classes. Medieval theology and philosophy are largely devoted to justifying the privileged class position of the feudal elite. The literature of emergent industrial capitalism introduces themes of self-reliance and social mobility that are congenial to the "self-made" capitalist.

6.1.4 The Succession of Modes of Production

Marx in his early work collaborating with Engels, including the *Communist Manifesto*, made an attempt to apply the general point of view of historical materialism to constructing an interpretation of world, or, at least, European history. This interpretation is organized around the idea of a succession of modes of production, each giving way to the next as the result of its own internal contradictions.

This sketch begins with the notion that stone-age peoples lived in a type of primitive communism, small communities that shared their very small wealth according to traditional rules. The forces of production in this mode of production were very little developed, and these peoples depended largely on hunting and gathering for their subsistence. As a result of the low level of development of productive forces there was no surplus to speak of, and hence no class division of society.

The establishment of property relations, particularly property in women and children, destroyed this primitive communism and its mode of production. On the one hand, the establishment of property in women and children made possible the beginnings of settled agriculture, with an attendant increase in potential surplus production. This surplus production was appropriated by priests and kings, thus creating the class structures of the early empires. These empires saw the emergence of gigantic disparities of wealth and power based on the mobilization of agricultural surpluses from wide geographic regions through taxes and tribute enforced by military power.

Under the Roman empire, slave labor in large-scale agriculture became a powerful engine of surplus production, and the method of exploitation shifted from a largely military imposition of tribute to the extraction of surplus labor from slaves through legal institutions.

This ancient slave mode of production degenerated through the breakup of the Roman empire and its military and political institutions, into feudal fragments. The slave populations reproduced by imperial conquests became serf populations bound to the land of a particular local lord, owing their surplus labor to the lord on the ideological pretext that he compensated them by providing military protection.

Feudal society gradually organized itself into nations, fostered the growth of cities, which were freed from feudal subordination. In these cities a nascent capitalism based on trade and small manufactures took hold. Slave and serf modes of production are inherently technically regressive. Slave owners are reluctant to invest in labor-saving devices that may be sabotaged by slaves. Feudal lords have an interest in maximizing the labor they control, because of its usefulness as armies in times of crisis. The capitalist, on the other hand, has a strong incentive to

transform production through technical change, and to increase the rate of exploitation of wage labor. This leads to the rapid growth of capitalist wealth, and its conflict with the feudal aristocracy, culminating in the revolutionary turmoil of the early modern period in Europe.

Marx and Engels argue that, just as the contradictions of feudal society led to its transformation into capitalism, the contradictions of capitalist society will culminate in a transformation into socialism. But whereas past transitions from one mode of production to another have always produced a new class society based on new relations of exploitation, socialist society will abolish class distinctions by creating institutions for the social control of the surplus production. Just as capitalism unleashes a huge increase in productive forces through technology, socialism will build cooperatively on these forces of production to create a society in which the satisfaction of human needs rather than the pursuit of surplus product is the ruling motivation. Eventually the superstructure of class society, including the state, will become obsolete, and the “true history” of humanity can begin.

This brilliant and in many ways insightful sketch of an interpretation of history has been remarkably influential in shaping twentieth century politics and modern historical research, but has some important limitations. Marx and Engels simply did not know enough about the detailed social history of non-European nations to make accurate generalizations about their modes of production. As a result it is difficult to fit non-European cultures and civilizations into this scheme. They tended to ignore awkward facts that contradicted their interpretation. Feudal European society was in fact very complex, with tremendous variation in the social relations of production between different regions and periods, for example. The relative importance of slavery as a source of surplus production in the Roman empire remains highly controversial among economic historians.

From a political point of view, a simplistic reading of Marx and Engels’ interpretation created an unfortunate impression of a mechanical movement of history which is actually foreign to the critical spirit of the historical materialist method. Some socialist and communist political movements began to view their eventual victories as foreordained by the “laws of history,” and as a result to lose contact with the political and social reality of their times. Marx’s discussion of the transition from capitalism to socialism introduces completely different concepts and principles from his analysis of previous modes of production. Whereas previous transformations involved the gradual growth of new class relations within an existing mode of production, Marx seems to envision socialism as the wholesale conversion of the capitalist mode of production to entirely new principles of operation. The prophesy of an end to class

relations and class struggle and the beginning of a new epoch of human relations carries a utopian and unhistorical flavor that sits uneasily with the general point of view of historical materialism.

It may be useful to separate the general principles of historical materialism as a methodological approach to understanding human society and historical change from the specific interpretation Marx and Engels put forward in their initial application of these ideas. The general point of view of historical materialism raises questions that need to be answered, and directs our attention to important and relevant aspects of human society, whatever the limitations and inaccuracies of the scheme of succession of modes of production.

6.2 The Commodity and the Theory of Value

Marx had already developed the philosophy of historical materialism before he began the extensive investigation of Classical political economy that led to *Capital*. Marx believed that capitalism, though it was not founded on forms of unfree labor like slavery and serfdom, was nonetheless a class society resting on the appropriation of surplus labor time. He looked to the existing political economy to find the “secret” of the ability of capitalists as a class to appropriate surplus labor time in a system that appears to guarantee equal legal and civil rights to workers and capitalists.

What he found in the Classical political economists, particularly Ricardo, was a theory that paralleled historical materialism to an astonishing degree. Ricardo sees capitalist society in terms of class; furthermore, Ricardo’s interpretation of the labor theory of value implies that labor creates the whole value of commodities, but receives only a part of the value in the form of wages. Ricardo’s labor theory of value, or some close variant of it, thus promised to disclose the secret of exploitation in capitalist society.

6.2.1 The Circuit of Capital

Marx first began to think about capitalist production in *phenomenal* terms (to use Hegel’s language) terms. What does capital look like? Basically it is a process in which the capitalist lays out money to buy commodities, which might include the labor-power of workers, and later sells them, or some other commodities produced from them for more money than he started out with. Marx summarizes this in his diagram of the *circuit of capital*:

$$M - - - C - - - M' = M + \Delta M$$

In this formula, M stands for the original money the capitalist spends to start the process, C for the commodities he purchases, and M' for the (usually) larger amount of money he sells the commodities for at the end of the circuit. M' can be thought of as containing the original capital, M , together with a *surplus value*, ΔM . From the point of view of the capitalist, the problem is to understand where the surplus value comes from.

The circuit of capital diagram very closely parallels the *income account* of a capitalist firm. In simplified terms, the income account shows the *gross profit* of the firm on sales as the difference between sales revenue and the cost of the goods sold. In terms of Marx's circuit of capital, sales revenue is $M' = M + \Delta M$, the cost of goods sold is M , the capital outlay, and the gross profit is ΔM , Marx's surplus value.

Marx contrasts the circuit of capital with the direct circuit of commodities, in which someone sells a product in order to buy another product that better satisfies her needs. The commodity circuit is:

$$C - - - M - - - C'$$

Here C represents the commodity the seller starts out with, M the money she receives for her product and spends to buy another product, and C' the qualitatively different product she winds up with.

The motive of the capitalist in engaging in the circuit of capital is the increase of wealth represented by the surplus value. The motive of the consumer in entering the commodity circuit is the increase in utility from consuming a range of products better suited to her needs than the range she can produce herself.

In his earlier work on political economy, Marx starts his analysis of capitalist production and society with the circuit of capital. He realized, however, that the circuit of capital already presupposed a complex set of social concepts and institutions: the exchange of products on markets, private property in labor-power and other inputs to production, and money. In a bid for the respect of the German philosophical community, Marx began Volume I of *Capital* with three chapters in which he presented an analysis of these institutions that underly the circuit of capital. These chapters are both too long and too short. They are a notoriously confusing and abstract introduction to the critique of political economy, and in that sense too long. But at the same time they raise a host of important and complicated issues, many of which they do not resolve completely, and in that sense are too short.

6.2.2 The Commodity

Use-value and Exchange Value

Marx observes that all human societies expend labor to produce useful products that meet human needs. (These needs may be biologically determined, like the needs for food and shelter, or socially determined, like the needs for musical instruments, sculpture, and religious ritual objects.) In many human societies products are used by the people who produce them directly, or are distributed among a small group through family or kin ties according to custom. The purpose of production is transparent in these cases, since the product is the direct means to the end of satisfying the need.

But in some human societies, of which capitalist societies are an important subcategory, many products are made to be exchanged for other products. (This is the same idea as Smith's division of labor, viewed from the perspective of the products of labor.) Exchange complicates the relationship between production and need. The producer no longer produces to meet her own need directly (or the needs of her family or tribe) but to meet the need of some other person who will be the ultimate user of the product. She plans to meet her need by exchanging the product of her labor for the products she herself will use. Marx's calls products that are exchanged *commodities*. Borrowing potentially confusing terms from Adam Smith, Marx analyzes the commodity in social terms as the unity of *use-value*, that is, its ability to meet the human need of the ultimate consumer, and *exchange value*, that is, its ability to meet the human need of the producer indirectly through its power to exchange for other products. In Marx's view the dual nature of commodities is at the root of the contradictions of modern society.

The Commodity Frontier

People have an ambivalent feeling toward the commodity form of production. On the one hand, it makes possible a division of labor, and provides us with a range of products and standard of living we could never provide for ourselves directly. On the other hand, commodity production *alienates* us both from our own labor, which goes to meet someone else's need, and from those who provide us with our needs, since we interact with them only through the impersonal and antagonistic relations of exchange.

One of the pervasive effects of economic development is the extension of the commodity form of production to embrace more and more aspects of human life. Self-subsistent farmers exchange only a small part

of their product in excess of their immediate needs for a small range of manufactured tools and artifact, and thus largely meet their own needs by their own direct production. With the development of the division of labor, farmers find it more efficient to concentrate on a single cash crop and use the money from the sale of it to meet their own direct needs. But as this happens, people grieve over the loss of the direct, personal, human relationships that mediated the simpler, more self-subsistent system. The commodity form constantly encroaches. House and car repairs, once performed largely by individuals for their own use (and hence not commodities, in Marx's sense) become services offered on the market (and hence commodities). The parent (often a woman) who spent hours preparing meals for her family (producing a use-value, but not a commodity), eventually finds herself working in a fast-food restaurant to make the money required so that her family can eat out several times a week (thus transforming the food preparation into a commodity).

Our ambivalence about the commodity form lies at the root of the fierce public debates about the financing of medical care (increasingly a commodity, but one that people feel particularly uncomfortable in trading purely according to the laws of the marketplace), the legalization of surrogate parenting for money, the sale of body parts, and the acceptability of creating a market for adopted children.

The boundary between commodities and production for use is constantly shifting, and constantly creating new dilemmas and conflicts between the logic of the market and the logic of the direct human relations that mediate direct production.

Exchange Value and Money

Marx argues that *money* in the broadest sense is an outgrowth of the exchange value aspect of the commodity. The commodity's exchange value is its power to exchange for other commodities. Money, whatever its particular institutional form, is the crystallization of pure exchange value, attempting to separate itself completely from any concrete use-value.

This is an extremely plausible conception, but leads to a number of theoretical complications. In Marx's time money was gold or silver, which are commodities in their own right, and have use-value as well as exchange value. For example, gold was used in jewelry and dentistry, because of its ability to meet human needs directly, as well as serving as an abstract repository of exchange value. In fact, the only reason gold can function as money is that it has exchange value itself.

Marx addresses the theory of money through a rather elaborate series of concepts. He points out that in any exchange of products the quantity

of each product represents the exchange value of the other product, or, in his terms, becomes the *equivalent* for the exchange value of the first commodity. When we consider the exchange of commodities in the abstract, each is simultaneously the equivalent of the other. But people typically pick out one commodity to take on the general role of expressing the exchange value of the others, to function as the *general equivalent*. (In modern economic theory the idea of the general equivalent appears as the *numéraire*, a good arbitrarily chosen as the standard in which to express relative prices.) Marx argues that as commodity production takes hold in society, one commodity typically emerges as the *socially accepted general equivalent*, like gold. The state can specify the standard units in which gold is measured (the dollar, pound, franc, mark, or yen), but the underlying laws of exchange determine the actual relative prices of gold and other commodities.

This theory of money is logically very appealing, but poses some puzzles for contemporary monetary systems, in which there is no fixed relation between the unit of money (say, the dollar) and any particular commodity or group of commodities. If we assume, however, that the market assigns a relative value to the debt of the state, either on the basis of the historical drift of commodity prices, or on the basis of rational speculation on the fiscal solvency of the state, the rest of Marx's theory can be applied straightforwardly to contemporary monetary systems.

Once a commodity like gold emerges as the general equivalent, it tends to become the *medium of circulation*, passing from hand to hand to facilitate the exchange of commodities, and the *means of payment*, the ultimate method of settling debts. Because a gold currency is expensive and difficult to maintain (coins are always wearing out and being "clipped") there is a strong incentive to replace gold in the circulation process with cheaper substitutes, such as silver or copper coins, paper notes, or bank deposits, as long as these substitutes can reliably be turned into gold on demand.

Marx analyzes the *quantity* of gold necessary to circulate the commodities in an economy on the basis of completely different principle from his analysis of the *value* of gold. The gold prices of commodities, measured by the price index P , and the volume of commodities being circulated in a year, measured by the quantity index Q , determine the *total circulation* in a year, PQ . The *stock* of gold money necessary to accomplish this circulation, G , depends on the number of times each piece of gold can participate in a transaction in a year, which is called the *velocity of money*, V . Marx's verbal exposition reproduces what in modern economics is called the *equation of exchange*:

$$G = \frac{PQ}{V}$$

The stock of gold required to circulate commodities depends directly on the total circulation, PQ , and inversely on the velocity of money, V . In Marx's theory the equation of exchange determines the quantity of gold circulating in the economy, which is the *endogenous variable*, on the basis of the gold prices of commodities, P , the quantity of commodities circulated, Q , and the velocity of money, V , which are the *exogenous variables*. The modern monetarist *quantity of money theory of prices* views *prices* as the endogenous variable, with the stock of money *exogenous*, a crucially important difference of point of view.

Since the total circulation is always changing as the result of the growth in the volume of commodities circulated, changes in average prices, and changes in financial practices that alter the velocity of money, the stock of gold required for circulation is always changing as well. In Marx's theory *hoards* or *reserves* of gold held outside of circulation provide the reservoir that allows for the constant adjustment of the circulating stock of money to the total circulation of commodities. This theory of hoards bears a close relation to Keynes' theory of *liquidity preference*.

The theory of money, for Marx, is a part of the general theory of the commodity. His unification of the theory of the commodity and the theory of money is one of the deepest and most original of Marx's contributions to political economy.

The Labor Theory of Value

Marx adopts Ricardo's interpretation of the labor theory of value, with some important clarifications. First, Marx recognizes that human labor is not the only source of use-value. To produce useful products, human beings always require some previously acquired means of production (even if it is only a stick to knock down nuts from the higher branches of a tree), and the natural resource base of the earth (the tree itself). The labor theory of value, for Marx, is a theory of the source of exchange value, and thus a theory limited to production for exchange, that is, commodity production. It might be more accurate to say that labor *becomes* the source of value in conditions of commodity production.

Marx's basic picture is that the expenditure of labor on commodities produces (or adds) value, which is embodied in the commodity and manifests itself as exchange value in the form of money.

$$\text{labor} \rightarrow \text{commodity} \rightarrow \text{money}$$

Marx warns us that not all labor creates value, but only *abstract* as opposed to *concrete*, *simple* as opposed to *complex*, *social* as opposed to

private, and *necessary* as opposed to *wasted* labor. Each of these qualifications points to an important aspect of the theory of the commodity.

To begin with abstract labor, the most difficult of these concepts, Marx notes that when we see labor expended it is always some particular type of labor engaged in some particular productive task: metalworking, computer programming, sewing, weaving, spinning, or whatever. Marx uses the term *concrete* for this aspect of labor. Concrete labor is linked to the particular use-value being produced (textiles, steel, computer programs). From the concrete aspect all labor is differentiated into distinguishable types. But in a commodity-producing society, all labor devoted to commodity production has another, common, aspect, the production of exchange value. In this respect all labor is qualitatively the same, since exchange value appears as a uniform phenomenon without particular qualities. Marx uses the term *abstract* for the exchange value-producing aspect of labor. At one level, this is merely a definition. But Marx points out that with the widespread development of commodity production under capitalism, abstract labor becomes a real phenomenon, in statistics, in the market, and in the planning of capitalist producers.

Labor is differentiated not only by its concrete qualitative type, but by its levels of skill, experience and productivity. If we are to regard exchange value as being produced by labor, we must make an appropriate adjustment for these differences. Marx follows, and slightly expands upon, Ricardo in arguing that it is possible to reduce more skilled and more productive, that is, *complex*, labor to a single common denominator, which he calls *simple* labor. Thus an hour's labor time of a highly experienced and skilled metalworker may count as the equivalent of two or three hours of simple labor, and may add two or three times as much value to the commodity being produced. While Marx makes us aware of the need for a system of weights to reduce complex labor to simple labor, he does not actually tell us how to do it statistically. Economists have used two methods to accomplish the reduction of labor to a single measure statistically. The most common weights labor by its wage level, assuming that a worker who is paid twenty dollars an hour is twice as productive as one who is paid ten dollars an hour. The other method creates weights based on objective measures of workers' experience and training, such as their level of schooling, experience on the job, and the like.

The theory of the commodity alerts us to the fact that labor can be expended outside the exchange system altogether, on *private* production, such as house or car repair, childcare, or meal preparation. This labor surely produces use-values, in fact, use-values that may substitute for the consumption of commodities, but it does not produce exchange

value because the products never enter the process of social division of labor. Marx calls labor expended on commodities that are exchanged *social* labor. Clearly private labor does not produce exchange value by definition. The distinction between private and social labor is closely related to the commodity frontier. It raises similar problems for modern national income accounting, which tries to include some private labor (such as the preparation of meals and provision of boarding provided to workers directly as part of their compensation) but not other (such as housework and childcare performed in the home).

Finally, Marx points out that the mere wasteful expenditure of labor in and of itself does not increase the exchange value of the product. A capitalist producer who lavishes unnecessary labor on a product cannot sell it for any higher price than his competitor who achieves the same quality with a smaller expenditure of labor. The exchange value of commodities, in Marx's view, is regulated by the amount of labor *necessary* to produce the commodity using current good-practice technology and methods. Labor expended in excess of this standard produces no exchange value, and is simply *wasted*.

If we can measure the simple, social, necessary, labor time expended in an economy over a year, then the labor theory of value tells us that it is expressed in the money value added to the mass of commodities produced. In terms of the income statement of a capitalist firm, the money value added is just the sales revenue less the cost of raw materials and means of production purchased from other firms, and thus equals wages plus gross profits. (The money value added for a whole economy is closely approximated by its gross domestic product.) The ratio of the money value added to the labor time expended is the quantitative measure of the amount of exchange value labor creates in the economy in a given period.

For example, the GDP of the U.S. economy is about 8 trillion dollars, and the employed labor force of about 125 million persons works an average of 1600 hours per year, the total labor time (making no correction for complex labor) is about 250 billion hours. Thus each hour of labor produces on average about $\frac{\$8 \times 10^{12}}{2.5 \times 10^{11}} = \32 . Marx constantly uses this method of translating from labor time to its money equivalent throughout *Capital*. This *monetary expression of labor time* has the same units as a wage, dollars per hour, but is not the wage. The monetary expression of labor time tells us the whole money value added per hour of labor, but workers, as Marx's theory will emphasize later, get only a part of this back in the form of wages. The average wage is typically only a fraction of the monetary expression of labor time.

Price and Value

This macroeconomic approach to the labor theory of value establishes an equivalent between money value and labor time at the level of the economy as a whole. What about the relation at the microeconomic level, in terms of individual commodities? If the prices of commodities were always proportional to the labor embodied in them, then each commodity would be a scale model of the whole economy, and its value added would be proportional to the labor expended in its production. But as we have seen in our discussion of Ricardo, prices are generally not proportional to embodied labor times for individual commodities.

Marx recognized this point, and commented on it in notes that he wrote before publishing Volume I of *Capital*. These notes were published only after his death in Volume III of *Capital*. In this discussion Marx argues that the deviation of prices from embodied labor times only redistributes the value added among the various commodities produced, without changing the ratio of the money value added to the labor time over the whole economy. This represents Marx's approach to the problem Ricardo tried to solve through the concept of the invariable standard of value. In essence, Marx takes the whole net product of the society as the standard of value, and argues that its value (which is the value added) must express the labor time expended.

(There is an enormous literature on the theoretical problem of the relationship between embodied labor times and prices, and some scholars reject the reading of Marx summarized here. This macroeconomic interpretation of the labor theory of value, however, makes sense of a great deal of Marx's analysis, and provides at least a helpful first step toward understanding Marx's theory.)

The Fetishism of Commodities

One of Marx's preoccupations throughout his intellectual life was to understand and explain the psychological malaise of modern society. In his youth Marx developed the theory of *alienation* to address this question. He addresses it again in the first chapters of *Capital* as the *fetishism of commodities*.

In his early writings Marx argues that people in contemporary society suffer because they have lost control of their creative productivity. They labor, indeed, to meet their own and other people's needs, but without the mediation of any personal relationship. Work, which Marx viewed as the highest and most satisfying achievement of human life, becomes merely a means to an end when the worker sells her labor or its fruits on the market for money to buy her own subsistence or even pleasure.

Instead of garnering the real human satisfaction of meeting another's need, and having the other meet her need directly and personally, thus cementing her ties to the rest of the society, she experiences the division of labor as social isolation and competitive antagonism. Marx attributes the pervasive psychological crisis of contemporary society, its failure to provide a positive unified spiritual and social context for human life, to this situation. Alienation refers both to the social act of giving up the fruits of one's creative potential to others, and thus alienating one's labor, and to the state of mind of that results, a feeling of apartness, distance and loneliness in the midst of social life.

In *Capital* Marx returns to this theme as part of the discussion of the theory of the commodity, with a somewhat different emphasis. He argues that the commodity system (the whole division of labor with its attendant specialization, in fact) is in fact the collective product of the actions and choices of all of us as productive members of society. In fact the division of labor involves each of us in an enormous web of practical reciprocal dependence on other people to meet our needs for subsistence and production. But we perceive this system, which is at heart nothing but our own collective activity, as having an independent existence as an uncontrollable external phenomenon. The system of the market, money, and commodities thus becomes a "fetish," appearing to intimidate and control humanity as an external force.

Marx saws this fetishism as being at the root of the most troubling aspects of modern society. The market and the capitalist system, for example, appear to demand never-ending accumulation and the extension of the commodity form, no matter how much damage the process may do to existing human relations and institutions. We are unable to create social institutions to alleviate poverty and meet basic human needs, despite our immensely expanded powers of production, because the pressure of market competition makes us believe we are too poor. Parents wind up overworking themselves to make money to give their children a better life, all the while depriving the children of the direct comfort and love they crave and substituting alienating gifts of money and commodities for direct human company.

In Marx's view, then, all these deeply experienced and deeply resented wounds to modern humanity are at their root self-inflicted, like the catastrophes that befell the heroes of ancient Greek tragedy. The positive side of this vision is that commodity fetishism, like other damaging but self-imposed human illusions, can be dispelled by confronting it consciously and courageously. Like the terrifying nocturnal ghost conjured up by a fevered imagination, commodity fetishism will vanish into thin air in the daylight of critical awareness and analysis. Marx sees this as the revolutionary task of his age.

Today we tend to interpret commodity fetishism in terms of an excessive value put on material consumption, the worship of money and the things it can buy to the exclusion of the self-development that is our human birthright. This is surely part of Marx's idea: more precisely, materialism and consumerism are symptomatic psychological side-effects of the fetishism of commodities. But Marx urges us to go further and see through the whole system of commodity relationships to a world of real human interaction that lies beyond it.

The theory of commodity fetishism is a brilliant example of one of Marx's characteristic intellectual maneuvers. He continually looks for ways to turn an existing system of ideas and conceptions upside-down (or inside-out) to reveal an entirely other and surprising vision hidden within it. In the case of the fetishism of commodities, the raw material is Adam Smith's already powerful vision of the virtuous circle of division of labor fuelling labor productivity and the widening of the market. Marx rewrites the same material to show us a very different psychological reading of the cycle of accumulation and specialization, and a very different dénouement of its drama.

Chapter 7

Karl Marx II: Capitalist Exploitation and Accumulation

On the basis of his critical analysis of the theory of the commodity and the labor theory of value, Marx turns in Part II of Volume I of *Capital* to the problem that originally motivated him: the explanation of capitalism as a class society in the historical materialist sense.

As we saw, the phenomenal form of capitalism is the use of money to make money, which Marx describes in terms of the circuit of capital:

$$M - C\{LP, MP\} \dots (P) \dots C' - M' = M + \Delta M$$

The capitalist uses a sum of money, M , as capital to purchase means of production MP and labor-power LP , which combine in the production process (P) to form a new commodity C' , which is sold (or *realized*) for more money M' than the capitalist laid out. The *surplus value*, ΔM , is the object of the circuit of capital for the capitalist. The explanation of the source of surplus value in terms of the labor theory of value is Marx's immediate analytical project.

In order to motivate our interest in this question, Marx poses it in the form of an intellectual puzzle. The problem is that the exchange of commodities cannot create any new value according to the labor theory of value. When someone pays more money for a commodity than the equivalent of the labor the commodity contains, value may be transferred from the buyer to the seller, but the seller's surplus value is just equal to

the buyer's deficit. Across the whole commodity system these surpluses and deficits from unequal exchange must cancel out. But we observe surplus value (profits of capitalist firms) across the whole system. Where does this surplus value come from?

Some economists have tried to argue that profits are disguised wages compensating capitalists for their actual contribution to production. Marx argues that the magnitude of surplus value is much too large to be explained in this fashion, and that, in any case, money-lending capitalists, banks and bondholders, contribute nothing whatever to the process of production and still receive surplus value.

Another attempt to explain profits argues that profit is a compensation for the risk capitalists run in investing their money in production. This theory is based on the correct observation that riskier investments usually have higher than average returns. Marx argues, however, that what the risk theory actually explains is the distribution of surplus value among capitalists who take varying degrees of risk, not the existence of surplus value at the social level. Again, bondholders, who take very low risk, typically earn a positive, if relatively low, rate of return.

If we accept, provisionally, the labor theory of value, with all of Ricardo's logic and prestige behind it, how can we explain the emergence of a surplus value in capitalist production? This is the conundrum Marx poses for himself to solve.

7.1 Surplus Value, Labor-power, and Exploitation

Marx argues that the only logical solution to this problem is to find among the commodities the capitalist purchases with his capital one which has the special property that it creates exchange value as the capitalist uses it up in the production process. As the capitalist uses this special commodity, the exchange value created gets added to value of the commodity being produced. If this special commodity costs the capitalist less than the value it has the power of creating, the capitalist is in a position to appropriate the excess as the surplus value, or profit.

The labor theory of value tells us that it is the expenditure of labor that creates value, so the special value-creating commodity must be the *labor-power* of workers, their ability to do useful work in the production process. Marx regarded the distinction between *labor*, the actual expenditure of human effort in production, and *labor-power*, the capacity or potential of workers to do useful work, as his major original contribution to the conceptual apparatus of classical political economy. Both

Smith and Ricardo use the same term, labor, for the input that capitalists purchase on the market and for the activity that adds value to commodities, thus confusing what Marx viewed as the key distinction on which the profitability of capitalist production actually rests. What the capitalist purchases is not labor, according to Marx, but labor-power, which has two important consequences. On the one hand, if the *value of labor-power* is smaller than the value labor produces, the capitalist will reap a surplus-value from production, thus explaining the origin of surplus value. On the other hand, the mere purchase of labor-power does not guarantee that the workers hired will actually expend useful, value-creating labor, which explains the emergence of structures of labor discipline and incentives in capitalist production.

The value of labor-power is the labor-time equivalent of the wage. For example, if the monetary expression of labor time is \$40/hour, and the average wage is \$20/hour, the labor time equivalent of the wage is 1/2 hour: in other words, the labor-power that can expend an hour of useful value-creating labor costs the capitalist the equivalent of 1/2 hour of labor. The difference is the source of surplus value, or profit, according to Marx's interpretation of the labor theory of value.

From this point of view it becomes critical to understand what determines the value of labor-power. Marx gives several different answers to this question in different discussions in *Capital*. In Part II of Volume I of *Capital* he follows the reasoning of Ricardo and Malthus rather closely, arguing that what proximately determines the value of labor-power is the cost of reproduction. In order for workers to survive, regenerate their own capacity to labor, and reproduce, they require a certain amount of food, shelter, clothing, and so forth, which they must, according to Marx, on the whole purchase as commodities. The wage must adjust to allow workers to purchase these commodities (which is in essence Ricardo's and Malthus' theory of wages), and this socially and historically determined standard of living controls the value of labor-power.

Marx points out that in order for labor-power to appear as a commodity widely available in the market, workers have to be free in a dual sense. In the first place, workers have to be legally free to sell their labor-power, which is inconsistent with serfdom and slavery. Thus capitalism is, according to this analysis, structurally hostile to forms of bound labor, and struggles to abolish bound labor, in political contexts like the French Revolution and the American Civil War. In the second place, however, workers will not sell their labor-power on the market if they have their own access to means of production, the tools and raw materials necessary to carry on productive activity. Workers who own their own means of production will prefer to work for themselves and will not become wage-laborers who sell their labor-power as a commod-

ity. Workers then have to be freed historically from access to the means of production, which Marx views as the explanation for the movement to create private property in land in the early modern period in Europe through the *enclosure* of common grazing and forest land, which was traditionally used by peasant families.

The analysis of wage-labor as the sale of the commodity labor-power is Marx's way of viewing capitalist society as a class society in the terms of historical materialism. The point is that the value of labor-power is normally less than 1 in a functioning capitalist society with positive profits. This means that the labor-time equivalent of workers' wages is only a fraction of the labor they actually perform. The capitalist appropriates the excess as profit, or surplus value. Though the capitalist worker bargains as a legal equal of the capitalist employer, the capitalists as a class, through their ownership of the means of production, appropriate the surplus labor time of the society in money terms as profit, and this is the mechanism of the capitalist exploitation of workers. Marx points out that while the mechanism of capitalist exploitation is different from the mechanism of feudal exploitation or slave exploitation, the effect in class terms is the same: the appropriation of a social surplus product by a particular class.

7.1.1 The Components of the Value of Commodities

The labor theory of value, supplemented by the theory of labor-power, implies that at the level of the capitalist system as a whole there is a critical difference between the money capitalists lay out as wages to purchase labor-power and the money they lay out to buy other inputs to production (tools and raw materials). From the point of view of the labor theory of value, the money laid out for raw materials and other nonlabor inputs simply returns to the capitalist unchanged when he sells the produced commodity. As a result, Marx calls the nonlabor component of capital outlays *constant capital* (though a better term would have been *nonexpanding capital*), represented by the mathematical variable c . The money capitalists lay out as wages, on the other hand, returns to them with the surplus value representing the labor expended by workers for which they have received no equivalent in the form of wages. Marx calls the wage component of capital outlays *variable capital* (although a more descriptive term would be *expanding capital*), represented by the letter v . $c + v$ represents the *total cost* of the commodity. The sales price of the commodity includes the surplus value, represented in this system by the letter s (rather than ΔM as in the circuit of capital), so that the whole value of the average commodity is $c + v + s$. The *value added* is just $v + s$, and represents the living labor expended to produce

the commodities over a period.

Several ratios of these components play a central role in the Marxist analysis of capitalist production. The *markup on costs*, q , is the ratio of the surplus value to total cost:

$$q = \frac{s}{c + v}$$

Capitalists are interested in how rapidly their capital investment is expanding, which is the *profit rate*, r , the ratio of the surplus value, s , to the *stock* of capital they have invested at any moment, K .

$$r = \frac{s}{K}$$

Total costs measure the *flow* of capital into the production process over a period of time. The ratio of the stock of capital K to the flow of costs $c + v$ is called the *turnover time* of capital, T .

$$T = \frac{K}{c + v}$$

Taking account of the turnover time, we can write the profit rate as:

$$r = \frac{s}{K} = \frac{s}{c + v} \frac{c + v}{K} = \frac{q}{T}$$

Explicit consideration of the turnover time complicates the analysis, so that Marx and many economists working in the Marxian tradition tend to assume in examples that $T = 1$, that is, that the whole capital turns over once each production period. In this case the profit rate is just equal to the markup.

The capitalist, not understanding that the social source of surplus value is the expenditure of labor alone, attributes the profit to the whole capital stock. This makes sense because of the tendency for competition among capitals to equalize profit rates in different sectors of the economy, which makes it appear that profit arises from capital, not from labor. From a social point of view, Marx argues, the central ratio is the ratio of surplus value to the flow of variable capital, because that represents the division of the living labor time between the reproduction of the workers and the surplus value appropriated by the capitalists. He calls this the *rate of surplus value*, or the *rate of exploitation*, e .

$$e = \frac{s}{v}$$

The markup and the profit rate also depend, however, on the proportion of the total costs represented by variable costs, which Marx represents as the ratio of constant capital to variable capital, c/v , and calls the *organic composition of capital*.

Thus if we want to understand the system correctly from the point of view of the labor theory of value, Marx argues, we must decompose the markup in the following terms:

$$q = \frac{s}{c + v} = \frac{s/v}{(c/v) + 1}$$

7.1.2 The Working Day

Marx uses the metaphor of the *social working day* to explore the issues raised by his class analysis of capitalist society. He asks us to imagine the whole labor time of a society as a single grand working day. (Of course, we can just as well think of a working year or any other particular unit of time.) The labor theory of value postulates that this working day is proportional to the value labor adds to commodities. It is important to see that Marx here implicitly assumes that all production is mediated through the market and takes the form of commodities. To understand several important issues of modern political economy we will have to relax this assumption.

From the point of view of social reproduction, the working day is divided into the labor time necessary to produce the subsistence goods workers require to reproduce themselves, *necessary labor time*, on the one hand, and the labor time devoted to the production of surplus, *surplus labor time*, on the other. From the point of view of the labor theory of value, the necessary labor time corresponds to the wage portion of the value added, and surplus labor time corresponds to the surplus value part of value added. If the social working day is 8 hours, the monetary expression of labor time is \$40/hour, and the average wage is \$20/hour, the necessary labor time will be 4 hours, and the surplus labor time 4 hours. Total value added is \$480 per worker, of which \$240 goes to wages.

In class terms, Marx calls the part of the working day that corresponds to wages *paid labor time* and the part that corresponds to surplus value *unpaid labor time*. He does not mean, of course, that workers get paid wages for only the first 4 hours of their working day: they receive wages for all 8 hours. But the abstract labor time represented by the wage is only half of the labor the workers actually perform.

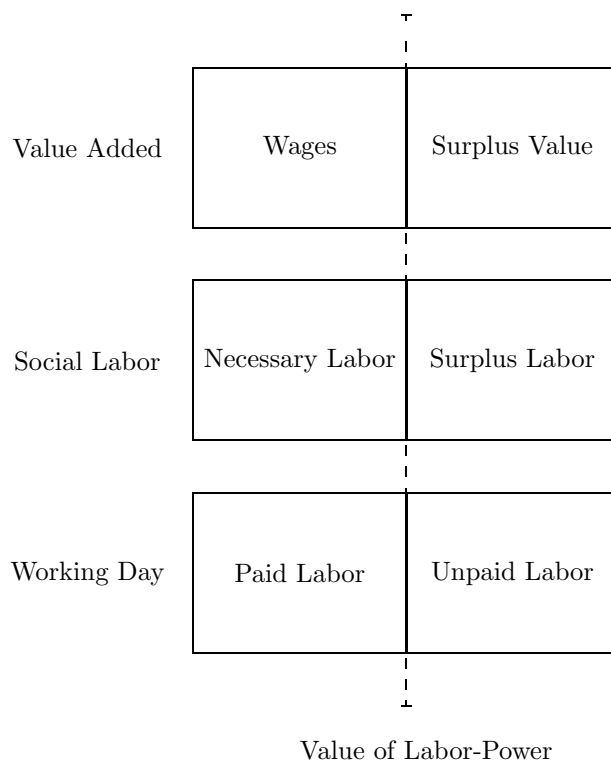


Figure 1. According to the labor theory of value, the value of labor-power divides the value added between wages and surplus value, corresponding to the division of the social labor between necessary and surplus labor and the division of the working day between paid and unpaid labor.

The image of the working day represents the distribution of *waged labor time*, the labor performed in society as the result of the sale of labor-power as a commodity. In reality, however, social labor time includes *nonwaged labor time*, such as housework, and childcare. Thus the whole social labor time is larger than the value added or the waged labor time, and the necessary labor time to reproduce society is bigger than the paid labor time of waged workers.

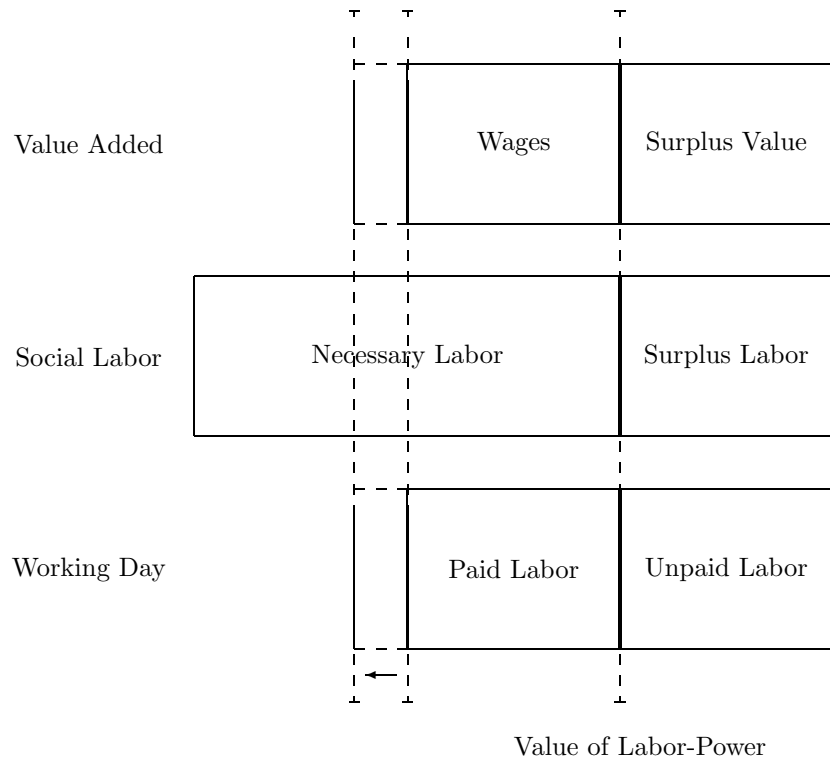


Figure 2. The whole social working day includes necessary labor time expended outside the wage-labor system. The transformation of necessary social labor performed outside the commodity system into wage labor extends the waged working day.

As commodity production spreads through the society, more and more necessary social labor becomes waged labor, extending the waged working day, as Figure 2 shows.

Absolute Surplus Value

Marx argues that the most basic source of surplus value lies in the extension of the working day beyond necessary labor time. In historical terms, capitalism arises in societies with relatively primitive technologies, and in which workers, left to themselves and with access to means of production, will work only the minimum time necessary to produce their subsistence. In order for capitalist production to become profitable, the capitalists have to find ways to induce workers to work longer than the necessary social labor time. Marx calls the extension of the working day *absolute surplus value*.

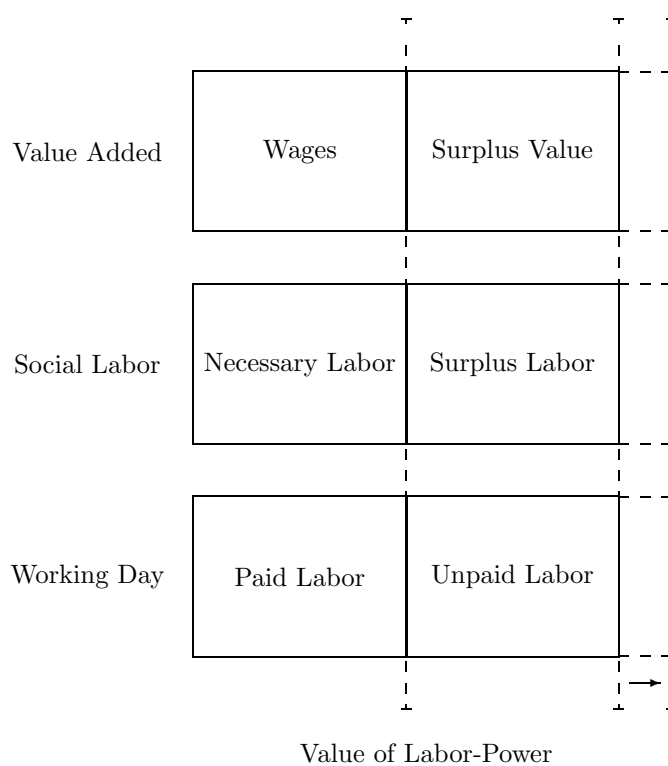


Figure 3. Absolute surplus value is the result of extending the working day without increasing the value of labor-power.

The length of the working day became a major issue in the political class conflicts of developing capitalism. Labor unions and left-wing political groups found strong working-class support for legal measures to limit the working day. Important elements of capital, particularly large enterprises with the most advanced technologies, also supported limits on the working day on the ground that they could absorb the increased costs much more easily than their backward competitors. Wages and hours legislation became a centerpiece of labor policy in most industrial capitalist countries. In the U.S., for example, the limitation on the working day takes the form of a fine employers must pay to workers for

overtime, usually a premium of 50/regular wage (“time and a half for overtime”).

As we have seen, the necessary labor time is actually the time required to reproduce the worker’s family, not just the individual worker. In this perspective the working day is not just the individual worker’s waged labor time, but the labor time contributed by the whole family as the reproductive unit of the working class. Spouses and children’s labor contributes to absolute surplus value as well. One aspect of attempts to control exploitation by limiting the working day was the banning or regulation of child labor and the establishment of legal restrictions on the employment of women. The gender bias inherent in this policy contributed to the marginalization of women in the capitalist labor market. An important goal of feminist political economy has been the abolition of these restrictions on the right of women to sell their labor-power on equal terms with men.

Relative Surplus Value

There are inherent limits to absolute surplus value. Long working days or working weeks sap workers’ energies and lead to lower productivity due to fatigue, inattention, and accident. As these limits become apparent, capitalists turn to other methods of increasing surplus value. If the right-hand limit of the working day is fixed, the only way to increase surplus value is to lower the value of labor-power, that is to move the dividing line between wages and surplus value to the left. Marx calls this movement *relative surplus value*.

While capitalists always have an interest in depressing the value of labor-power by lowering the actual consumption of workers, workers have an equally strong interest in resisting. Reductions in the standard of living of parts of the working class have been an important factor in increasing the rate of surplus value in a few periods of capitalism, for example, in the early years of the industrial revolution in Britain and after 1970 in the United States. But the more common pattern has been for workers’ standards of living to rise with capitalist development, at the same time that the rate of surplus value increases. This is only possible if the productivity of labor is rising so that the labor value of the commodities workers consume is falling. Under these circumstances a constant level of workers’ standard of living can be produced with a smaller proportion of the working day, so that surplus value can increase. The rate of surplus value will tend to increase even if workers’ standards of living rise, as long as the rise is smaller than the increase in labor productivity.

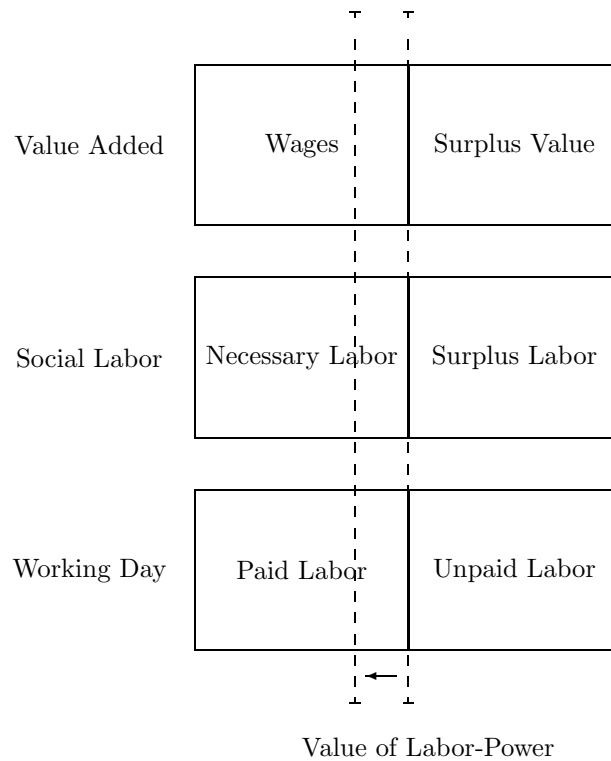


Figure 3. Relative surplus value is the result of reducing the value of labor-power without extending the working day.

Capitalist Competition and Innovation

The phenomenon of relative surplus value is social: it is the result of general and gradual cheapening of the wage goods workers consume. No individual capitalist, no matter how large his capital, can have much direct effect on the value of labor-power. The competition among capitalists, however, manages to direct their efforts toward finding technical innovations that lower the costs and prices of all commodities, and thereby indirectly lower the value of labor-power.

If a particular capitalist is lucky enough to find a technical or organizational innovation that lowers his own costs of production, he is in a position to appropriate *super-profits* above the average profit rate because prices of his commodity will be determined by his competitors' higher costs. These super-profits can be very large, as the experience of innovators in the computer industry has shown recently. The advantage of each innovation, however, wears off over time as competitors discover the same or equivalent cost-reducing methods and adopt them. As all the capitalists in an industry cut cost, competition forces the price of the output commodity down, gradually eliminating the super-profit. After a time, the capitalist finds himself back where he started, with the average rate of profit, and has to search for a new innovation to start the cycle again.

While this process brings capitalists back to their initial competitive position, it has lasting social effects in lowering the costs and prices of commodities. Generalized over the whole spectrum of capitalist production, the search for super-profits through innovation is a powerful engine technical change, leading to labor productivity increases, and promoting relative surplus value.

Marx sees the technical progressiveness of capitalism as its deepest inner nature. His analysis of technical change grows out of Adam Smith's discussion of the widening division of labor. Marx is at pains to show that the process is not a general ahistorical feature of human society, but specific to the competitive mechanisms and social relations of capitalism.

The cheapening of commodities tends to lower the value of labor-power, but the political and social aspirations of the working class constitute an important counter-tendency. As workers seek a higher standard of living and more room for their self-development, they tend to raise the real wage and the value of labor-power. Marx puts much less emphasis on this aspect of capitalist development, because his political rhetoric was based on the claim that workers had nothing to gain from the continuation of capitalist development. But history indicates that the evolution of the value of labor-power and the rate of surplus value are the result of the interplay of both forces.

7.2 Accumulation, Technical Change and the Falling Rate of Profit

The circuit of capital ends with the capitalist in possession of more money value than he started with. Since the possibility of recommitting this money to the circuit of capital and having it expand once again is always present, Marx argues that the typical pattern of capitalist production is one of expansion, or *accumulation*. But the process of accumulation is not a purely quantitative expansion of capital because with each round of the circuit of capital new technologies and organizational forms appear and are incorporated into production. Accumulation is Marx's version of Smith's virtuous circle of positive feedback between the extent of the market and the division of labor. Marx argues that Smith neglects to explain that the whole process is based on the exploitation of labor.

Both Smith and Ricardo believe that the profit rate tends to fall with the accumulation of capital, and Ricardo gives a rigorous explanation of this tendency on the basis of diminishing returns due to limited land and the growth of rent. Marx also believes that the rate of profit tends to fall as capital accumulates, but cannot accept Ricardo's model of diminishing returns, because he believes that it is the inner nature of capital to overcome diminishing returns through technical innovations. He also believes that the rate of surplus value tends to rise with capitalist development because of absolute and relative surplus value.

The rate of profit, in Marx's notation, is, assuming that the turnover time of capital, $T = 1$, so that the rate of profit is equal to the markup:

$$r = q = \frac{s}{c + v} = \frac{\frac{s}{v}}{\frac{c}{v} + 1}$$

Ricardo's theory assumes that the rate of surplus value in industry, s/v , is determined on the extensive margin in agriculture, and falls over time due to diminishing returns to investment in agriculture. It is not hard to see that a fall in the rate of surplus value will, other things being equal, tend to lower the rate of profit. Marx, on the other hand, argues that the broad tendency of capitalist production is to *raise* s/v by lowering the labor value of commodities faster than the workers' standard of living rises. The rate of profit can fall with a rising rate of surplus value only if the *composition of capital*, c/v , rises fast enough to offset the increase in s/v .

In Marx's view this is what tends to happen over the whole sweep of capitalist development. Capitalism starts its historical career by taking over backward and primitive techniques of production developed in

other modes of production. These techniques, handicraft methods using primitive and cheap tools, are productive enough to provide only a small surplus product above the workers' needs of reproduction. Thus s/v is of necessity low initially. On the other hand, the means of production absorbed by these primitive methods are small in quantity and cheap to purchase, so that the early capitalists don't have to invest very much money to get production started. c/v is thus quite low, and the profit rate, even with the very low level of s/v is high.

As capitalism takes over the production process, it begins to mold and shape it through the process of technical innovation. Relative surplus value tends to raise the level of s/v , but the capitalists as a class find that their more advanced methods of production require much larger investments of capital in factories, heavy machinery, and large quantities of raw materials to be worked up into finished products. c/v rises, and, in Marx's view, tends to rise enough to force the rate of profit down over time.

Historical statistics tend to show that Marx's account is correct for some, but not all, periods of capitalist development. In the United States, for example, Marx's pattern of rising s/v , rising c/v , and falling r appears from 1869 to around 1910 and again from 1950 to 1990. But the intervening period, 1910–1950 shows a different pattern in which labor and capital productivity grew equally rapidly and the profit rate recovered dramatically.

7.3 The Reserve Army of Labor

Marx's conception of capital accumulation unifies relative surplus value and the process of technical change that lies behind his account of the falling rate of profit. The theory of accumulation is Marx's synthesis and extension of Smith's vision of the virtuous cycle of widening division of labor and extension of the market. From one point of view accumulation is a quantitative increase in the value of capital, an aspect that Marx discusses as *expanded reproduction*. Expanded reproduction envisions an economic system increasing in scale without qualitative change, so that the techniques in use, the division of value added between wages and surplus value, and the composition of capital are constant, and only the scale of the system changes. But when real-world capitalists accumulate, they seek out new techniques of production, reorganize firms through merger and acquisition, and find new sources of labor-power, and thus introduce qualitative changes into the system. Adam Smith sees one aspect of these qualitative changes in the widening division of labor. For Marx they are all aspects of a single unified process of capital

accumulation.

One aspect of the qualitative changes that accompany the accumulation of capital is fluctuations in the demand for labor-power. Periods when the demand for labor-power rises rapidly as a result of the quantitative increase in capital alternate with periods when rapid increases in labor productivity reduce the number of jobs and employed workers. In Marx's vision these fluctuations in employed labor are accommodated by fluctuations in the *reserve armies of labor*, pools of potential labor-power that absorb unemployed workers in periods of slack and provide supplies of labor in periods of high demand.

The reserve armies of labor thus play a role in regulating the fluctuation of wages in relation to the value of labor-power in Marx's analysis. When rapid accumulation raises the demand for labor-power and competition among capitalists threatens to raise wages, competition from the reserve armies of labor will tend to reduce the pressure on wages. When rapid technical change disemploys large numbers of workers and threatens to create a glut of labor-power, inflows from the reserve armies of labor diminish or reverse, tending to moderate the downward pressure on wages.

Marx distinguishes three categories of the reserve army of labor. The *floating reserve army* is closest to what contemporary economists call *unemployment*: the pool of workers temporarily displaced and actively seeking new jobs. The floating reserve army consists of people who are proletarianized, that is, dependent on wage labor for their reproduction and survival, even though they are not actually employed.

Some part of the floating reserve army never finds work, and falls into the *stagnant reserve army* of labor, proletarians who fail to find industrial employment and fall into lives of crime, prostitution, addiction, and dependency. Only extreme ups and downs of the labor market rarely affect the stagnant reserve army.

Most important to the long term development of capitalism is the *latent reserve army*, the huge mass of potential proletarians that exist at the margins of the capitalist system in traditional agricultural societies and groups of people who don't participate in the labor market within capitalist society. For British capitalism of the 19th century, the latent reserve army consisted in the first place of British landless agricultural workers who were displaced from the rural agrarian economy by the enclosure of common lands and the rationalization of agricultural production, and then increasingly landless Irish agricultural workers. The phenomenon of the latent reserve army continues to be important in the development of world capitalism. During the European "economic miracle" recovery after World War II European countries depended on

flows of migrants from Southern Europe, Northern Africa, and Turkey to meet rapidly growing demand for labor-power. The U.S. economy has drawn on migrations from Europe, the Caribbean and Mexico, Central America, and Asia at various points in its growth. Marx's analysis suggests that these flows of migration play an important role in regulating the fluctuation of wage levels in growing capitalist economies. In many developing economies a crucial role is played by the flow of labor from traditional villages to urban industrial employment. Often these flows start with temporary migration of young men and women who enter the urban labor force temporarily, hoping to amass enough wealth to return to their villages to marry and buy land and start families. Gradually these temporary migrations become more and more permanent as people stay in the cities to marry or because they prefer an urban life style.

In the last forty years women have constituted an important part of the latent reserve army of labor for advanced capitalist economies, as labor force participation rates for women have risen and women have increasingly become waged workers. Contemporary research in economic history suggests that women typically played an important economic role in traditional agricultural societies, and that the period from around 1920–1960 in the United States when many women spent most of their lives in non-wage labor in the household was an anomaly.

It is not hard to see that the great economic drama on the world scale of the next 25 to 50 years is going to be the mobilization of the latent reserve armies of labor in Asia and Latin America through the accumulation of capital in the advanced capitalist countries. How this process will take place, what institutions will evolve to shape it, and what transformations it holds in store for the economies involved are fascinating unresolved questions.

7.4 Primitive Accumulation

Marx concludes the first Volume of *Capital* with a discussion of the historical origins of capitalism, the process he calls *primitive accumulation*. From Marx's historical materialist point of view, the interesting question is how the means of production of pre-capitalist societies, which did not have the form of transferrable private property, were converted into private property that could serve as capital. In Marx's view only a small part of the initial capital of the system was accumulated from the profits of merchants and small early capitalist enterprises. The great mass of the initial stake of capitalism, he argued, had to come from the forcible conversion of means of production created by other modes of production into capital.

Thus primitive accumulation is a powerful lens through which Marx views the history of early modern Europe. As he describes it, the conversion of means of production accumulated under pre-capitalist modes of production to capital was largely the result of violence: wars, revolutions, massacres, expropriations, and religious upheavals. Traditional history reads these events in terms of the consciousness of the individual participants and their ideologies, but Marx sees deeper historical forces knitting them together in a unified pattern.

Many of the processes of primitive accumulation continue to play an important role in the world as capitalist forms of production spread globally. For example, the “green revolution” in traditional agriculture, which introduced new seeds, pesticides, and methods of cultivation into traditional agricultural societies, also has powerful effects on property rights and property distribution. The exploitation of the fertility of the new agricultural methods often requires considerable investment of resources, so that the richest farmers in a village benefit most economically from the transformation, and wind up owning an even larger part of the land, and indirectly controlling a larger part of the village productive resources through loans. The spread of commodities produced by advanced capitalist technology also tends to displace traditional products and producers, and convert their means of production into capital. From a Marxist point of view primitive accumulation is an ongoing aspect of capitalist accumulation, not just a historical hypotheses about early modern Europe.

7.5 The Transition to Socialism

Toward the end of his life, Marx was asked for his comments on a program drafted in the town of Gotha at a conference aimed at forming a unified German Socialist Workers Party from the various fragmented groupings created by the quarrels of charismatic socialist leaders (including Marx). This program is a classic committee production: every other word is a compromise. The drafters tried to find a way to integrate the contradictory slogans of the warring factions. Marx has a good time skewering these various evasions in his comments, which are the only reason anyone even looks at the Gotha program itself any more.

The divisions between Marx and the other socialists, however, are not just intraparty political quibbles, but raise some fundamental issues of political economy. There was (and remains) a strong tendency on the left to see the problem of exploitation under capitalism purely in terms of wages being only a part of the whole value produced. From this point of view, the project of socialist transformation ought to be achievable

by eliminating what Marx calls surplus value (gross profit) altogether, and making sure that the whole value added gets into the hands of workers. Marx always opposed this way of looking at matters from his earliest polemics with other left-wing politicians. Curiously, in this context Marx plays the role of the conservative economist in reminding his fellow-socialists of the reality of budget and resource constraints.

Marx begins his criticisms by reviewing some basic results of his critique of political economy. He reminds us that labor alone cannot produce use-values, that is, concrete products, but requires the services of produced means of production (tools and equipment) and the natural productive powers of the earth. The key point for Marx is that under capitalist relations of production private ownership has transformed the means of production, including land, into capital which can appropriate surplus value. For Marx the socialist project is to change the form the surplus product takes: to abolish surplus value by socializing the surplus product so that it will no longer be appropriated by any particular class.

The Gotha program's somewhat blurry language seems to envision a society in which products still take the form of commodities, but in which workers (the "direct producers") receive the whole value created (the "undiminished proceeds of labor"). Marx argues that this is naive and dangerous thinking because it is unworkable. Such a society would have no surplus product at all, and would be incapable of reproducing itself or advancing. He puts forward an alternative model in which the workers receive only a fraction of the total product, just as in exploitative modes of production like capitalism, but where the surplus value is controlled socially, not privately.

Marx's model has two major features. First, there is some mechanism for securing social control of the surplus product before any claims to output are distributed to workers. Marx refers to the surplus product as "deductions" from the total product, and makes a list of the purposes to which these resources will be devoted: making good depreciation of long-lived means of production, providing for the expansion of the means of production, creating reserves against natural catastrophes and other social risks, supporting those "unable to work" for one reason or another, and funding education and health and other social consumption needs. These social functions are performed privately under capitalist relations of production: capitalists undertake gross investment, and provide insurance reserves, and the taxing of surplus value is the source of whatever spending the capitalist state may make on education, health, welfare, and poor relief.

Whatever is left over after these deductions is to be distributed among the workers. In discussing the principles on which this distribution might take place, Marx produces one of the most fascinating

passages in all his many pages of writing. He begins from the premise of the Gotha program that the principle of distribution should be participation in social labor. Presumably the idea is that workers would earn a claim on the social product proportional to the number of hours of social labor they perform. This harkens back to earlier ideas of “Ricardian socialists” who proposed a “labor money” system in which labor certificates earned by work would circulate as money. This principle appears to be a principle of “equal right”, since every worker would participate in the distribution in proportion to her or his participation in the social labor time. Marx, however, points out the contradiction inherent in this way of thinking about distribution, by saying that this right, like all other rights, is a right of inequality, not equality. The reason is that any distribution based on one aspect of social interaction, like participation in social labor, ignores other relevant aspects of the human situation, and when viewed from other points of view appears unequal. Marx points out that workers who work the same length of time will inevitably differ in other aspects: their age, their skill, their health needs, the size of their families, and so on. Thus an equal distribution based on labor time will inevitably be an unequal distribution when viewed from a wider human perspective. This passage is an important antidote to the uncritical assumption that Marx was a “leveller” interested only in equality of distribution. In fact, he is a sharp critic of principles of equality from a philosophical point of view.

In an effort to explain the tentative nature of his adoption of the Gotha program’s principle of distribution, Marx invokes an even more radical vision of social transformation, a society of productive abundance in which there would be no systematic rules of distribution at all. His summary of this vision, “from each according to his ability, to each according to his need”, has become famous. For believers in socialism it is a ringing affirmation of the goals of communism, while to skeptics it epitomizes the naive denial of the fundamentals of human nature.

Marx then returns to a theme which runs through all his work, that patterns of economic distribution are only a reflection of the organization of production. The unequal distribution of wealth and income in capitalist society, he believed, stemmed directly from the fact that capitalist production is organized as wage labor under the control of the capitalist. The Gotha program’s apparent implicit acceptance of the commodity form of production and the wage-labor form of production (but with a higher wage) seemed to Marx to be hopelessly contradictory.

Marx’s comments on the Gotha program also give us some insight into his ideas as to the actual political process that might achieve the transition to the radical socialist vision he put forward. Marx here refers to the “revolutionary dictatorship of the proletariat” as the transitional

form of political power. It is very difficult for us, after the upheavals of the twentieth century, to put this phrase in anything like the context of the late nineteenth century, but it is important to try. The phrase “revolutionary dictatorship” is a reference to the “terror” phase of the French revolution, in which the revolutionary government gave unlimited police powers to a small “Committee of Public Safety”, which used them to destroy the resistance of the feudal aristocracy (and anyone else who happened to get in their way) through a quasi-judicial campaign of terror featuring the guillotine. On the whole European public opinion in the later nineteenth century grudgingly approved of this phase of the French revolution as an unpleasant but necessary episode in the democratization of European society. In using the phrase, Marx links the project of revolutionary socialism with the broader movement of democratic revolution that constituted (and still constitutes) the core of the modern vision of political evolution. As Marx saw it, the historical impulse to democracy could not in the long run stop with the realization of limited political democracy and citizen rights while economic inequality continued to worsen under capitalist social relations of production. Thus Marx adds the “of the proletariat”, to specify the content of the revolutionary dictatorship. In his view the transition from the bourgeois private control of surplus through the exploitation of labor to a socialization of surplus product would require the use of the most extreme measures of political struggle that Europe had witnessed. This is a chilling and fateful foreshadowing of the travails of the twentieth century.

The general outlines of Marx’s vision of socialism are clear enough. He distinguishes the concept of surplus product from surplus value, and distinguishes the solvable problem of getting rid of surplus value and the exploitation of workers from the impossible problem of doing without a surplus product. He makes strong arguments for the necessity of a thorough-going transformation of the organization of production to support this transformation in the form of social surplus production. In the background of Marx’s vision is the desirability of maintaining high levels of labor productivity on the basis of advanced technology. His insistence on the need for a social surplus product under social control is realistic, and probably the main reason why Marx’s ideas alone of the nineteenth century socialists posed a credible threat to capitalist society.

But the Gotha program also reveals devastating gaps in Marx’s argument, gaps that grew into some of the worst features of the revolutionary socialist project in the twentieth century. Marx seems completely unaware of the problems of institutional power that are inherent in his brief phrases describing the social control of the surplus product. Who will actually decide how much of the product has to go to gross investment,

to poor relief, to education, and so on? What institutional mechanism will secure the necessary resources and make sure that they are used productively and not squandered in corruption or waste? Who will police the mechanisms of distribution, either the labor-based distribution of the Gotha program socialist phase or the needs-based distribution Marx imagines in a distant communist paradise? Given the need to transform the organization of production to correspond to these social principles of distribution, who will actually run the factories, and make the decisions about what and how to produce that we depend on capitalists or their agents to make? Either Marx had no answers to these questions, or thought that they were trivial and secondary administrative problems that would be solved in the actual evolution of socialism. The experience of twentieth century socialism, however, underlines the critical importance of these abstract questions for the socialist project, and the terrible inadequacy of Marx's analysis to suggest viable answers to them.

Chapter 8

The Marginalist Revolution

One of the most curious turns of events in the history of science is the displacement of Ricardian economics by *marginalist*, or, as it has come to be called, *neoclassical* economics. The battlefield on which these doctrines contend is the theory of value (or price), but much more turns out to be at stake. Where classical political economy is *inductive*, generalizing from real historical experience, marginalism is *deductive*, striving to explain experience within the framework of a set of pre-determined axioms. Where the great themes of classical political economy are dynamic and developmental, bound up with change and development, the great themes of marginalism are static and allocational, bound up with the concepts of efficiency. Where classical political economy conceives of equilibrium as the averaging out of ceaseless fluctuations, marginalism sees equilibrium as actually being attained or approximated in reality. Where classical political economy has strong roots in sociology, and accommodates emergent categories like class, marginalist economics roots itself in utilitarian philosophy and admits no social category that transcends individual action, or the simple combination of individual actions. Where classical political economy sees market relationships as expedient means to the end of national wealth and prosperity, marginalism sees market-determined allocation as an end in itself.

This story is all the more curious because marginalist doctrine sees itself as an extension of Ricardo's logical method and of his theory of rent. Marginalism, however, rejects the labor theory of value despite Ricardo's strong adherence to it as the only logical basis for economic reasoning.

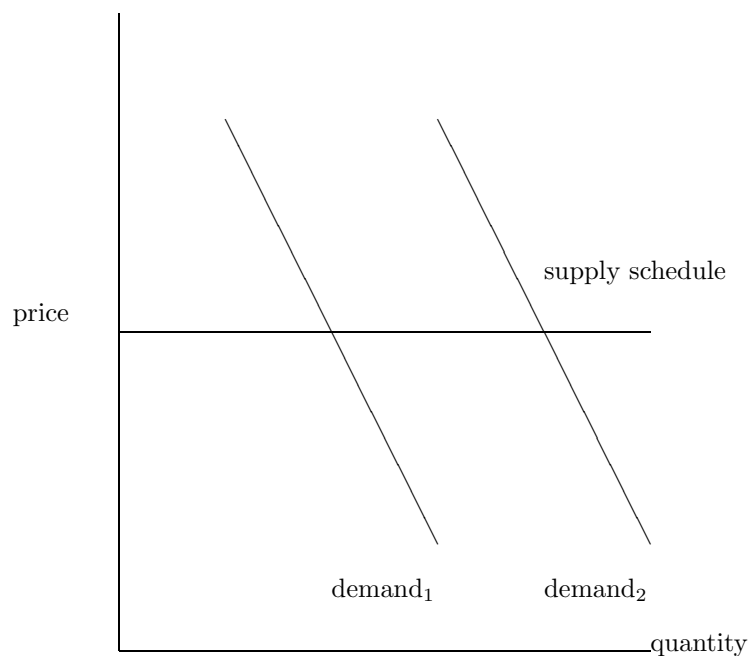


Figure 1. The labor theory of value sees prices as determined by costs. In the case of commodities with a horizontal long-run supply schedule, there is no rent, and price does not vary with movements of the demand schedule.

The labor theory of value is at its root a *cost* theory of price, in which relative prices are determined by the relative costs of production of different commodities. If costs are independent of total output, as they are in the long run in an industry with constant returns to scale, so that the long-run supply curve is horizontal at the level of the minimum long-run average cost, then relative prices are independent of demand, as in Figure 1.

As a result of this general “vision” of the economic process, the Classical economists were not very concerned about demand as a determinant of price. (Recall that Ricardo explicitly excepts goods, like rare paintings, whose price depends solely on their scarcity, from the general principles of value determination through labor time.) They did recognize that the usefulness or use-value of a commodity is a precondition for its having exchange value, but also pointed out that the overall usefulness of commodities had no correlation with their value or price. The most famous expression of this point of view is the “diamond–water” paradox: water is much more useful and necessary to human life than

diamonds, but in normal circumstances in temperate climates, water has a much lower exchange value than diamonds.

In the Classical view, diamonds were costly because it took a great deal of labor to produce them owing to their low geographical density. Water is cheap (in temperate climates) because it requires relatively little labor to secure a water supply from springs, streams, or wells. Presumably (though as far as I know no Classical economist directly addressed this question) the Classics would predict that water would be expensive in the desert, because it would require a lot of labor to produce or transport water to the desert.

8.1 Jevons and Marginal Utility

The marginalist “revolution” begins with the desire to offer a more adequate theory of the role of demand in the determination of market price than the Classics put forward. Jevons’ “breakthrough” was his realization that *marginal utility*, that is, the usefulness of an increment of the commodity over the amount an individual is already consuming, is very different from the *total utility* the individual gains from the consumption of the commodity. Thus relative prices may be quite disproportionate to ratios of total utilities, but still proportionate to ratios of marginal utilities.

In fact, as Jevons reasoned, a rational utility maximizing individual apportioning a fixed quantity of a resource among competing uses will begin by assigning the resource to the highest utility use, and continue until marginal utility in that use falls to the level of marginal utility in the next best use. Then the agent must apportion the resource between the two uses to keep their marginal utilities equal (but presumably falling as more of the resource is applied) until the marginal utility of the third-best use is reached, and so on until the resource is exhausted.

A good example is individual allocation of *time*. Everyone has an absolutely limited amount of time in a day, and has to allocate this limited resource among various uses: sleep, eating, study or work, exercise, quarreling, romance, and so on. From the marginalist perspective each individual starts by allocating time to the most vital use, say, by sleeping. At the point where eight, or seven, or six hours, or less are devoted to sleeping, the individual may feel that the marginal utility of an extra ten minutes of sleep is no longer higher than the marginal utility, say, of eating. The first ten or twenty minutes devoted to eating may lower the marginal utility of that activity to the next most pressing use, say, studying for a test in a course. A similar story can be told about the allocation of money income or wealth.

Throughout this process of allocation, the marginal utility of the scarce resource in all the uses to which it is being put must be equal, or else the agent could increase her total utility by reallocating the scarce resource from a low to a high marginal utility activity. Thus Jevons arrives at his law of equalization of the “final degree” of utility.

This way of looking at human affairs lends itself easily to the employment of calculus, which here enters into an intimate relation with economic theory. One can write the allocation problem as a constrained maximization problem in calculus. Suppose that x_1 and x_2 are the amounts of a given resource x to be allocated to two activities. Then, writing $u(x_1, x_2)$ for the total utility the individual gains from the allocation, the problem is:

$$\max u(x_1, x_2)$$

$$\text{subject to } x_1 + x_2 = x$$

The necessary condition for a maximum for this type of problem, in the case where both $x_1, x_2 > 0$ at the maximum point, as can be proved using the technique of Lagrange multipliers, is, using the notation $\partial u / \partial x_1$ for the derivative of the utility function with respect to x_1 , holding x_2 constant:

$$\frac{\partial u}{\partial x_1} = \frac{\partial u}{\partial x_2}$$

If this condition is not satisfied, you can increase the level of utility by shifting the resource from the use with lower marginal utility use to the one with higher marginal utility.

Jevons then shows that this general principle can be applied to the case of a limited money income, m , where the two uses are spending income on two commodities:

$$\max u(x_1, x_2)$$

$$\text{subject to } p_1 x_1 + p_2 x_2 = m$$

Then the mathematical conditions for maximization require that the marginal utilities of a dollar spent on each good be equal. Recognizing that a dollar spent on a commodity with price p buys $1/p$ units of the commodity:

$$\frac{\frac{\partial u}{\partial x_1}}{p_1} = \frac{\frac{\partial u}{\partial x_2}}{p_2}$$

or

$$\frac{\frac{\partial u}{\partial x_1}}{\frac{\partial u}{\partial x_2}} = \frac{p_1}{p_2}$$

Thus Jevons argues that exchange on markets where there is a single price leads to the equality of ratios of marginal utility to ratios of price. This doesn't prove, of course, that marginal utility ratios determine price ratios. In fact, the setting of the argument assumes that prices are already given.

The vision of the marginalist approach is that actual market prices in real economies are exactly analogous to the ratios of marginal utilities that an individual equalizes in making a rational allocation of resources. Thus the quantity of the various commodities has to be taken as given, so that their relative scarcities can determine marginal utilities and hence price.

One difficulty the marginalist point of view encounters in developing this vision is that an economy consists of many competing individual maximizers, who may have different utility functions. The marginalist position, however, is that the economy, despite being made up of many different individuals, acts in essence *as if* it were a single individual maximizing a single consistent utility function by allocating a single pool of scarce resources. The arguments supporting this assertion are responsible for much of the conceptual and mathematical complexity of marginalist economics. One short-cut, which neoclassical economists frequently take, is to assume that all the individuals in society are exactly alike, so that they can be reduced to a *representative agent*, and then to work out how the representative agent would allocate the existing stocks of commodities, and what marginal utilities (whose ratios will be interpreted as market prices) will result.

We can see immediately that the marginalists are talking about *market prices*, not *natural prices* in Classical terms. We can also see that the most congenial setting for the marginalist theory of price is the short run, in which stocks of commodities are given, rather than the medium or long run, in which the stocks of commodities will change as the result of production and consumption.

We can also see immediately that from the marginalist point of view all resources are either fully employed or not scarce. As long as a resource can add to utility in some use or other, the marginal utility of its use all of it will be used. Another way to put this is to say that from the marginalist perspective unemployed resources have to have a zero price. Still another way to put the point is that any resource that has a

positive price must be fully employed, unless something is preventing its application to its next best use. Yet another way of putting this implication is that all resources that can pay their own costs of employment will be employed. These are simply consequences of viewing society as one big rational individual allocating scarce resources among competing ends. The view that resources must either be scarce, fully employed, and commanding a positive price, or abundant, only partially employed, and with a zero price, is very deeply tied up with the marginalist vision, but is incompatible with the view, for example, that some workers are involuntarily unemployed in recessions or depressions. It is, however, quite consistent with Say's Law, since it implies that resources like labor that are displaced from one use (say, by foreign competition) will be transferred to their next best use rather than left unemployed.

Discussion Questions

Is the Marginalist theory of equalization of ratios of marginal utility to market prices inconsistent with the Classical theory of the determination of natural prices by cost of production?

What are the most important differences in the basic assumptions of Jevons and Ricardo in their discussion of value and price theory?

What kind of existence does "utility" have? Is it directly observable in any circumstances? If it is not directly observable, how could we (or Jevons) know that it exists?

If a socialist society could determine the utility function of a typical member of the society, should it allocate resources so as to equalize their marginal utilities in various uses? Why or why not?

8.2 Menger and Factor Prices

Carl Menger applies the logic of marginalism to the problem of input prices. For Menger, inputs are "higher order goods", which are valued not because of their direct utility to a final consumer, but because of their indirect usefulness in the production of consumable goods. Menger thus sees a chain of valuation leading from final goods, which are valued according to the principle of marginal utility, back up the chain of production.

At the top of the chain the ultimate inputs to production, like land and labor, are valued according to their scarcity. Thus Menger views these highest order goods as fixed in supply, with completely inelastic

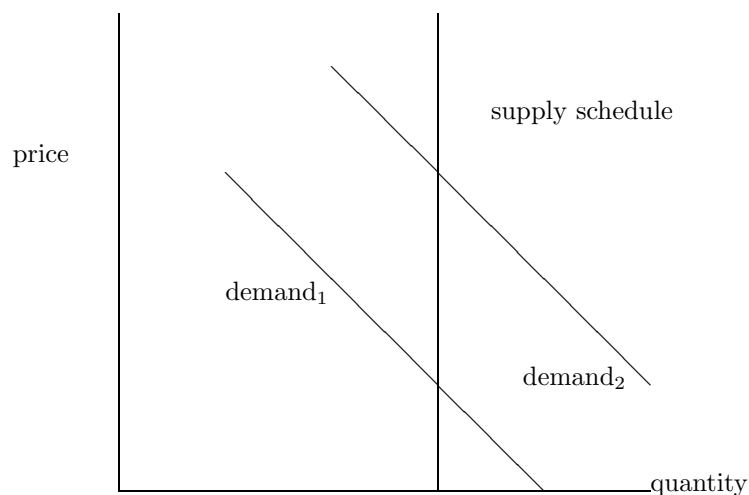


Figure 2. The marginalist theory of value sees factor prices as rents. In the case of inputs with a vertical supply schedule, the indirect demand for the factor determines its rent.

supply curves, and their prices as being determined essentially like rents in Ricardo's theory.

Menger's argument underlines the basic strategy of the marginalist theory of value, which is to link the price of goods to their absolute scarcity. The marginalist theory therefore requires, logically, that the total available supplies of inputs to production be known before prices can be calculated. This key postulate of marginalist theory is often left implicit in discussions of the way supply and demand determine equilibrium prices.

In the case of labor, the marginalist view requires us to think of a fixed maximum labor supply that each individual controls and potentially puts on the market. Since people do not actually sell the maximum possible amount of labor-power, the marginalists regard individuals as effectively "buying back" some of their own labor time, paying the market equilibrium wage rate, to be used as "leisure", that is, non-wage activities. Leisure, as we have seen, includes a number of non-commodity mediated activities, like bearing and rearing children, and household maintenance. The demand curve that determines the wage as a rent includes this theoretical private demand for leisure as one of its components.

At first glance the idea that there is a fixed amount of every economically relevant good at any moment in time appeals to common sense,

but it runs into some perplexing problems when we try to make the marginalist theory operational. For example, exactly how do we determine the total supply of labor in the U.S. economy, which we would need to do in theory to predict the real wage level (assuming that we already knew the utility functions of consumers)? Do we include teen-agers and retired septuagenarians? We know that higher real wages in the U.S. will tend to increase documented and undocumented migration. Do we then have to include all the potential labor supply that might move into the U.S. market? In using the marginalist theory, labor economists resolve these questions by one or another set of relatively arbitrary assumptions, because the theory itself cannot give much guidance.

Discussion Questions

What is the relation of the marginalist theory of pricing to Ricardo's exclusion of rare paintings and books from his labor theory of value?

Compare and contrast the marginalist and Classical theories of labor supply.

8.3 Clark and Distribution

John Bates Clark uses the marginalist approach to factor pricing to discuss the determinants of the distribution of income. Clark's aim, as he makes clear, is not just to explain, but also to *justify* the distribution of income that results from the market. He sees profit and wage rates as the outcomes of basic economic laws that are imposed on society by scarcity. In Clark's mind, the rule that each factor receives the value of its marginal product turns into the principle that each factor receives returns in proportion to its contribution to production.

Later neoclassical economists have recognized the fallacy in Clark's interpretation of marginal products, though their understanding of this subtle point does not always trickle down to what students are actually taught in microeconomic theory courses. The point is that there is no way to determine the "contribution to production" of any one input in a complex production process which requires all the inputs. Take away all the labor, or all the capital goods, and you reduce production to zero, so it appears that each factor actually contributes the whole product. Marginal products at best are a way of *imputing* the value of the product among the various inputs, and there is no particular moral argument that the owner of a factor with a high marginal product *deserves* a higher factor price.

Clark is particularly interested in using marginal productivity theory to explain and justify profit flows in capitalist economies as reflections of the “marginal product of capital”. Clark reasons that an individual small firm (or capitalist) is too small to influence market wages and prices of capital goods. As a result, the firm can price out any technology at current market prices, and choose the lowest cost technology available. In doing this, it appears to the firm that wages and capital costs are different inputs to production. The firm may choose a technology which uses more labor and less capital, measured as the value of the costs of the capital inputs, or one that uses less labor and more capital. In choosing the lowest cost technology the firm can be seen as equating the value marginal products of labor and capital to the the wage and the average profit rate.

Clark then wants to turn this argument around in the typical marginalist way, and argue that it implies that the wage and profit rate are determined by the scarcities of labor and “capital”. He views profits, like wages, as rents in the Ricardian sense. (Neoclassical economists often call profits *quasi-rents*, acknowledging that the capital stock changes over time, but is fixed at any moment in time.) This argument has led to a great deal of controversy, which reached a peak in the 1960s and 1970s in what is called the *Cambridge capital controversy*, in which a group of Cambridge, England economists led by Joan Robinson, argued with a group of Cambridge, Massachusetts economists led by Paul Samuelson and Robert Solow over whether Clark’s theory was consistent in real-world settings where there are many different kinds of capital goods. The problem is that in considering the choices of the individual firm, Clark takes the prices of all the various capital goods as given, which seems justifiable, given the assumption that the firm is a relatively small part of the factor markets. This reasoning establishes the equality between the wage and profit rate and the value of marginal products of labor and capital. In this context, however, given market wages, prices of capital goods, and average profit rates determine the marginal products of labor and capital as a result of cost minimization. But when Clark tries to turn the equation around, and argue that marginal products of capital and labor determine equilibrium profit and wage rates, he fails to consider the issue of the determination of the prices of the various capital goods. Joan Robinson argued that these are given from the point of view of the individual firm, but determined within the system for the whole economy, so they cannot be taken as given in determining wages and profit rates. Furthermore, as the prices of capital goods vary, the same physical collection of capital goods (factories, machines, and so forth) will represent different amounts of “capital”, that is, the value of capital, in Clark’s sense. Thus, the Cambridge, England critics established, it

is not possible to speak of a given amount of “capital” whose scarcity determines the profit rate as a quasi-rent in a real world economy.

The Cambridge, Massachusetts side of this debate eventually admitted that Robinson was correct in pure theory, but most neoclassically trained economists continue to use the concept of “capital” as a scarce input to production, and most undergraduates are taught to think of the profit rate as being determined by the marginal product of “capital”. At the most abstract level, neoclassical *general equilibrium theory* attempted to dispense with the concept of “capital” by studying equilibrium with an arbitrary number of specific capital goods, each of which has its own quasi-rent. This leads to a very complex theory which has its own problems, particularly in the treatment of time.

Discussion Questions

Marxist critics of marginalism have argued that it is “apologetic” in that it provides rationale and justification for exploitation in capitalist societies. The defenders of marginalism respond that marginal products are the actual forces determining factor prices in real-world market economies. What arguments do you see on each side?

How would Ricardian and marginalist political economy differ in policy terms, for example, over social welfare programs like the Poor Laws?

Can marginalism provide a complete and consistent theory of prices without the concept of “capital” as a factor of production?

Would it make sense for individual enterprises in a socialist society to consider the marginal product of capital in relation to its cost in choosing technologies? Would a socialist economy have to set wages equal to the marginal productivity of labor?

8.4 Marginalism and Social Welfare

The marginalist revolution, in addition to its claim to overturn the labor theory of value, and cost of production theories of value in general, has also led to a fundamental change in the analysis of economic policy and the relation of the state to the market. This change is a shift in focus from capital accumulation and growth to utility maximization and production efficiency as the aims of economic policy.

Adam Smith’s critique of the mercantilists was that in putting one asset, the national gold stock, at the center of policy, they supported

policies that increased the stock of gold but reduced national net worth at market prices. The neoclassical economists turn the tables on Smith by arguing that the real end of economic activity ought to be consumer satisfaction, or utility, not net worth at market prices. Just as there are cases where maximization of the gold stock is opposed to maximization of national net worth, there are situations where maximization of national net worth at market prices may not maximize consumer satisfaction. Neoclassical economics describes these situations as cases where *social* and *private* cost diverge. A typical example is an unpriced environmental externality, like air pollution. The pursuit of national net worth at market prices may lead to the proliferation of polluting industries. The typical consumer may find herself worse off as a result: the increased wage and dividend income from the industrial development may not compensate her for the health and comfort lost to severe environmental degradation.

The idea that the end of economic activity is the satisfaction of individual consumers is deeply rooted in the structure of marginalist thought, which sees subjective utility evaluation as the regulating factor of price and value. This leads neoclassical economics to quite a different style of analysis of policy problems from the Classics.

For example, Ricardo's advocacy of free trade was based on his desire to lower wage costs, raise the profit rate, and promote capital accumulation and growth. Neoclassical economics, on the other hand, advocates free trade as a means to increased efficiency in the allocation of resources, that is, increasing the subjective utility of at least some individuals without reducing the subjective utility of others.

With this foundation, neoclassical analysis is not committed to *laissez-faire* policy: it supports intervention in cases of monopoly, incomplete information, and externalities. Since it is very hard to think of a real-life economic transaction that meets the stringent requirements of perfect competition, complete information, and full pricing of all consequences, neoclassical economics opens the door to widespread government intervention.

Adam Smith urged thrift on his students as a path to greater national wealth. Neoclassical economics, on the other hand, is neutral on the question of individual saving: the individual should make her own choice as to the allocation of income between current and future spending. If private utility-maximizing decisions lead to low saving and low growth, that is just the efficient allocation of resources from a neoclassical point of view, and there is no reason to intervene to alter the private decisions. (If there is a big externality to saving as the result of the division of labor, as Smith seems also to believe, that would be an argument for pro-saving intervention from a neoclassical point of view.)

The original utilitarian basis of marginalist economics offered a strong argument for the redistribution of income from the rich to the poor. This argument is based on the idea that economic policy should maximize the sum of all the utilities of the individuals in society. Most utilitarians believed that the marginal utility of income to the rich, who have a lot of income, is lower than the marginal utility of income to the poor, who don't have very much, so that the total of social utility will be increased by shifting income from the rich to the poor.

Modern neoclassical economics mostly rejects this utilitarian analysis of income distribution on the ground that it is impossible to make objective comparisons of utility across individuals. The upshot of this doctrine is that economics can only recommend *Pareto-improving* changes in allocation, that is, changes that make some individuals better off without making anyone worse off. Unfortunately, very few real-world political economic issues offer clear-cut opportunities for Pareto improvements, which greatly limits the influence of neoclassical theory on policy.

Discussion Questions

What political point of view does marginalism fit with most naturally?
Is it inherently radical, liberal, or conservative?

Compare and contrast the Classical and neoclassical economists' view of the social good.

Compare and contrast Classical and neoclassical arguments for *laissez-faire*.

Is neoclassical economics actually the economics of socialism?

8.5 Marginalism, Classical Political Economy, and Time

While the advocates of neoclassical doctrine argue that marginalism displaced classical political economy simply because it is a better or truer or more general theory, matters are not actually so simple. There are many phenomena, for example, class conflict, social distribution, population growth, and capital accumulation, that the Classical model addresses more directly and with more insight than the neoclassical point of view. The marginalist notion that prices are always reflections of scarcity appears in some lights to give a more coherent and general

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theory of price than Classical cost-of-production theories, but there are some severe problems with this claim as well.

The marginalist point of view has difficulty accommodating time as an element in human affairs. Once we think of a real economy, we notice that *expectations* about the future play a key role in determining the utility and marginal utility of current goods, on which the marginalist theory of price depends. The value of a piece of land, for example, depends not just on what it can produce this year, but what crops might be planted on it in the future, and what technologies might be developed to cultivate it. The valuation of current assets through expectations establishes the budget constraints for individuals, and thus underlies their demands for current goods and services. The apparent advantage of the marginalist theory is that it gives an unambiguous theory of price as determined by relative scarcity, but the demands that represent scarcity are themselves highly dependent on expectation. Without a theory of expectation, the marginalist theory of price is incomplete.

One formal response to this problem, which has been frequently adopted in the neoclassical economics literature, is to imagine that there are markets pricing all potential goods and services for the entire future. The existence of such markets would restore the determinacy of the neoclassical theory, at least at an abstract level. Unfortunately we know that in reality, even with the recent proliferation of financial assets, the spectrum of existing markets falls far short of the range necessary to fill in this gap in the theory. One response to this observation is the assumption of *rational expectations*, the postulate that individuals act *as if* they had the knowledge of future prices and contingencies they would require to make coherent demands in the present. The implausibility of these assumptions is one of the weak points in contemporary neoclassical doctrine.

Time is clearly also an underlying issue in the contrast between neoclassical and Classical points of view in another sense. The Classical economists hoped to deal with time and economic fluctuations through the concept of long-run averages of price (Smith's natural prices). The neoclassical point of view, on the other hand, resolutely takes the short-run as the focus of its analysis, and tries to explain what the Classics would call market prices. Neither of these analytical strategies seems completely adequate to deal with the complex, time-bound character of human economic life.

Perhaps economics is at a point somewhat analogous to physics in the early period of quantum theory, where ideas of *duality* seemed to be the only way to reconcile contradictory aspects of physical reality. Light was viewed in some contexts as a wave, and in others as a particle, for example. In the absence of a compelling synthesis of the long-run

and short-run perspectives, and a coherent treatment of the problem of expectations, perhaps we had better keep both Classical and neoclassical analyses in mind, with the idea of choosing the appropriate perspective for whatever problem we face.

Chapter 9

John Maynard Keynes and the Stability of Advanced Capitalism

We will not review Keynes' substantive theories of aggregate demand and liquidity preference in detail, since these ideas are covered in depth in most Macroeconomics courses. After a sketch of Keynes' life and the historic crises of world capitalism through which he lived, we will look at some of the central points on which Keynes differs from the Classical and neoclassical economists we have read so far: his rejection of Say's Law, and the implications that has for laissez-faire; Keynes' analysis of labor markets and unemployment; the role of money, uncertainty and expectations in Keynes' vision of the functioning of capitalism; and Keynes' prophecies on the long-term fate of industrial capitalism.

9.1 John Maynard Keynes

John Maynard Keynes (to distinguish him from his less famous economist father, John Neville Keynes) was born in 1883, the year Marx died, into an academic family of moderately prosperous background in Cambridge, England. Keynes was a bright but somewhat lazy young man, who entered Kings' College Cambridge in the first years of the 20th century at a time of considerable intellectual ferment. He spent a great part of his life involved with Kings' College in on way or another.

The religious, philosophical and moral certainties of Victorian society were crumbling under the pressures of Darwinian evolution, the

emergence of mass society, and nationalism. Keynes was at the center of a group at Cambridge strongly who were strongly critical of Victorian orthodoxy in their personal and political lives. This group became part of the Bloomsbury circle whose artistic and literary work, as well as unconventional sexual and personal behavior left an indelible mark on 20th century sensibility. Keynes was a central member of this group, a close associate of Lytton Strachey, Virginia Woolf and her sister, and Duncan Grant. Keynes was an active homosexual as a student and young man, but later married a Russian ballet dancer and lived with her quite happily until his death. The critical animus of the Bloomsbury group against Victorian moral orthodoxy is echoed in Keynes' devastating critique of Victorian financial and economic orthodoxy.

Keynes was recruited by the British government during the First World War to help it manage the immense financial problems the war created, a task in which Keynes showed resourcefulness and creativity amounting to genius. Since his social circle tended to be pacifist and critical of the war, Keynes' deep involvement in the financial management of the war created severe moral conflicts for him. Keynes, however, clearly liked the influence and power that came with participation in the inner circles of government. After the war he was a key member of the British delegation to the ill-fated peace conference at Versailles. He was convinced that the hard-line policy of forcing the Germans to pay for the costs of the War through reparations pushed by the French was infeasible and would lead to a politically and economically unstable future for Europe. After the conference Keynes made himself famous by publishing a brilliant and harsh book, *The Economic Consequences of the Peace*, putting forward these critical prophecies.

After the War, Keynes returned to Kings' College as a don (but never Professor), and was at the center of British economic scholarship during the 1920s and 1930s. He invested the endowment of Kings' College with great success, making it rich, and made, lost and recovered a considerable fortune for himself by speculating in foreign currency markets (especially against the German mark). During the 1920s Keynes wrote a series of books and pamphlets on monetary and macroeconomic issues. The British economy fell into stagnation with chronically high unemployment after 1926 when Winston Churchill, then Chancellor of the Exchequer, decided to return the pound to convertibility to gold at its pre-war parity. Keynes was bitterly critical of this decision, which he estimated would require a 20% deflation of money wages and prices in Britain.

In the early 1930s Keynes concentrated his efforts on writing *The General Theory of Employment, Interest and Money*, the most influential work in economics certainly of the first two-thirds and probably of the whole of the twentieth century.

Keynes returned, despite declining health due to heart disease, to government service during the Second World War, and, after negotiating the first post-war loan from the U.S. to Britain to aid British recovery from the war, served as the British government's representative to the Bretton Woods conferences that established the International Monetary Fund and the World Bank. He died in 1946.

9.2 World Capitalism in Keynes' Time

Keynes' adult life spanned a period of wrenching crisis for the world capitalist system centered in Europe. The legacy of 19th century expansion was a fierce competition among the European powers for colonies in Africa and Asia and world markets. This competition set the stage for the catastrophe of the First World War, which destroyed a generation of European youth along with the autocratic and undemocratic monarchies of Russia, Germany, Austria and the Ottoman Empire. The world financial system changed dramatically during the War, as nations discovered the immense flexibility and power inherent in central banks at the same time as they abandoned the gold standard that had regulated international trade and investment.

Although the major preoccupation of economic policy after the First World War was to restore the pre-war gold standard system and the financial and economic stability it had seemed to confer, world capitalism was rocked by one extreme crisis after another. In the early 1920s Germany was racked by an unprecedented inflation as the result of speculation (by Keynes, among others) against the German currency and the political inability of the Germans to cope with the crushing burdens of reparation payments. When the German currency was stabilized, Britain's decision in 1926 to return to pre-war parity for the pound created labor unrest and long-term stagnation in the British economy. A few years later in 1929 the U.S. economy entered a sharp recession which developed into a catastrophic depression with substantial unemployment, deflation, and financial destruction. Throughout the 1930s world capitalism was struggling to manage the social, political and economic strains of the Depression, which came to an end only with the outbreak of the Second World War and the associated military buildup.

The themes of Keynes' major work are marked by this unusual period in capitalist development. In retrospect it appears that the inter-war turmoil was an unusual break in the pattern of capitalist economic development, but people at the time assumed that the problems they were experiencing were inherent in capitalist development and would recur. One reason for the moderation of these problems of instability

after the Second World War was the presence of institutions and ideas, including not least Keynes' theory, invented to deal with the crises of the inter-war period.

To contemporary observers, laissez-faire policy seemed to be unable to cope with the problems of advanced industrial capitalism. Without the anchor of gold, speculation in currencies seemed constantly to produce pressures for inflation or deflation in national economies which destabilized them politically and led to chronic unemployment. The forces leading to classical equilibrium appeared to be weak or inoperative for much of this period. Many people during this crisis argued that socialism along the communist model of the Soviet Union was the only workable alternative. Keynes was a strong critic of central-planning socialism, and aimed rather at reforming capitalism to make it function better through a great expansion of the economic role of national governments and central banks.

9.3 Say's Law and Laissez-Faire

Keynes begins *The General Theory* with a critique of Say's Law. His rejection of Say's Law has far-reaching implications for his position on laissez-faire.

Ricardo, for example, argues that supply, the willingness of the owner of a productive resource like labor, land, or capital to offer the resource for productive employment, creates demand sufficient to take the aggregate product off the market. People have to spend their money one way or another, according to Ricardo's reasoning. If they sell their labor-power or capital services, they will turn around to buy consumption goods. If they choose to save rather than to consume, then they will have to buy capital goods through investment with their incomes. One way or another, the demand will be there to buy back what has been produced.

The marginalists see market exchange as essentially the bartering of one good or service for another. In this context it is difficult to distinguish between supply and demand. In marginalist terms labor buys goods, and goods buy labor.

It is vital to remember that the marginalists and the Classical always allow for the possibility that particular markets might not clear, because relative prices have not adjusted to their equilibrium levels. But if some market, say, the market for labor, is in excess supply, some other market, say, the market for commodities, must be in excess demand according to this reasoning. There is always some configuration of relative prices that

will eliminate these sectoral excess supplies and demands. If we observe a market, say, the labor market, with chronic excess supply manifesting itself as unemployment, the cure must lie in encouraging the price in that market, the real wage, to fall. In this framework the ultimate cause of excess supply is always some factor that prevents prices from adjusting freely, and the ultimate cure of excess supply is the removal of these hindrances to changes in prices. In the labor market, these hindrances are legislation like minimum wages, or elements of monopoly power, like trade unions, which prevent the necessary adjustment of wages to clear the labor market.

The reasoning of both the marginalists and the Classical economists rests heavily on the assumption that the monetary and financial mechanisms of the economy work extremely efficiently. Ricardo expresses this idea by saying that "money is a veil," so that it makes sense to analyze economic relations as if labor and commodities exchanged directly for each other. In marginalist and neoclassical economics money is of use only because of what it can buy, and the structure of the analysis presupposes that goods and services, including labor, can exchange directly for each other.

Another way of putting this is to say that the Classicals and neo-classicals think of a world in which the velocity of money is infinite, so that the length of time over which anyone holds financial assets between their sale of one good and their purchase of another is vanishingly short. In terms of Marx's circuit of commodity exchange, $C - M - C'$, the time value spends in the intermediary form of money vanishes. Believers in Say's Law might further argue that even if the velocity of money is not infinite, their analysis will be a good approximation to reality as long as the gap between sale and purchase is short and highly predictable, that is, the velocity of money is high and stable. Then the real economy will act very much as if labor were exchanging directly for goods and goods for labor, and the implications of Say's Law will be largely valid.

Keynes argues that this view, if it ever had validity, is completely out of date in economies with a highly developed financial system. When there are numerous and varied financial instruments, the sale of one commodity may be separated by a long and variable period from the purchase of another. If the lag between sale and purchase lengthens, there may be insufficient monetary demand to buy back all the commodities produced and offered for sale on the market. In this case some firms and households are *liquidity constrained*, rationing their purchases of commodities because they simply do not have the financial resources to buy.

Under these circumstances, the decision to spend money has a kind of *positive externality* for the economic system as a whole. The spender

has the private advantage of purchasing the commodity she wants, but she also increases the money balances of another agent, which permits that agent to make a desired purchase that was previously impossible because of financial constraints. Because individual spenders do not take into account the external impact of their decisions, the volume of spending may be too small to employ all the resources of the economy, and there is a case for government intervention to subsidize spending (or spend itself) to make up the difference.

The rejection of Say's Law, however, has further implications for the general argument of laissez-faire. If the free market is prone to stagnation of demand, and unemployment of resources, many policies that make no sense under the assumption of Say's Law can be defended. For example, Classical and marginalist economists argue that protectionist tariffs, for example, can only divert employment and investment from more profitable to less profitable sectors, and cannot change the total volume of employment of labor or capital. But if Say's Law doesn't hold, then the jobs lost to free trade will not necessarily be offset by other jobs created elsewhere in the economy: a protectionist tariff may increase the wealth of the nation by raising the employment of its labor and capital. Similarly, government spending under Say's Law reasoning can be justified only if the social rate of return to the government investment is higher than the rate of return to private investment. Taxing or borrowing to spend simply to create demand can only reduce the welfare of the society by diverting resources from their most profitable uses. But if Say's Law does not hold, government spending may employ resources that otherwise would be idle, and thus increase the wealth created.

Given the importance of laissez-faire arguments in the political economy of capitalism, and the potential for government intervention in markets, we can see that the ideological stakes riding on the assumption of Say's Law are very high indeed. In fact, most people seem to think about the economy very much as if Say's Law did not hold: they think that jobs lost to international trade are lost completely, and never connect up the general equilibrium effects of market equilibrium in their minds. Economists exist largely to try to educate people out of these prejudices. The appearance of Keynes' economics, in which Say's Law, one of the most fundamental principle of economic analysis, is questioned creates a delicate problem for economic theory as a whole.

In the 1940s, when Keynes' ideas were coming to dominate economic theory in the United States and Britain, this problem was addressed by a compromise, enunciated by Paul Samuelson, among others, called the *neoclassical synthesis*. The neoclassical synthesis held, in agreement with Keynes, that free markets cannot guarantee the full employment of productive resources (or at least not very fast), so that governments and

central banks have to adjust fiscal and monetary policy to ensure full or close to full employment. Once full employment demand has been achieved, however, the basic force of the laissez-faire analysis comes back into play, and markets should be largely free to allocate resources without further government intervention. Ingenious as it was, the idea of the neoclassical synthesis proved to be unstable ideologically. In the 1970s monetarist and rational expectations theory in economics insisted on the need to return to the full Classical and neoclassical orthodoxy, including the assumption of Say's Law, and to a considerable extent hold the high ground in economic theory (if not in economic policy) at present.

9.4 Labor Markets and Unemployment

A great deal of attention has been given to Keynes' analysis of the labor market, and to the category of *involuntary unemployment* he defines in *The General Theory*. The problem is that Keynes appears to accept the conceptual apparatus of the marginalist analysis, but the concept of involuntary unemployment appears to be inconsistent with the marginalist definition of equilibrium.

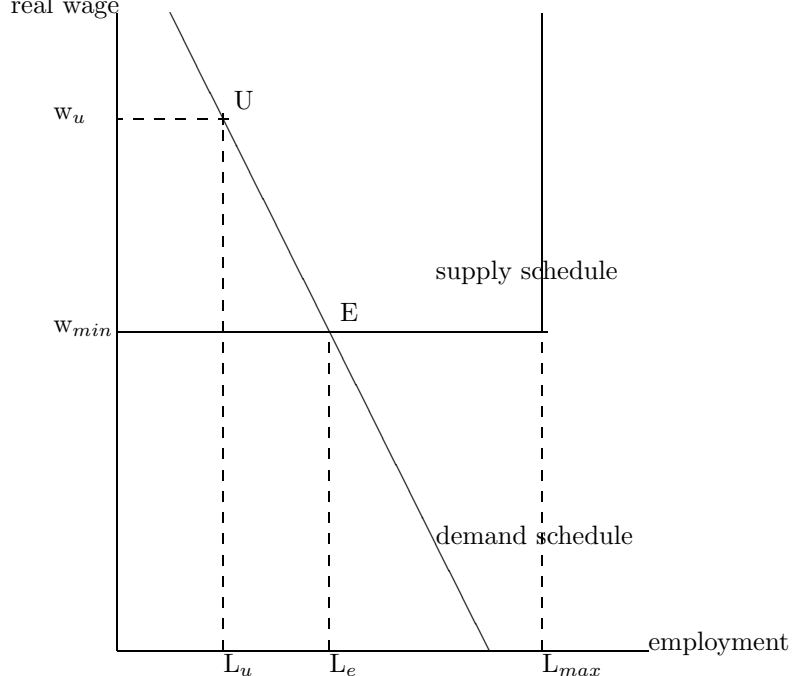


Figure 1. Neoclassical labor market equilibrium occurs at a volume of employment and real wage where the marginal product of labor measured by the demand schedule for labor is equal to the marginal disutility of labor measured by the supply schedule for labor. At equilibrium there may be unemployed workers who are indifferent between working and not working at the equilibrium wage, but they are not involuntarily unemployed according to Keynes' definition.

The marginalist conception of equilibrium in the labor market equates the marginal product of labor in terms of goods and services to the marginal disutility of labor in terms of goods and services. The marginal product of labor is measured by a demand schedule for labor, which slopes downward due to assumed diminishing returns to the employment of labor with a fixed capital stock. The marginal disutility of labor is measured by a supply schedule for labor. In Figure 1, the supply schedule for labor is shown as a horizontal line at the level w_{min} up to a limiting maximum employment, L_{max} , indicating that workers are indifferent between employment at the real wage w_{min} and being unemployed, until the maximum level L_{max} has been reached. Marginalist labor market equilibrium would be at the point E, with a real wage equal to w_{min} and employment L_e . In this type of equilibrium there are workers, represented by the segment of the supply curve between L_e and L_{max} , who would be willing to work at the going wage w_{min} . But these workers are not viewed as involuntarily unemployed, because they are *indifferent* between having a job at w_{min} and not having a job. This is the only type of unemployment marginalist theory views as compatible with equilibrium in the labor market.

Keynes explicitly assumes that his labor market equilibrium must lie on the marginalist demand schedule for labor, that is, that the real wage must be equal to the marginal product of labor, and that the marginal product of labor declines as employment expands with a fixed capital stock because of diminishing returns. But Keynes insists that the labor market may come into what he regards as equilibrium at a point like U in Figure 1, where the real wage exceeds the marginal disutility of labor as measured by the labor supply schedule. In this case all the workers between L_u and L_{max} are not only willing to work for the going real wage w_u , but would be willing to work even at a somewhat lower real wage. Keynes defines these workers as *involuntarily unemployed*.

Marginalists can conceive of the labor market being at a point like U in *disequilibrium*. They would not dispute the characterization of the resulting unemployment as involuntary, though they would prefer to speak of an *excess supply* of labor at U. But they believe that at a point like U there are forces tending to lower the real wage. Here is the critical disagreement between Keynes and the marginalists, since Keynes insists

that points like U can represent an equilibrium of the labor market.

To some degree this must be a semantic disagreement, since the marginalist conception of equilibrium is clearly defined and refers to points like E at the intersection of the supply and demand schedules, not to points like U. But Keynes argues that there may in fact be no forces tending to lower the real wage at a point like U. His argument is that the only way workers could respond to the excess supply of labor would be by cutting the *money* wage, since actual wage bargains are made in terms of money, not real goods and services. Keynes agrees that there might be a sharp fall in money wages at a point like U, though he does not think this is a good thing for the economy by any means. (In the early 1930s when unemployment was very high, money wages in the U.S. did drop rapidly.) He argues, however, that cuts in money wages cannot bring about a fall in the real wage, because money wages are such a large part of the costs of production. As money wages fall in the economy, all producers find their costs lowered, and competition will force them to lower the money prices of goods and services in proportion. This, of course, keeps the real wage, which is the ratio of the money wage to the prices of goods workers buy, constant, and leaves the economy at the point U.

Keynes argues persuasively that a downward spiral of money wages and money prices is the last thing an economy suffering from substantial unemployment needs. The deflation of money prices and wages increases the real interest rate and burden of servicing existing debts, and thus may discourage businesses from undertaking new investment, thereby making the liquidity constraints in the economy even more severe. (Of course, the deflation makes the holders of existing debt richer in real terms, and might prompt them to spend more on consumption.) Keynes noticed that organized labor tended to resist cuts in money wages even during periods of substantial unemployment, and argued that this was a good thing, since it tended to stabilize the price level.

Keynes did acknowledge that a fall in money prices and wages might indirectly help to make the economy more liquid if the central bank maintained the nominal quantity of money, since when prices and wages are lower, the same nominal quantity of money represents more purchasing power, and thus relaxes the liquidity constraint on households and firms. But, he argues, this is a very painful and roundabout way to create more liquidity in the economy, since the central bank could accomplish the same thing simply by increasing the nominal money supply.

Keynes argument that the mechanisms by which a fall in money wages could bring about a fall in the real wage are weak and indirect is persuasive, but his claim that points like U can be an equilibrium in the labor market leaves several loose ends unresolved. For one thing, at

point U there does seem to be pressure for money wages to fall, so that U is not compatible with stability of all the important price variables in the economy. Since points like U are clearly not equilibria in the marginalist sense, it would have helped if Keynes had explained better what he meant by an equilibrium. What he seems to have had in mind is a position of the economy in which there is not short-run pressure for a change in the volume of employment, even if there is short-run pressure for a change in the money wage.

The problem of involuntary unemployment continues to vex macroeconomic theory to this day. The neoclassical orthodoxy adopts a theory essentially like that of the marginalists in which involuntary unemployment is incompatible with equilibrium. The extreme form of rational expectations theory asserts that the real economy is also always in marginalist equilibrium, so that involuntary unemployment can never be observed. On the one hand, this discredits economic theory in the eyes of ordinary educated people, because they feel from their own experience and observation that there are times when they or others would like to work at the going real wage or even somewhat below the going real wage, and cannot find jobs. On the other hand, it requires the rational expectations theorists to find an alternative explanation for the business cycle fluctuation in the level of unemployment consistent with the assumption that the labor market is always in equilibrium. One explanation that has been proposed is that actual unemployment is really disguised employment, in that the unemployed are voluntarily staying out of jobs in order to search for better ones. Another argument is that when real wages fall in recessions employment falls because workers voluntarily withdraw from the job market to wait until the real wage recovers. (There is undoubtedly some truth in this, since labor force participation rates fall in recessions, at the same time that unemployment rates rise, but this idea doesn't explain the rise in measured unemployment of individuals who are actively seeking work.)

9.5 Expectations and Money

Keynes sees a close relation between the monetary character of the industrial capitalist economy and the essential indeterminacy of the future path of real economies. The motivation for a firm to undertake production and thus to hire labor and buy inputs depends on its judgment that it will be able to sell the product at a profit. Industrial capitalism requires investors to risk large sums of money on projects whose ultimate profitability will not be known for many years. In Keynes' view the proximate cause of economic activity is *expectation* of profit. But the

future for human beings is always uncertain, so that undertaking production or long-term investment requires that capitalists confront and evaluate their uncertain prospects.

Neoclassical economics argues that the evaluation and allocation of risk is the function of freely operating asset markets. The paradigmatic case of market allocation of risks for neoclassical economics is *insurance*. A group of wealth-holders facing risks, like fire, that are statistically predictable but individually random can pool some of their wealth into an insurance fund and compensate the members that actually experience losses. Neoclassical theory views all risk as being of this statistically predictable character, and sees the continuing development of financial markets as the best way for the economy to cope with risk.

Keynes wrote an influential book on probability theory in his youth, and had distinct views on probability and risk management. He emphasized the difference, also noted by other economists such as Frank Knight, between calculable and therefore insurable risks, and unresolvable uncertainties about which we can form no coherent statistical opinion. He argues that while financial assets and markets can allocate insurable risks, much the more important economic risks are unresolvable uncertainties which financial markets may in fact make worse. The problem is that macroeconomic uncertainty is largely *endogenous* to the economic system, not *exogenous* like the risk of individual death or fire. For example, the risk that an economy will plunge into recession does not arise from uncertainty about external factors like weather, but from uncertainty about the interaction of capitalist expectations. If everyone comes to believe that a recession is imminent, they will reduce their investment expenditure and there production levels, thereby reducing incomes and making the expectation come true in a self-fulfilling way. Since the recession is not the manifestation of calculable risks, but of essentially incalculable dynamic interactions of human beings, asset markets cannot allocate or hedge this type of risk.

Furthermore, Keynes argues that there is a considerable danger inherent in entrusting the allocation of investment entirely to financial markets. When financial risk is calculable, there is a statistical basis on which to estimate the fundamental value of an asset. When the risks are incalculable, on the other hand, there is no rational basis on which to value assets, and market valuations can swing wildly with fashion, herd instincts, and panic, destabilizing investment and the real economy in the process. Keynes argues that in this situation the financial markets are like a type of beauty contest run by British newspapers in which the aim is not to choose which entrant is most attractive, but which one will get the most votes from the public. To guard against the instability of financial markets Keynes recommends a “somewhat comprehensive

socialization of investment”, assigning to the political process the role of economic balance wheel in relation to financial markets.

In Keynes’ view the widespread use of money and the development of sophisticated financial markets and assets is in part a defensive reaction against the “dark forces of time and uncertainty” on the part of wealth-holders. Real investment requires the commitment of the investor to a long-term, illiquid, and risky prospect. Financial assets, on the other hand, represent more liquid wealth that can be sold at any moment, and allow the wealth-holder to defer the decision as to the ultimate use of the funds involved. But Keynes argues that this is exactly why money and financial assets are potentially dangerous. In times of uncertainty, wealth-holders will tend to flee from real investment into financial havens and money, thus lengthening out the time lag between sale and purchase of real goods and services, and creating a gap between aggregate supply and aggregate demand. While laissez-faire reasoning argues for making as wide a spectrum of financial assets available as possible, and reducing costs of transactions as much as possible, in order to increase the liquidity of the economy, Keynes sees a case for restricting investors’ choices, and forcing them to commit themselves to some form of real investment. He goes so far as to suggest that investment of wealth should be something like marriage: an investor should be forced to choose whichever real investment he or she thought had the best long-term prospects, and stick with it for the life of the project.

9.5.1 Short-term Expectation

In Keynes’ view, producers set production in motion, hiring labor and purchasing inputs to production, because of their *short-term expectation* of demand for the product promises them an acceptable profit. If short-term expectation of demand rises, firms will hire more workers and buy more inputs and increase production. Keynes’ refers to the schedule relating employment and the short-term expectation of entrepreneurs as the *aggregate supply price* of output, though the concept involves an aggregate value, not an individual price.

Short-term expectation is rather rapidly confirmed or repudiated by the producers’ experience in selling the output on the market. Keynes argues that the aggregate demand actually appearing on the market will itself be a function of employment. Higher wage income relieves the liquidity constraint of worker households, and they will spend at least a substantial fraction of the increased wages on consumption goods. Because the fraction of increased wage income spent on consumption, the *marginal propensity to consume*, is less than 1, aggregate demand rises by less than a dollar for each dollar increase in incomes generated

by new production, and there must be a point of intersection between aggregate demand and aggregate supply price representing a short-term equilibrium in which the short-term expectation of entrepreneurs is just

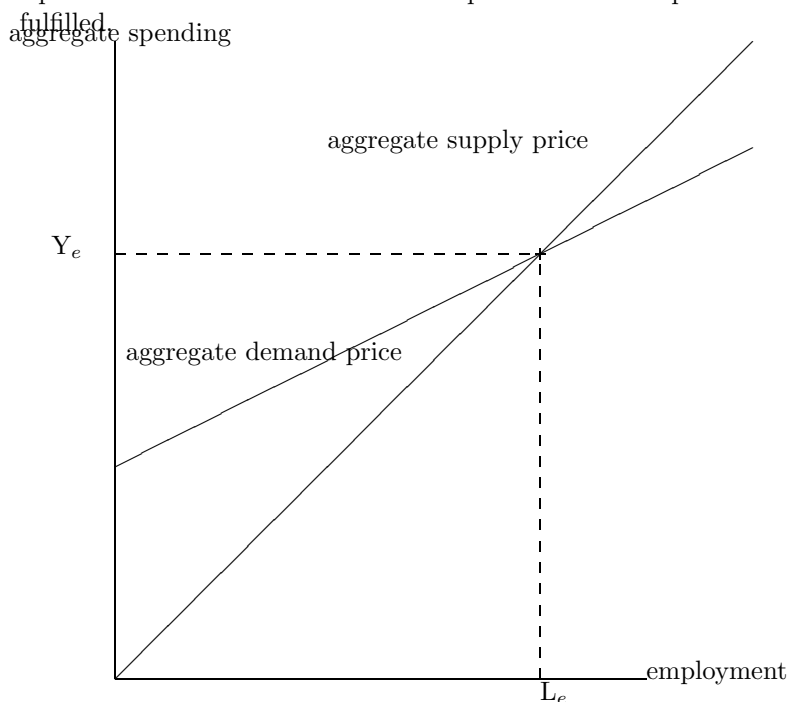


Figure 2. Keynesian short-term equilibrium of income and employment occurs at a level of employment where the demand generated by the incomes arising from production just meet the short-term expectation of the entrepreneurs offering the employment.

Figure 2 shows the familiar *Keynes' cross* representing the emergence of short-term equilibrium at which the short-term expectation of entrepreneurs is fulfilled.

In neoclassical theory, a firm in a competitive market is assumed to be able to sell any quantity of output at the going market price: the firm demand schedule is horizontal, or infinitely elastic, at the market price. Under these circumstances there is no sense in the idea of short-term expectation of a given volume of sales on the part of the individual firm. Keynes' point is that in a liquidity constrained economy the abstraction of perfect competition must break down, and individual firms must see some tradeoff between price and sales. Since this is, in fact, the tradeoff real firms see, Keynes' notion of short-term expectation is more realistic than the neoclassical abstraction of the perfectly competitive

market. But Keynes never explains exactly how he thinks individual entrepreneurs form their short-term expectation in relation to aggregate demand. There is thus a lack of *microeconomic foundations* in Keynes' equilibrium theory. The problem of linking Keynesian macroeconomics to a coherent and persuasive theory of competition among individual firms remains a central unresolved problem in contemporary economics.

9.5.2 Long-term Expectation

The incomes of workers represent only a part of the value created in production, the rest taking the form of profit and interest (abstracting for the moment from rent). A small fraction of wages and a large proportion of profit and rent incomes are saved in the form of money or financial assets. Short-term equilibrium can emerge with a positive level of employment only if there is some level of *autonomous investment spending* to offset saving.

Keynes, having lived through the turmoil of the First World War, the European post-war inflations, and the Depression, viewed the willingness of wealth-holders to make long-term real investments something of a miracle. He argued that what would motivate a wealth-holder to make such an investment was the *long-term expectation* of profitability. The heart of the capitalist system, in Keynes' vision, is the willingness of wealth-holders to speculate on the profitability of the future by making long-term investments. Keynes worried that this speculation depends on a fragile and unstable psychology of investors, who are prone to a kind of manic-depression syndrome, oscillating between extreme optimism about the future, which leads to high investment and a self-fulfilling boom in aggregate demand and employment, and extreme pessimism, leading to low investment, and a self-fulfilling depression of aggregate demand and employment. Keynesians refer to this psychological element in the formation of long-term expectations as the *animal spirits* of capitalists.

For a given state of long-term expectation, however, monetary and interest rate policy can, in Keynes' analysis, have some impact on the actual volume of investment. This is because investors will still measure the prospect of profit from real investment against the interest rate established on safe financial assets like bank deposits and short-term government debt. Keynes believed that the central bank could determine these short-term interest rates by expanding or contracting the reserves of the banking system. The central bank can thus resist a manic phase of animal spirits by raising short-term interest rates to discourage an overly rapid rise in investment spending, and may be able to buoy up a depressive phase of animal spirits by lowering interest rates. Keynes

had considerable doubt, however, about how much stimulus central bank policy could provide to a depressed economy by lowering interest rates, in part because nominal interest rates can't fall below zero, and in part because depressed wealth-holders may have too strong an absolute preference for liquidity.

Neoclassical economics views the determination of investment as arising from futures markets on which capitalists can trade claims to goods and services in the future. If these futures markets exist, then the equilibrium price established in these markets will represent the state of long-term expectation. Furthermore, the same forces that lead to equilibrium in current markets for goods and services will operate in these futures markets. If the demand for factors of production in the present falls short of the supply, according to Say's Law reasoning, it must be because demand for future goods and services (saving) exceeds the supply of future goods and services (investment). An adjustment of relative prices between the present and the future (a fall in the interest rate) should increase investment, reduce saving, and lead to a balanced equilibrium. The problem is that while futures markets exist for a small range of commodities over a short time horizon, they don't exist for major investment projects over a long time horizon. Thus it is not clear that market mechanisms exist to resolve inconsistencies among the long-term expectations of investors and establish an equilibrium. This is a point of deep and unresolved disagreement between Keynesian and neoclassical economics.

Keynes thought that the solution to the inherent instability of long-term expectation was for the government to adopt fiscal and monetary policies which would stabilize aggregate demand, thereby removing the anxiety of investors about the possibility of catastrophic depressions, and to take on a much larger share of the total investment of the economy. Presumably the market alternative would be create more markets for future goods and services so that market equilibrium could do a better job of stabilizing investment planning.

In the years since the Second World War, advanced capitalist economies have indeed worked on both these strategies. Government spending and taxation now represent 30–50% of GDP in most advanced capitalist countries. As a result the multiplier effects of liquidity constraints are sharply reduced, since a fall of output and incomes in recession throws government budgets into deficit, and maintains spending streams. At the same time there has been an explosive growth of financial markets and in the spectrum of available financial instruments, which presumably strengthens the ability of wealth-holders to hedge risks and form a more consistent view of future path of the economy.

But the economic future is not predetermined or completely pre-

dictable, so that it is unlikely that futures markets can completely eliminate the instabilities of expectation Keynes identified. Governments may be no better than markets at predicting the future, but the collective action of society can stabilize some of the key boundary conditions in which capitalist investment takes place, and thus strengthen the animal spirits on which the system rests.

9.6 The Long-run Fate of Capitalism

Keynes' economic analysis focuses on the short-run, and on the problem of the full employment of economic resources. Many of the differences between Keynesian and classical political economic theory are traceable to this difference in perspective. In the middle years of the twentieth century the stability of capitalist growth and the underemployment of economic resources was the overwhelming economic preoccupation of capitalist societies. Today our attention has swung back at least partially to longer-run concerns: economic growth, environmental quality, competitiveness and economic leadership, and distributional equity. To a certain degree we have come to take the Keynesian lessons for granted, and built them into the structures of public finance. They have worked remarkably well, and freed us to think about longer-run issues.

Keynes himself was usually not much interested in the long run. "In the long run we are all dead", is one of Keynes' most quoted aphorisms. He also argued that there was no long run, only a constant succession of short runs, an observation that raises some very deep questions about the operation of complex systems like economies. It may be true that short-run forces determine the actual paths of economies from moment to moment, but it may also be true that there are pervasive corrective forces tending to nudge the short-run outcomes into averaging out to a long-run equilibrium. Many economists believe this in some way or other, but it has turned out to be very difficult to demonstrate the existence of these long-run forces, even using very sophisticated econometric techniques for analyzing data.

Keynes did, in his essay *Economic Prospects for our Grandchildren*, venture some opinions about the long-run fate of capitalism. In his view short-run instability was the main obstacle to rapid accumulation of capital and a correspondingly rapid rise in labor productivity and standards of living. Keynes believed that if aggregate demand could be stabilized for even two generations, say, 50 or 60 years, the advanced capitalist countries would see a huge rise in standards of living as a result of the rapid accumulation of capital. Keynes thought that the accumulation of capital would proceed to the point where the marginal product of

capital approached zero, so that the profit rate and interest rate would also become very low. This would mean the effective disappearance of capitalists as a class without a political revolution, the “euthanasia of the rentier”, in Keynes terms. At very high levels of labor productivity and low profit rates, wages would represent the great bulk of incomes, so that the distribution of income would be much more equal. Keynes believed that future generations would spend this enormous potential wealth less on the increase in material consumption and more on leisure and self-development, ushering in something like Marx’s vision of a world in which a person could be a farmer or fisherman in the morning and a poet or scientist in the afternoon.

There are striking echoes of Ricardo’s stationary state in Keynes’ vision of the fate of capitalism. The decline of the profit rate to zero is a striking example. There are equally striking differences: Keynes seems to have no anxiety about the shortage of natural resources or environmental limits to growth parallel to Ricardo’s focus on rent. There are also striking echoes of Marx’s vision of socialism founded on huge increases in productivity.

We are collectively the generation of Keynes’ grandchildren and great-grandchildren, and 60 years has passed since the publication of *The General Theory*. Some of Keynes’ prophecies have come true. The period after the Second World War was a “Golden Age” of capitalist accumulation, fostered considerably by the stabilizing fiscal and financial policies Keynes recommended. Labor productivity has increased tremendously, as has the standard of living of the advanced capitalist countries.

But somehow these positive developments have not eliminated the conflicts and anxieties of capitalist economic life to the degree that Keynes hoped. The profit rate has not fallen to zero, nor has the euthanasia of the rentier come to pass. The high levels of productivity we have achieved have brought with them high levels of resource depletion and environmental decay. Distributional inequality shows tendencies to rise over time with the globalization of capitalism, rather to fall. These difficulties underline the significance of Marx’s observation that capital is at its root a social relation.