

PREFACE

In the curricular structure introduced by this University for students of Post-Graduate degree programme, the opportunity to pursue Post-Graduate course in a subject is introduced by this University is equally available to all learners. Instead of being guided by any presumption about ability level, it would perhaps stand to reason if receptivity of a learner is judged in the course of the learning process. That would be entirely in keeping with the objectives of open education which does not believe in artificial differentiation. I am happy to note that the university has been recently accredited by National Assessment and Accreditation Council of India (NAAC) with grade “A”.

Keeping this in view, study materials of the Post-Graduate level in different subjects are being prepared on the basis of a well laid-out syllabus. The course structure combines the best elements in the approved syllabi of Central and State Universities in respective subjects. It has been so designed as to be upgradable with the addition of new information as well as results of fresh thinking and analysis.

The accepted methodology of distance education has been followed in the preparation of these study materials. Co-operation in every form of experienced scholars is indispensable for a work of this kind. We, therefore, owe an enormous debt of gratitude to everyone whose tireless efforts went into the writing, editing, and devising of a proper lay-out of the materials. Practically speaking, their role amounts to an involvement in ‘invisible teaching’. For, whoever makes use of these study materials would virtually derive the benefit of learning under their collective care without each being seen by the other.

The more a learner would seriously pursue these study materials the easier it will be for him or her to reach out to larger horizons of a subject. Care has also been taken to make the language lucid and presentation attractive so that they may be rated as quality self-learning materials. If anything remains still obscure or difficult to follow, arrangements are there to come to terms with them through the counselling sessions regularly available at the network of study centres set up the University.

Needless to add, a great deal of these efforts are still experiment—in fact, pioneering in certain areas. Naturally, there is every possibility of some lapse or deficiency here and there. However, these do admit of rectification and further improvement in due course. On the whole, therefore, these study materials are expected to evoke wider appreciation the more they receive serious attention of all concerned.

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Netaji Subhas Open University
Post Graduate Degree Programme
MA in Economics
Course: History of Economic Thought
Code : PGEC-I

First Print : November, 2021

Printed in accordance with the regulations of the Distance Education
Bureau of the University Grants Commission.

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**PG- Economics
(PGEC)**

PGEC-I : History of Economic Thought

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Unit 1 □ Before Adam Smith

Structure

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1.1 Objectives

After reading this unit you will be able to

- know the importance of reading the history of economic thought in general and economic philosophy advanced by early writers before Adam Smith in particular;
- have the concept of mercantilism and identify a variety of views about the functioning of the economic system of the then time;
- learn about Cantillon as an early economic theorist and David Hume as one of the pioneers for the development of modern balance of payments theories; and
- be acquainted with Francois Quesnay as a founder of the Physiocratic school of economics and his Tableau Economique which anticipated input-output

technique; along with A.R.J. Turgot as “one of the greatest scientific economists of all times”.

1.2 Introduction

Descriptions and analyses of economic decisions and the economic organization of society can be traced far back in history; examples can be found in the Bible and in the works of Plato and Aristotle. Production and trade have always been important parts of the life of society, and after social development had reached the stage that allowed time for analysis and reflection, it was natural that some individuals would devote themselves to systematic thinking about issues related to economics. It is not unreasonable, however, to maintain that it was only in the eighteenth century that the field of economics emerged as a separate discipline, a different field of specialization from those of philosophy, history, and law. Adam Smith’s *The Wealth of Nations* (1776) may be the first general work in which the modern economist will find it easy to recognize the field and be able to relate the exposition to the present understanding of economics. In order to give an account of the development of economic thought that may help the student to acquire a broader perspective and deeper understanding of modern economics, it might therefore be natural to start with Smith. But to draw an exact starting line for the history of ideas is obviously impossible. We begin, therefore, with a bird’s-eye and selective view on economic thought before Adam Smith.

1.3 Mercantilism

Mercantilism came from the word “merchants”, which means “traders”. At the end of the 19th century authors of the German Historical School popularized the term “Mercantilism”. Mercantilism was the economic doctrine, also known as the mercantile system, which estimated the wealth of a country by the amount of bullion it contained and viewed trade as a simple matter of gain or loss in which one country could only benefit at the expense of others, to use Mrs. Joan Robinson’s term “beggar my neighbour” policies of trade and warfare. It is usually contrasted with free trade in which proponent like Adam Smith argued that trade could be mutually beneficial to the participants and would maximize outcomes in terms of output and

wealth. Mercantilism has conventionally seen as the dominant economic system of pre-modern economics.

The concept of mercantilism as a characterization of the economic policy regime that dominated Europe in the seventeenth and eighteenth centuries originated with Adam Smith. Mercantilism was a political ideology rather than a theoretical system. Mercantilism is of importance in the history of thought because of its role as a point of reference for Adam Smith and in more recent debates about international trade, where some types of trade policies have been characterized as neo-mercantilist.

Mercantilism was above all a set of economic policy prescriptions for rulers whose aim was to promote their country's interests, its wealth, and power relative to other nations. But the 'country' and 'nation' was in the world of the mercantilists the same. A crucial element of mercantilist thinking was to advocate state regulation of trade to promote wealth and growth, maximize employment, protect the home industry, and achieve a favourable balance of trade with other nations, with low imports and high exports that would imply an inflow of gold and silver from abroad. This can be achieved by introducing tariffs and others, discouraging foreign imports. As Thomas Maan (1664), one such merchant and being perhaps the most famous exposition of Mercantilist principles, put it: "The ordinary means therefore to increase our wealth and treasure is by Foreign Trade." So mercantilism is economic nationalism that seeks to limit the competition faced by domestic producers. The tools of mercantilist policies include the granting of monopoly privileges, regulation of prices and especially tariffs, subsidies and other regulations regarding the conduct of international trade. The chief beneficiaries are the merchants producers who are protected or encouraged under mercantile system.

For the domestic economy to thrive it was essential that there be sufficient money to support the payments system, and money was identified with the precious metals of gold and silver. If the country did not possess its own sources of gold and silver, it would have to acquire them through international transactions, and a central aim of economic policy was therefore to create a surplus in the balance of trade that would imply an inflow of gold and silver from abroad. That is to say, their aim was to accumulate currency within the country by exporting goods to foreign market . As a result capitalist forms of the economy developed during the period 15th – 18th

century. To modern economists this line of thought may appear to be fundamentally wrongheaded if the aim of the government is to promote the welfare of the nation. However, it makes more sense if one reads it as a set of guidelines for rulers who are intent on promoting their country's military and economic power relative to that of other countries.

The ideology of mercantilism was not erected on a unified theoretical basis. It was fallacious. But mercantilists should be granted credit for making a sharp break from the Aristotelian and Scholastic approaches to economic issues. Since Mercantilists were shrewd businessmen and government officials, they were primarily interested in practical applications of their ideas through government policy.

Mercantilism began to decline in the mid-17th century because, as capitalism developed, capitalist production became the main way of increasing wealth. Marx called mercantilism the pre-history of political economy. "The real science of modern economy only begins when the theoretical analysis passes from the process of circulation to the process of production" (Karl Marx, *Capital*, Vol III, p 337). Another reason might be that they failed to recognize that accumulation of money through trade was not the same as wealth creation. Mercantilism was progressive for its time, since it facilitated the development of the first big capitalist enterprises and encouraged the development of productive forces and the victory of capitalism over feudalism. But as capitalism developed, the propositions of mercantilism became outmoded and the bourgeoisie advanced new economic theories based on the requirements of free trade and free enterprise. Physiocracy replaced mercantilism as a trend of bourgeois economic thought.

Among the many authors who discussed economic issues during this period, one can identify a variety of views about the functioning of the economic system. One of the most important of the persons representing this period of transition was Richard Cantillon.

1.4 Richard Cantillon (1680-1734)

Richard Cantillon (1680-1734) was Irish by birth but led a vagrant life in several European countries. He lived for many years in Paris where during the years 1715-20 he accumulated a great personal fortune by trading in stocks and foreign

exchange. Besides his practical activities he also pursued his intellectual interests. He was very well read, and he also found time to write down his thoughts regarding economic life in his book *Essai sur la nature du commerce en general* (*Essay on the Nature of Commerce*), his only book that remained intact after a fire and murder-robbery in his house destroying the rest of his papers. The circumstances surrounding the publication of this book are slightly mysterious. It did not appear until 1755, twenty years after the death of its author, and it has never become quite clear whether the French version is the original one or if it is the transformation of an earlier English manuscript that has never been found.

Cantillon's *Essay* contains several important contributions to economic theory. First of all, he develops a theory about the determination of relative prices. Starting from the assumption that there are two basic factors of production, capital and agricultural land, he argues that the structure of the economy—the allocation of resources between agriculture and manufacturing—as well as the prices of agricultural and manufacturing goods are determined by the technology of production. Cantillon was also interested in the distribution of income between what he saw as the three economic classes in society: landowners, farmers, and workers. In order to explain this distribution he developed a theoretical framework for analysis of the economic circulation in the economy. In this framework the economy's aggregate demand is always equal to the sum of incomes. In terms of promoting a better understanding of the interrelationships of economic life, this was a big step forward relative to earlier writers, and many historians of economic thought have emphasized that Cantillon can be said to have been the first to formulate a general equilibrium model of the economy. The characteristic feature of such a model is that, at least in principle, it describes all relationships between consumption and production in the economy. In modern terminology we might say that he had developed an early version of an input-output model, although in a highly simplified form. He was not himself capable of giving analytical shape to this model, but modern historians of economics have shown that it is possible to construct a mathematical model that represents the verbal reasoning in Cantillon's work.

Cantillon's practical experience from the world of finance made it especially natural for him to reflect on the roles played by money and financial assets in the

economy. In this area also he provided a number of important insights. He distinguished clearly between short-term and long-term effects of changes in the stock of money, and he studied the relationship between the domestic money market, the balance of payments, and the rates of exchange. As we would have said today, he had a clear understanding of the distinction between real and monetary magnitudes in the economy. In spite of this, in his general attitude to economic issues, Cantillon remained a mercantilist; a successful economic policy was, in his view, one that led to a large domestic stock of gold and silver.

A Note on Cantillon effect : Cantillon demonstrated an increase in the money supply would not affect all the industries at the same time and by the same degree, but would be transmitted a range of industries over time by a chain reaction, at the same time altering the structure of profits, and the real wage. This is the so-called cantillon effect. And the effect would later re-introduced by J.M. Keynes in his **The General Theory**.

1.5 David Hume (1711-76)

David Hume (1711-76) is best known as one of the great names in the history of philosophy, with *A Treatise of Human Nature* (1741-42) as his most important single work. But like many of the great Enlightenment intellectuals, he was interested in a number of different fields of study, and in his book *Political Discourses* (1752) he also wrote about economic problems. One would perhaps imagine that someone whose interests lay in the theory of knowledge and moral philosophy would select his economic topics from areas that were somehow related to these, but this is not what Hume did. His most important contributions, which have ensured that his name is still mentioned in modern textbooks, are concerned with monetary theory for an open economy. In contrast to Cantillon, Hume had no practical experience from financial transactions. His analysis was important above all because its simplifications made the theoretical structure of his reasoning stand out much more clearly than in the work of previous authors. This may explain some of his appeal to later generations of abstract model builders.

What is the effect of changes in the stock of money on the real economy? Hume was the first to provide a clear and simple answer: none! Prices, including the prices

of the factors of production such as wages, will be proportional to the stock of money: the larger the quantity of money in relation to the volume of transactions, the higher will prices be. But this cannot possibly have any real economic consequences. Hume compares the effects of different nominal price levels with the transition from Roman to Arabic numerals, which does not affect the elementary principles of arithmetic. So what is the essential role of money? Money, says Hume, is not itself a wheel in the economic machinery of society; it is the oil that makes the wheels turn more quickly—just like the Arabic system makes it easier to carry out calculations. In this line of reasoning we see for the first time the contours of what later became known as the quantity theory of money.

But the simple theory is only valid in the long run. In the short run, according to Hume, the relationship between prices and the quantity of money is more complex, since it takes time before all prices fully adjust to a change in the stock of money. During the process of adjustment there will accordingly be real economic effects of changes in the quantity of money. An increased stock of money will stimulate economic activity, while a fall will lead to a contraction. The best-known part of Hume's theory in this area is his analysis of international adjustment following an increase in the domestic money stock. He assumes that there are two countries, the domestic, or home, country and the foreign country, both of which have monetary systems that are based on gold and whose price levels to begin with are the same. Suppose now that the domestic quantity of money increases, following an increase in the country's stock of gold. This leads to an increase of the domestic price level, which implies that the home country's goods become more expensive abroad, while the foreign country's goods become more competitive in the domestic economy. The home country accordingly experiences a deficit in the balance of trade, which must be financed through an outflow of gold. This means that the quantity of money in the home country falls, while it increases in the foreign country. Accordingly, the domestic price level falls while foreign prices increase. The process will continue until the price levels at home and abroad are once more the same. Hume was not the first to describe this so-called price—*specie-flow mechanism*, but his exposition of it was so clear and pointed that it had a great influence on the thinking of later economists.

That a philosopher like Hume should concern himself with questions of this kind, throws an interesting light on the status of economics, or political economy, at that time. It was not yet recognized as a separate science, and Hume obviously did not feel that he moved outside the borders of “his own field” when he explored this area of the social sciences. Academic specialization was not yet so entrenched that a thinker and scientist endowed with talent and intellectual curiosity could not engage in philosophy (in the more narrow modern sense), history, and political science as well as economics. As a matter of fact, his broad field of interest was one that Hume shared with some of his great predecessors among English philosophers: both Thomas Hobbes (1588-1679) and John Locke (1632-1704) wrote about economic issues. One of Hobbes’s interests was taxation (he argued in favor of taxing consumption rather than income), while Locke among other things was an early contributor to the quantity theory of money and prices.

1.6 Francois Quesnay and the Physiocrats

Francois Quesnay (1694-1774) is one of the most remarkable characters in the history of economic thought. He worked as a physician in Paris, and his reputation was so high that he came to be consulted by individuals of the very highest ranks within the French nobility. In 1749 he took up residence in the royal palace at Versailles, where he became the personal physician of Madame de Pompadour, the Mistress of King Louis XV. He established close contacts with some of the leading intellectuals of the Enlightenment and began gradually to develop an interest in economic questions. His first contribution to the literature of economics appeared in the form of an article in Diderot’s famous *Encyclopedie* in 1756, at the mature age of sixty-two. His later fame rests entirely on his *Tableau Economique* (1759), a sort of tabular construction showing the flows of commodities and incomes in the economy. It is related to the earlier model of Cantillon, but it is more detailed, and Quesnay also made an attempt to estimate the coefficients in the model on the basis of empirical knowledge of the French economy. With a little good will we may thus regard Quesnay as a forerunner both of modern national accounting and input-output analysis and as an early econometrician? He also believed that his tables could be used to analyze the effects of public policy, to the extent that political intervention changed the fixed coefficients on which his model was based.

As a supplement to his tables, Quesnay wrote down a series of “maxims” for economic policy. One of these maxims was that the government must be aware that agriculture was the main foundation of economic wealth. Consequently, a policy that was good for agriculture was also good for France. More influential was another maxim which said that the best economic system that the government could promote was free competition and free trade—“laissez faire, laissez passer,” as some of his disciples expressed it but he gave no justification for this view, nor did he develop a more systematic economic theory to support his maxims. But he became the center of an enthusiastic group of followers, and it was this group of liberal thinkers that became known as the physiocrats and may be the first example of a clearly defined “school” of economic thought. During the 1760s and 1770s this group had considerable influence on economic policy in France and other European countries. Adam Smith visited the group during his stay in Paris in the 1760s, and the discussions that he had with them were clearly important for his own analysis of economic policy in the *Wealth of Nations*.

Evaluations of Quesnay’s importance for the development of economics have varied considerably. Some writers have considered his *Tableau* as an important forerunner of modern general equilibrium theory, and Joseph Schumpeter called him one of the giants of science. Others have seen his efforts more as an interesting but peculiar sidetrack. As an early representative of quantitative economic model building he has in any case secured a name for himself in the history of economic thought.

The celebrated classical economist Piero Sraffa writes in Appendix in his book ‘*Production of commodities by means of Commodities*’ : It is course in Quesnay’s *Tableau Economique* that is found the original picture of the system of production and consumption as a circular process, and it stands in striking contrast to the view presented by modern theory of a one-way avenue that leads from ‘Factors of production’ to ‘Consumption goods’.

1.6.1 A. R. J. Turgot (1727-81)

Anne Robert Jacques Turgot (1727-81) is usually considered to have been a member of the physiocratic school, and at any rate he was in deep sympathy with the liberal economic attitudes of the physiocrats. He studied theology, but he later

resigned from his position in the church and entered the civil service. There he embarked on a brilliant career that reached its peak when he was appointed minister of finance under Louis XVI, the last king before the great revolution. However, his ideas about economic reform, which went in the direction of deregulation and liberalization of economic life, did not achieve sufficient political acceptance, and in 1776 he had to resign after only a couple of years in his ministerial position.

Many of Turgot's writings reflect his preoccupation with concrete practical problems that he encountered in his capacity as a civil servant, and these are of less interest today. But while he was the chief administrative officer of the district of Limoges he wrote a book that is of more general interest. His *Reflexions sur la formation et la distribution des richesses* (*Reflections on the Formation and Distribution of Wealth*, 1766) is said to have originated as a sort of roadmap for two Chinese students, Ko and Yong, who had come to France to study its economy and society. It builds in part on physiocratic ideas, but it also contains parts that are truly original and have ensured that Turgot, in addition to his position in the political history of France, also occupies a prominent place in the history of economics.

The original elements in the book concern the analysis of investment and production, where Turgot moved beyond the basically static analysis in the work of Quesnay and the physiocrats. In Quesnay's *Tableau* it had been assumed that the input of capital per unit of land was constant. Turgot assumed instead that it was variable: saving contributed to capital accumulation, which in turn increased capital intensity and productivity, both in agriculture and other industries. But with increasing capital intensity there will come a decline in the rate of return on new investment. This is an example of a more general law of production, the law of decreasing returns, that Turgot probably was the first to formulate in a clear and precise manner. He writes that to sow seed on an unploughed piece of land in general is a waste, but when it has been ploughed once, the yield increases, and it increases further when the land has been ploughed a second or third time. Up to a certain point the yield will increase more than in proportion to the input of labour and capital, but beyond this point the increase will become less, and the soil will eventually become so exhausted that there will be no further increase in yield.

What would be the optimal use of capital? He argues that the use of capital should be increased as long as the marginal productivity is greater than the rate of interest. The optimum would then be achieved.

In this analysis Turgot is far ahead of his time, but otherwise he did not make any significant contributions to the development of economic theory. He probably had the intellectual resources to do so, but his busy administrative and political life did not allow him the time. To call him, as Schumpeter (1954, p. 247) does, “one of the greatest scientific economists of all times,” is a drastic exaggeration. The scientific contribution that he did make was, however, of great importance for the development that took place with the work of Adam Smith and his successors.

1.6 Conclusion

In what follows is that this unit traces of development of the history economic thought before the advent of Adam Smith down from mercantilism to the physiocratic ideas including great names and their contributions discussed above in this connection.

1.7 Summary

Mercantalism: Mercantilism is a system of ideas and government policies advanced by a series of writers of economic pamphlets, many of them merchants (hence the term) who in the period 1550-1750 advanced theories of international trade, money, prices and employment.

It is actually economic nationalism that seeks to limit the competition faced by the domestic producers. The tools of mercantilist policies include the granting of monopoly privileges, regulation of prices & especially tariffs, subsidies & other regulations regarding the conduct of international trade.

At the end of the 19th century, authors of the German Historical School popularized the term ‘Mercantalism’.

Physiocrats: The leading French school of economic thought which was active in the 1760s and 1770s. Quesnay, Mirabeau and Turgot used the name Physiocrats to mean ‘Lords of Nature’ as they took the view that the economy should pursue its natural course, without the interference of the government. They laid the foundation for classical price theory. Their great invention was that of Tableau Economique.

Adam Smith and Marx articulated that they will never be forgotten. In short, Physiocrats, a school of thought based on the writings of Quesney and other 18th century French economists and philosophers who were strong opponents of government intervention.

Physiocrats saw agriculture as the only productive sector, where the value of agricultural outputs was greater than inputs (and thus was the surplus-producing sector).

The Physiocrats were the first to analyse economic process as periodic.

The policy proposals of physiocrats were based around the ideas of promoting agriculture, by modernizing the sector and increasing its output, sales and income.

Tableau Economique: Quesnay's Tableau Economique is circular flow between farmers, landlords and manufacturers. The landlord in the middle initiates the to and fro of expenditures between farmers and workers by collecting rent from the farmer and spending it on manufactured goods.

Price-specie flow mechanism: A mechanism that demonstrates that an economy aiming for a favourable balance of payments is self-defeating as a natural balance of trade will automatically establish itself. Hume used an analogy to describe 'price-specie flow mechanism': International trade is akin to water in two interconnected vessels constantly seeking a common level'.

1.8 Exercises

A. Short-answer Type Questions

- 1) What is mercantilism? Why is it called so?
- 2) Who are the major writers of mercantilism? Distinguish between earlier writers and later writers.
- 3) What is Cantillon effect?
- 4) Who was Quesnay? What is his Tableau Economique?
- 5) About whom Schumpeter (1954, p. 247) had remarked, "one of the greatest scientific economists of all times."? Why?

B. Medium-answer Type Questions

- 1) What is David Hume's price-specie flow mechanism?
- 2) What was the contribution of Richard Cantillon in the history of economic thought?
- 3) Write down the contribution of David Hume in the history of economic thought?
- 4) What was the contribution of A.R.J. Turgot in the history of economic thought?

C. Long-answer Type Questions

- 1) Why one should study the history of economic thought?
- 2) Why do we regard Francois Quesnay as a forerunner both of modern national Accounting and input-output analysis and as an early econometrician?
- 3) Write down the contribution of Richard Cantillon and David Hume.

1.10 References

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Unit 2 □ Economic Ideas of Adam Smith (1723-90)

Structure

2.1 Objectives

2.2 Introduction

2.3 Wealth of Nations

2.4 Adam Smith's Value Theory

2.5 The Returns to the Factors of Production

2.6 The Invisible Hand

2.6.1 The Invisible Hands and the Market Economy

2.7 International Trade

2.8 The Market and the State

2.9 Economic Growth

2.10 Division of Labour & Technological Progress

2.11 Conclusion

2.12 Summary

2.13 Exercise

2.14 References

2.1 Objectives

After reading this unit you will be able to

- know about Adam Smith's Wealth of Nations;
- also learn about Adam Smith's value theory;
- delve deep into Adam Smith's Invisible hand and its functions;
- learn about Smith's understanding of international trade and his view on role of market and state;
- have an idea of Smith's division of labour and its relation and with technological progress in relation to industrial revolution.

2.2 Introduction

Adam Smith was a Scottish economist and philosopher and leader of the classical school of economics. He was educated at the local burgh school and at Glasgow University from 1737 to 1740. The early stage of Smith's economic theorizing was influenced by Professor Hutcheson Francis. Thereafter, a bad time for him passed by. Returning to Scotland, he successively became the professor of logic and professor of moral philosophy at Glasgow University. His first book, for which for a long time he was chiefly known, was the philosophical treatise *The Theory of Moral Sentiments* (1759), where he discusses the foundations of man's moral attitudes. This book was successful, republished five times in his lifetime. The Book led him to meet Quesnay and Turgot, the prominent Physiocrats. Their influence is evident in his second book *The Wealth of Nations*. The first book advances a view of man as basically a moral and altruistic being, while the second emphasizes self-interest as the driving force behind human action.

Beyond his two great books Smith published little during his lifetime. However, a number of works that were left in manuscript form at the time of his death have later been published, and the edition of his collected works that was published at the two hundredth anniversary of the *Wealth of Nations* comprises six large volumes. His writings span a wide range of topics, but in economics his reputation rests almost solely on the *Wealth of Nations*. It is accordingly this book that we will focus on it in the present unit.

2.3 Adam Smith's Wealth of Nations

An Inquiry into the Nature and Causes of the Wealth of Nations (1776) and four more editions in his lifetime) is a large and wide-ranging work. It contains passages that may well be described as abstract theory, although not in the form of diagrams and mathematics, but as carefully formulated logical chains of reasoning in literary form. It also contains long and detailed descriptions of social and economic institutions in Scotland, England, and the rest of the world. These are based partly

on Smith's own experience from his travels, but to a large extent also on his reading (as when he tells us that Peru is more civilized than Mexico). He also takes the reader on long sweeps through history in order to illustrate his thoughts on economic development. In fact, this highly acclaimed book provided a powerful theory of economic growth (built upon the division of labour principle and consequence of man's desire for betterment which leads to savings which are productively invested), theories of value and distribution and an exposition of libertarian economic policy, which shares much with laissez-faire economics.

The *Wealth of Nations* is divided into five "books." The first contains what we would today call microeconomics or price theory. It discusses the division of labour in a market economy, the formation of prices under competition and monopoly, and the determination of factor prices and the distribution of income. Book II is concerned with capital accumulation and the financial system, while book III is mainly historical, focusing on the development of agriculture in Europe since the time of the Roman Empire. Book IV is mostly about international trade and contains the essence of Smith's criticism of mercantilism. Book V takes up the role of the public sector in the economy, treating taxes and public expenditure both from a theoretical and historical perspective.

2.4 Adam Smith's Value Theory

During the age of the classical economists, price theory, the theory of price formation under alternative assumptions about market structure, was known as the theory of value. The problem that they studied was the determinants of the prices, or values, of different goods and services. A problematic distinction that Smith introduced at an early stage of his theoretical discussion (Book I, Chapter IV) was between *value in use* and *value in exchange*. Water is more useful than diamonds, but diamonds are more expensive; the exchange value of water, which is low compared to diamonds, does not reflect its high value in use. This alleged paradox he did not manage to solve, but he went on to say that his own analysis of prices would be limited to the study of exchange value. Already at this introductory stage of the book we get an indication of what would turn out to be the main weakness of the classical theory of

value: its failure to construct a satisfactory theory of demand and to clarify the role of demand in the formation of prices.

His labour theory of value is nothing but the relative prices of commodities that are determined by the relative amounts of labour needed to produce them. For modern economists this theory seems special in the sense that it makes no reference whatever to demand conditions. But it is straightforward to interpret it in a way that makes it fully consistent with modern insights. A modern textbook exposition of price formation under perfect competition is based on a diagram that shows the price as determined at the intersection of the demand and supply curves. This way of thinking was foreign to Adam Smith, but we can relate his theory to the modern view by imagining that the supply curve, which reflects the unit cost of production, is horizontal. Price will then be determined by the cost of production, while the role of demand is to determine the volume of output. Relative prices will be determined by relative costs of production.

In any society, according to Smith, wages, profits, and rent all tend toward their respective normal levels, and these normal levels are what determine “the natural price.” In his theory of the natural price Smith uses the normal level of cost as a causal explanation of price. As many historians of thought have pointed out, this shows that Smith did not have what we now refer to as a general equilibrium perspective on price determination. In that perspective it makes no sense to say that product prices are determined by factor prices; instead, product and factor prices are mutually dependent on each other.

In the introductory chapter to the *Wealth of Nations* we find a famous analysis of the division of labour in society, a topic that Smith obviously thought to be of great importance since he gave it such a prominent place in the book. The starting point for the discussion is the example of the organization of production in a pin factory. Smith points out that the production of a pin is a complicated and difficult task. A worker without experience from this line of work who had no access to the specialized machinery used in a modern pin factory would find it very difficult to produce a single pin in the course of a day’s work. So a worker needs specialization. In the pin factory, the production of pins has been broken down into “18 separate operations, with each worker specializing in just one or few of them. He noted that

specialization would save time. He also emphasized that division of labour will depend on the size of the market. However, he was aware that workers would become dull through repetitive tasks.

Another connection between demand and prices emerges in Smith's discussion of the distinction between the *market price*— and the *natural price*, as he describes it in book I, chapter VII. The market price is the actual price that prevails in the market at a given moment of time, and this can differ from the natural price both in the upward and downward direction. The market price is determined by the relationship between the quantity that is actually brought to the market and by the demand of those who are willing to pay the normal price; this is called the effectual demand. But the natural price is the central level toward which the market price will continually gravitate.

2.5 The Returns to the Factors of Production

In book I, chapter VIII, Smith begins by pointing out that when we move away from the primitive society of hunters, where each worker is his own employer, most workers will be hired by an employer at a wage they have agreed upon. The level of wages will therefore be determined by the employment contracts. Workers and employers have conflicting interests: workers desire high wages, while employers want them to be as low as possible. But in contract negotiations employers tend naturally to be the stronger participants.

Adam Smith's general theory of the wage structure is that the wages in different professions reflect noneconomic advantages and disadvantages. For example, if one trains to become a shoemaker, it is virtually certain that one will be able to earn one's living by making shoes. But if one is educated as a lawyer, Smith claims, only one in twenty will be able to do well enough to live by it. This theory of compensating wage differentials, as it is generally referred to, has had great influence on later research in labour economics.

2.6 The Invisible Hand

If one were to carry out an opinion poll among economists concerning the most important single contribution of the *Wealth of Nations*, the probability is high that

most of them would say that it is the idea of the invisible hand. No doubt there are also those that imagine that this is the real theme of the book, since many, particularly among those who have not actually read the book, have an image of the *Wealth of Nations* as basically a piece of propaganda for the market economy and a polemic against public regulation and intervention.

There is more than a grain of truth in this. Let us first look at what Smith actually says about the invisible hand. This can be done rather quickly, since it is mentioned only once in *The Wealth of Nations* of nine hundred pages. In book IV, chapter II, we find the central formulation:

Every individual necessarily labours to render the annual revenue of society as great as he can. He generally, indeed, neither intends to promote the publick interest, nor knows how much he is promoting it.... He intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention.

A popular summary interpretation of this statement is that what is best for the self-interested economic agent or individual is also best for society, and that the invisible hand that ensures this is the system of free competition. S. Ahmad in 1990 has identified four functions of the 'invisible hand': to limit the size of the landlord's stomach, to curb the residual selfishness of a landlord, to optimize production and to preserve the natural order.

2.6.1 The Invisible Hands and the Market Economy

The fact that the invisible hand is mentioned only once in *The Wealth of Nations* may be taken as an indication that Smith himself did not regard the formulation itself as quite so fundamental as posterity has done. But this does not necessarily imply that the underlying idea was not central to Smith's way of thinking. In fact, Smith emphasizes that it is not only the case that the invisible hand works for the common good, but also "in many other cases." One example is the following: "It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest." That is to say: producers think primarily of their own interest and not of the welfare of their customers, but it is their self-interest that provides us with the goods and services that we demand.

Thus, in this way, Adam Smith articulates that the invisible hand denotes the way in which the market mechanism (price system) is capable of coordinating the independent decisions of buyers and sellers without anyone being consciously involved in the process. Smith holds that as the 'invisible hand' maximizes individual welfare and economic efficiency it is the automatic equilibrating mechanism of the competitive market.

2.7 International Trade

In Adam Smith's view, free international trade is an important aspect of the system of free markets. In book IV he first examines the view that the wealth of society can be measured by its stocks of gold and silver. In fact, he considers the alternative view that true wealth consists in the stock of real goods.

A policy of foreign trade that starts from the objective of accumulating stocks of gold and silver is therefore likely to lead to results that go against the public interest. Mercantilist foreign trade policies consisted on the one hand in the erection of barriers to imports, particularly from countries where the trade balance was assumed to be negative, and on the other hand in the encouragement of exports either by direct subsidies or by commercial treaties with foreign countries. Smith points out that in all of these cases mercantilist trade policy prevents the market system from functioning efficiently. In the case of restrictions on imports, by imposing a high tariff that prevents the entry of foreign goods into the domestic producers. This will be to the advantage of domestic producers, but not to the country as a whole, for it prevents others from buying the commodities in question from the cheapest source. Thus, deviations from the system of free trade impose costs on society.

2.8 The Market and the State

Adam Smith is a laissez-faire economist. He was an adherent of the view that the public sector ought to be as small as possible. A minimal, or "night watchman," state

would seem to follow from the view of the market as the universally best system for the allocation of resources.

It is obvious that he was against the mercantilists' belief in central planning and market regulation. Smith emphasized the positive aspects of the market economy. In comparison with mercantilist, Smith was a reformer and, as the historian Emma Rothschild (2001) has pointed out, during the first years following the publication of the *Wealth of Nations*, Smith was regarded as a radical.

So what role was there for the public sector to play according to the worldview of Adam Smith? According to him, the state has three functions. First, it is the duty of the state to protect society against violence and invasion from other societies. Second, the state ought to protect each single member of society against injustice and oppression from other members of it. The third duty of the state consists in "erecting and maintaining certain publick works and certain publick institutions which it can never be for the interest of any individual or small number of individuals, to erect and maintain".

Smith's argument is that the market will provide too little of public goods, and the provision of this type of goods must be the responsibility of an agent who can act on behalf of "the great society." This agent is the state. And the state should refrain from interfering with free competition.

2.9 Economic Growth

There have been a number of attempts to formalize Adam Smith's ideas of the growth process in terms of simple mathematical models. Such models are interesting. Smith's analysis of saving, investment, and productivity growth was an integrated part of his total vision of the functioning of the economy. He emphasizes the role of population. Population growth is of central importance for economic development because it implies both more workers and larger markets. That more workers increase the productive capacity of the economy is the more self-evident effect of population growth. The more original part of Smith's thinking in this regard lies in his emphasis on the connection between population growth, the growth of markets, and the resulting increase in the possibilities for the division of labour, such as we have seen

in his generalization of the pin factory example. The link between population, market size, and work specialization is an important explanation of the growth of productivity.

In his view, capital accumulation was a central source of growth in the wealth of nations. But at least as important was the introduction of reforms designed to improve the ability of the market mechanism to direct resources to their most productive use.

2.10 Division of Labour & Technological Progress

Like all social philosophers and scientists, Adam Smith was a child of his time and he was interested to connect division of labour with the technological progress. But the rapid industrial development must have made a deep impression on him and led him to identify technological progress as an important source of economic development.

Somewhat surprisingly, it is difficult to find convincing evidence for this view in Smith's writing. The famous description of the pin factory is actually the only direct reference to modern manufacturing and technological change to be found in the *Wealth of Nations*.

Notable is the fact that the inventor of the steam engine, James Watt, was a personal friend of Smith who could have kept him up to date about technological developments. But what Smith might have heard or seen of the introduction of modern industrial technology cannot have made a very strong impression on him, at least not to the degree of making him incorporate this perspective in his own analysis. The industrial revolution was still, at least as regards commercial applications, in its early phase, and Adam Smith was hardly the only one who did not fully realize the nature of the technological revolution that took place during his lifetime.

2.11 Conclusion

His writings span a wide range of topics including *The Theory of Moral Sentiments* (1759) but in economics his reputation rests almost solely on the *Wealth of Nations*. The book was an enormous success and became one of the greatest

works of Western civilization, and the ideas expressed by him had a long and lasting effect on modern economic theory and policy. The book covers so many areas that have relevance to modern economics; particularly labour economics that the posterity did not hesitate to declare him as the Father of Economics.

2.12 Summary

The Invisible Hand: A force that leads the pursuit of individual self-interest in such a way that it contributes to the common good. Each individual pursuing his or her self-interest contributes to the greatest social well-being. Self-interest and social order are thus reconciled. The quest for individual self-interest becomes the fundamental motive in political economy.

Technological Progress according to Smith: The famous description of the pin factory is actually the only direct reference to modern manufacturing and technological change to be found in the *Wealth of Nations*. Nothing else, though the inventor of the steam engine, James Watt, very much aware of technological progress, was a personal friend of Smith.

2.13 Exercise

A. Short-answer Type Questions

- 1) What is labour theory of value according to classical economists?
- 2) Smith observed the famous diamond-water paradox of use and value— Do you agree? Give reasons.
- 3) What is invisible hand?
- 4) State the four functions of invisible hand.

B. Medium-answer Type Questions

- 1) Make a distinction between the Mercantilist foreign trade policies and Adam Smith's foreign trade Policy?

[Ans: See Section 2.7]

- 2) To Smith, deviations from the system of free trade impose costs on society— Do you agree? Give reasons.

[Ans: See Section 2.7]

3) State Smith's view on economic growth.

[Ans: See Section 2.9]

4) What role was for the public sector to play according to the worldview of Adam Smith?

[Ans: See Section 2.8]

C. Long-answer Type Questions

1) Discuss Adam Smith as one of the early free market philosopher.

2) Write down on Smith's argument for free trade.

3) Write a brief biography on Adam Smith.

2.14 References

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Unit 3 □ The Classical School : Thomas Robert Malthus and David Ricardo

Structure

- 3.1 Objective**
- 3.2 Introduction**
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 - 3.3.1 The Theory of Population**
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- 3.4 David Ricardo (1772-1823)**
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 - 3.4.3 The Theory of taxation**
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3.1 Objective

After reading this unit you will be able to

- know about Thomas Robert Malthus and David Ricardo— two of the greatest names in the classical school;
- also learn specifically about Malthus' short biography along with his contribution onto the theory of population as well as his opinion about Corn Laws, also his deep and intimate friendship with David Ricardo — important from the point of view of the history of economic ideas, and

- delve deep into David Ricardo's theory of rent, trade and last of all, theory of taxation, which have contemporary relevance.

3.2 Introduction

WITH ADAM SMITH we are at the beginning of the stage in the history of economic thought that is commonly referred to as the classical period. Many of the leading economists of this period who took Adam Smith's work as their point of departure show a high degree of similarity both in their analytical approach and in their views on economic policy, and this group of economic thinkers is known as the classical school. However, it should be kept in mind that John Maynard Keynes, in the preface to his *General Theory of Employment, Interest, and Money* (1936), wrote that he would refer to all economists who did not share his own view of the causes of unemployment as "classical." This interpretation was taken up by many of Keynes's followers, but in the present context the meaning of the term is the standard one in the history of economic thought and not that of Keynes.

Thomas Robert Malthus and David Ricardo are two of the greatest names in the classical school, and they were the dominating characters in the community of economists at the beginning of the nineteenth century. They shared many of Adam Smith's views concerning the social benefits of a system of free markets and also agreed with each other on many basic issues in economic theory and policy. But as we shall see, there were also areas where their opinions differed sharply.

3.3 Thomas Malthus (1766-1834)

Thomas Robert Malthus (1766-1834) was the son of a lawyer and country gentleman with strong intellectual interests. The younger Malthus studied science and mathematics in Oxford while at the same time acquiring a broad knowledge of literature and history. After completion of his studies he became a fellow of Jesus College in Oxford, and he was also ordained as a priest in the Anglican Church. His positions both at the college and in the church provided him with a reasonable income and only a modest workload, so that he had good opportunities to pursue his

intellectual interests. In 1805 he was appointed professor of history, politics, commerce, and finance at the East India College, a new institution that had been founded to train employees for the East India Company, the trading monopoly that governed India during a large part of the time of the English colonial rule. Malthus can therefore be said to have been the first professor of political economy or economics in England.

3.3.1 The Theory of Population

Malthus is known for his theory of population growth, which was first presented in his book *An Essay on the Principle of Population* (1798). The full title of Malthus's book was *An Essay on the Principle of Population as it affects the future Improvement of Society, with Remarks on the Speculations of Mr. Godwin, M. Condorcet, and other Writers*. Few books written by an economist have received so much attention and had so much influence. It was an important source of inspiration for Charles Darwin's theory of evolution, and it left its mark on the thinking of several generations regarding the population problem and related issues, particularly poverty and birth control. It came out in six editions during Malthus's lifetime. The most substantial revision occurred with the publication of the second edition, which in many respects must be considered a new book.

Malthus observed that due to rapid population growth, agricultural activity was expanding onto land of less and less fertile quality. He argued that whereas population was growing geometrically of the form 1, 2, 4, 8, 16... meaning thereby that after a certain point there would be insufficient food to meet the needs of a growing population, resulting in starvation and poverty as supply failed to match population growth, creating an upward pressure on prices, while on the other the production of food only grows as an arithmetic series, that is, 1, 2, 3, 4, 5...

Policies to eliminate poverty by means of government subsidies or private charity would only make things worse since, according to Malthus, an increase in well-being of the poorest strata of society would stimulate population growth, further exacerbating the problem of provisioning. Malthus believed that unless population growth could be controlled, poverty was never eradicable. This outlook was one of the reasons economics was labeled the 'dismal science'. In essence, the core of Malthus's theory is that there exists a permanent tension between the availability of food and the size

of the population. That is why, the natural growth rate of population must necessarily be kept down to that of the lower rate of growth of food supply:

3.3.2 Malthus and the so-called Corn Law

Another area where Malthus's participation in the public debate created considerable controversy was the debate about free trade. The free trade issue arose particularly in connection with the so-called Com Laws, which were a central theme in the economic policy debates in England in the early nineteenth century. The purpose of the **Com Laws** was to protect British agriculture by allowing for prohibition on imports when the price of wheat fell below a certain level. The consequence was naturally that this level became a minimum price of wheat, which ensured the profitability of the existing domestic wheat production. Malthus was against the abolishment of the Com Laws. He realized that this went against the principle of free trade that was supported by Ricardo and other economists, but he argued that no principle of economic policy could claim to be universally valid, and that exceptions must be allowed under particular circumstances. In this case, his view was that the Com Laws could be justified by the concern for national security, for it was important that Britain was self-sufficient with com in the case of war. Malthus's position in this controversy further increased his reputation as a spokesman for the landowners' interests and an enemy of the working classes. He protested keenly against this interpretation of his views, and in the fifth edition of his *Essay on Population* he emphasized that his primary goal as regarded economic policy was to "improve the condition and increase the happiness of the lower classes of society" (Malthus 1803; 1992, p. 386.).

Malthus' arguments in favour of Corn Laws were important in the history of economics because of his personal and professional relation with David Ricardo.

The Ricardo-Malthus debates were always theoretically significant and had practical policy implications.

Malthus on Say's Law and His Idea-affinity with Keynes

Malthus opposed what has come to be described as Say's law: that supply creates its own demand. This broad notion has itself been interpreted in several ways. Malthus rejected versions of Say's law that proposed that the demand for commodities

would alone and automatically provide a motive for sufficient investment and production to satisfy such demand, or that investment and production would alone and automatically lead to an adequate demand to absorb supply. He argued that production and consumption were impelled by very different motives. Demand adjusted slowly, according to ‘habits and tastes’ and hence if productivity increased significantly, demand would not necessarily match supply and gluts of commodities might result. Hence advances in demand would not necessarily follow advances in production. Furthermore, with a growth in productive activity the ‘capitalists themselves, together with the landlords and other rich persons’ might ‘save’ ‘from their revenue and add to their capital’ thus withdrawing money from circulation and reducing ‘effectual demand’ (1836: 314-22). Malthus noted that one way of restoring ‘effective demand’ in such circumstances was to redistribute some income from the richer to the poorer consumers. He also noted that ‘effectual demand’ was maintained by, unproductive consumers’ such as clergyman, who contributed without adding to the supply of goods (1836: 374). Further, an interesting story was that when Malthus advocated that aggregate demand might become too low to secure full employment, his good friend David Ricardo concluded that Malthus had failed the most fundamental principles of economics. Many years later, it led Keynes—in chapter 23 of his *General Theory* (1936)—to hail him as an important precursor of his own ideas.

The similarity of these arguments to those in *The General Theory of Employment, Interest and Money* (1936) by John Maynard Keynes and his emphasis on ‘effective demand’ will not escape anyone. Accordingly, Keynes (1972: 100-1) wrote in his 1933 essay on Malthus: “If only Malthus instead of Ricardo, had been the parent stem which 19th century economics proceeded, what a much wiser and richer place the world be today.” An affinity between Keynes and Malthus exists on a number of questions, including their mutual rejection of Say’s law, their aversion to long-run, equilibrium theorizing and their stress on the importance of effective demand. It should be noted, however, the critiques of Say’s law in the works of both Keynes (1936) and Marx (1969: 501-9) depend more on the role of money than in Malthus’s version. But the idea of a mismatch of habits and motives between producers and consumers, and the lack of adequate compensating mechanisms, is found in both Malthus and Keynes.

3.3.3 Malthus' Friendship with David Ricardo

The friendship between Malthus and Ricardo was well –known to economists' circle. The contact between the two economists was established in 1811, when Malthus wrote to Ricardo on a question concerning the causes of inflation; Malthus wished to meet Ricardo for an “amicable discussion in private,” so as not to waste time on a long controversy in print. This became the beginning of their correspondence and a friendship which lasted until Ricardo's death in 1823. According to Dorfman (1989) they often met several times a week and they wrote about eighty letters to each other each way.

The story of the friendship between Malthus and Ricardo is a moving one. It is also of interest from the point of view of the history of economic ideas, since it demonstrates that the classical school of economists did not only consist of people who thought alike about economic questions. They had a common approach to economics that enabled them to communicate easily with each other, and this approach was based on a shared theoretical framework. But this framework was not so narrow that it necessarily made them draw the same conclusions. After Ricardo's death Malthus reflected that if they had only had the opportunity to continue their discussions, they would in the end have reached agreement. In his speech at Ricardo's funeral he said: “I never loved anybody out of my own family so much. Our interchange of opinions was so unreserved, and the object after which we were both enquiring was so entirely the truth and nothing else, that I cannot but think we sooner or later must have agreed” (Dorfman 1989, p. 162).

3.4 David Ricardo (1772-1823)

David Ricardo (1772-1823) came from a wealthy Jewish family. His *father* was a broker of commodity and securities and the family had been business people for several generations, first in Spain, later in *Italy* and the Netherlands before they settled in England a few years *before David* was bom. His formal schooling lasted only until he *was* fourteen, when he started to work for his father's firm. Gradually, frictions developed between him and his orthodox family, and the conflict became acute when he *married a* non-Jewish woman. He *left his* father's business and

established himself as a stockbroker. He was very successful and quickly amassed a great fortune, which enabled him to retire when he was about forty. He bought a country estate outside London and lived on the income from his capital while devoting much of his time to the study of politics and social affairs, particularly economic issues.

Ricardo's career as a writer on economics began with the publication of the pamphlet *The High Price of Bullion, a Proof of the Depreciation of Bank Notes* (1810). Its chief argument was that the high price of gold was caused by a pronounced increase in the circulation of bank notes, thereby establishing Ricardo as an early spokesman for the quantity theory of money. This publication caused considerable attention and established Ricardo as an authority on financial and monetary questions. Gradually, he became one of the central participants in the Political Economy Club, and several of its members, among them Malthus and James Mill (the father of John Stuart Mill), strongly encouraged him to write a general exposition of the whole area of economics or political economy. He managed to complete his major work *The Principles of Political Economy and Taxation*, in less than two years, and it was published in 1817.

Many writers have maintained that Ricardo's most important contribution to the development of economics lies in his establishment of a certain style of theoretical research that had a strong influence on his successors.

Ricardo's *Principles* can roughly be divided into three parts. The first part discusses the foundations of the theories of price formation and income distribution, the second part is concerned with issues of taxation theory and policy, while the third part is a collection of chapters on selected topics that are only loosely interconnected.

Like Adam Smith before him, Ricardo thought of labour, capital, and land as the three basic factors of production. However, the American economist George Stigler has characterized his theory as a "93 % labour theory of value".

Ricardo died, much admired, leaving the immense fortune of £775,000, including agricultural estates. As Mark Blaug puts it: 'Ricardo may or may not be the greatest economist that ever lived, but he was certainly the richest'.

3.4.1 The Theory of Rent

It was in the analysis of third factor of production—land—that Ricardo made one of his most path-breaking contributions in the form of his theory of rent. The theory of rent is discussed in detail in chapter II in the *Principles*. The theory is easiest to understand if we assume that the person who owns the land is different from the one who cultivates it. A farmer who rents his farmland from a landowner will have to pay him a periodic sum for the use of the land, and this is Ricardo's concept of rent, land varies in terms of its quality or productivity. As population and *with it the* consumption of *food* increases, farmers will use land of decreasing quality. On the farm that uses the land of the poorest quality, the cost of production (in terms of labour and capital) will be exactly equal to sales revenue, and rent will be zero. The farms that use land of higher quality will, on the other hand, show a positive difference between revenue and cost, and the *difference will increase with the* quality of the land. This is the rent, *for* the difference shows the highest payment that the landowner can collect without providing the farmer with an incentive to move to a farm with a lower quality of land.

Let us now assume that the price of corn (which Ricardo often uses as a synonym for food) goes up, for example, as a consequence of an increasing population. Farmers will then start to use land of poorer quality, with the implication that the rent on all other land increases. In other words, the chain of causation goes from the price of corn to the rent of land, not the other way around; rent is not an element of the cost of production. Ricardo summarizes the essence of the theory of rent as follows: Corn is not high because a rent is paid, but a rent is paid because corn is high. (Ricardo 1817; 1951, p. 74)

3.4.2 The Theory of International Trade

Ricardo's fame today rests to a large extent on his contribution to the theory of foreign trade, especially the theory of comparative advantage as the basis for the international division of labour. He says that foreign trade will nevertheless increase the standard of living: "It will very powerfully contribute to increase the mass of commodities, and therefore the sum of enjoyments" (Ricardo 1817; 1951, p. 128).

Nevertheless, foreign trade does make a real contribution to output or the amount of value, but its contribution is more indirect; it encourages specialization and the international division of labour, and this leads to a more efficient use of resources in every single country. About free trade he says that

by increasing the general mass of productions, it diffuses general benefit, and binds together by one common tie of interest and intercourse, the universal society of nations throughout the civilized world. It is this principle which determines that wine shall be made in France and Portugal (Ricardo 1817; 1951, p. 134)

So what is this principle that determines the international division of labour? One could imagine, Ricardo says, that if the rate of return on capital were higher in Portugal than in England, capital would move from England to Portugal,

This reasoning forms the background to the assumptions on which Ricardo builds his theory of foreign trade. Assumptions are:

Production: There are two commodities. And there is one factor of production whose endowment is fixed.

Demand: No specific assumption regarding the demand functions. Trade is balanced implying that economy-wide spending is equal to income.

Trade: There are two countries that can trade the two goods free of transport cost. The factors are immobile internationally.

Market Structure: There is perfect competition in all markets.

The above assumptions are used to demonstrate the benefits of international specialization: when each country adopts specialization in production and uses part of its output for exports—which in turn finances its imports—all countries can exploit their productive advantages in the international exchange of commodities.

How these advantages can be exploited is illuminated in the example of trade between England and Portugal, who produce and exchange two commodities, wine and cloth. The example is nowadays usually presented in the form of a table of numbers, frequently supplemented by means of equations and diagrams. Ricardo himself has nothing of this, but his exposition is still very clear and analytic. In his

original version the numbers of man- years it would take to produce given quantities of wine and cloth are as follows:

Goods	England	Portugal
Wine	120	80
Cloth	100	90

Obviously, Portugal is the most efficient country in the production of both goods. In spite of this, it is to Portugal's advantage to import cloth from England instead of producing them at home:

Though Portugal could make the cloth with the labour of 90 men, she would import it from a country where it required the labour of 100 men to produce it, because it would be advantageous for her rather to employ her capital in the production of wine, for which Portugal would obtain more cloth from England, than she could produce by diverting a portion of her capital from cultivation of vines to the manufacture of cloth (Ricardo 1817; 1951, p 125).

It is the relative productivity or comparative advantage that determines the location of production. For Portugal it will be in the national interest to leave the production of cloth to English producers and specialize in the production of wine.

The theory of comparative advantage is an interesting demonstration of Ricardo's style when he writes about economic theory. In his willingness to adopt simplifying assumptions and construct stylized examples he gives a foretaste of the development of modern economics. He acknowledges that his theories represent abstractions from real life, but he defends his simplifications by the argument that they make it possible to grasp the essence of complex problems.

3.4.3 The Theory of Taxation

More than one fourth of Ricardo's *Principles* is concerned with taxation, and this part has a more applied character than the rest of the book. After a short introductory chapter he discusses the most important types of taxes, such as taxes on raw materials, on wages, on profits and on housing. His main interest is in the incidence of taxation. Who is it that in the last instance carries the burden of taxes?

Ricardo says that there is a significant difference between the incidence of taxes on necessities and luxury goods. Taxes on luxuries like wine and riding horses are paid, in the form of higher prices, by those who consume them. But taxes on necessities are not necessarily paid by the workers who consume them. In the long run, therefore, these taxes are not paid by the workers, but by the employers who must pay them higher wages. How large are the effects of taxes on consumer prices? According to Ricardo, they are completely shifted to consumer prices:

A tax on hats will raise the price of hats; a tax on shoes, the price of shoes; if this were not the case, the tax would be finally paid by the manufacturer; his profits would be reduced below the general level, and he would quit his trade. (Ricardo 1817; 1951, p. 205)

This is a precise and elegant analysis. But he emphasizes that in case of agriculture, it is possible for the burden of the tax to be shared between producers and consumers.

What are the best forms of taxation? On this point, as economic historians say that Ricardo is a little less clear.

Modern economists nowadays invoke the economists of the past like Ricardo in support of their own views. In this way “Ricardian Equivalence” came to fore as a hypothesis which states that debt or tax finances are equivalent in their real effects on the economy. This is one type of crowding-out. But the irony is that Ricardo definitely did not hold this hypothesis.

3.5 Conclusion

In what follows is that both the economists— Malthus and Ricardo— of the classical school have contributed immensely in the development of economic thoughts— the former in building up theoretical framework with respect to population theory, implications of Corn Laws and— the latter in spreading the theory of rent, comparative cost doctrine as well as theory of taxation. Many years later it led John Maynard Keynes—in chapter 23 of his *General Theory* (1936)—to hail Malthus as an important precursor of his own ideas.

On the other, Ricardian model dominated the thinking of his day and was to be an important starting point for John Stuart Mill, Karl Marx and Alfred Marshall.

3.6 Summary

Corn Laws: A series of English laws from the reign of Edward IV which protected English agriculture by imposing tariffs on the import of corn to maintain its price; also subsidies (export bounties) were granted to farmers.

Theory of comparative cost advantage: Ricardo's fame today rests mainly, of course, on the contribution to the theory of comparative advantage. The essence of theory of comparative cost advantage runs thus:

When a country can either import a commodity or produce it at home, it compares the cost of producing at home with the cost of procuring from abroad; if the latter cost is less than the first, it imports. The cost at which a country can import from abroad depends upon what the commodity costs which it sends in exchange.

3.7 Exercises

A. Short-answer Type Questions

1. What are Corn Laws?
2. What is Ricardo's Corn Model?
3. How is rent defined by Ricardo? How does it arise?
4. What is comparative cost doctrine?

B. Medium-answer Type Questions

1. State Malthus' arguments in favour of Corn Laws.
[Ans: See Section 3.3.2]
2. Explain comparative cost doctrine taking England and Portugal as two countries Trading with cloth and wine.
[Ans: See Section 3.4.2]

C. Long-answer Type Questions

1. 'Malthus is above all known for his theory of population growth'— do you agree? Justify.
[Ans: See Section 3.3.1] .
2. In what ways Malthus and Ricardo differ in respect of Corn Laws? — Give arguments.
[Ans: See Section 3.3.2].

3. Corn is not high because a rent is paid, but a rent is paid because corn is high—discuss.
[Ans: See Section 3.4.1].
4. Write a short note on Ricardo's theory on Taxation. How far is it true to say that modern economists influenced by Ricardo?
[Ans: See Section 3.4.3]
5. Explain the theory of comparative advantage as the basis for the international division of labour.
[Ans: See Section 3.4.2]

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Unit 4 □ Karl Marx as an Economic Theorist

Structure

- 4.1 Objective**
- 4.2 Introduction**
- 4.3 Life**
- 4.4 The Communist Manifesto**
- 4.5 Das Capital**
- 4.6 Capitalism and Surplus Value**
- 4.7 Marx's Labour Theory of Value**
- 4.8 Economic Growth**
- 4.9 The Falling Rate of Profit and the Breakdown of Capitalism**
- 4.10 The Importance of Karl Marx**
- 4.11 Conclusion**
- 4.12 Summary**
- 4.13 Exercises**
- 4.14 References**

4.1 Objectives

In this unit, you will be able to

- have a brief sketch of Karl Marx's life and his place in the history of economics;
- know what had been written in the *Communist Manifesto* as jointly written by Marx and Friedrich Engels (1820-95), the principal intellectual collaborator of Marx since 1844;
- get glimpses of his contribution in forming economic theories from his different works;
- have an overview of *Das Capital* that is still counted as the most influential book in existence;

- learn about also— the value in use and value in exchange in Marxian sense, the Smith–Turgot Stages Theory as reformulated by Marx through his incorporation into it the theory of class conflict, as well as understand the intricacy about the falling rate of profit and the breakdown of capitalism as articulated by Marx through his powerful synthesis;
- analyze one of the most economic theories in *Das Capital*, i. e. the economic growth process in a capitalist economy; and
- to comment on his place and importance in the history of economic thought.

4.2 Introduction

Of late, there has been much discussion on those individuals who played a significant role in the shaping of the twentieth century. Though he lived in the nineteenth century, Karl Heinrich Marx (1818-1883), the German-born, sociologist, journalist and, leading classical economist, revolutionary thinker and above all, philosopher in favour of communism and socialism. has featured heavily. This is because his writing have been so influential in economics, politics, sociology and history that it is hard to conceive of what these fields would have been like without him.

The emphasis here is on Karl Marx as an economic theorist. Marx, from one point of view, was the last of the great classical economists. Also, it has been persuasively argued that Marx's entire vision cannot be understood except in terms of its economic content, on which he lavished twenty years of hard work and thousands of pages of writing. Marx was of course a major thinker with a lasting influence on world affairs as well as millions of people. Bronfenbrenner quipped that *Das Kapital* is still the most influential unread book in existence. In his well-known textbook on the history of economic thought, Mark Blaug, in the introduction to his chapter on Marx, writes that "Marx the economist is alive and relevant in a way that none of the other writers are that we have thus far considered" (Blaug, 1962; 1997, p. 215).

4.3 Life

Karl Marx (1818-83) was born in Trier in Germany. His family was Jewish, but his father converted to the Catholic faith the year before his son Karl was born. When Marx had finished his secondary education in Trier he began his university studies, first in Bonn, where he studied law, and later in Berlin, where he took up philosophy. As a student he seems to have been somewhat disorganized; he read much but with little focus. He finished his studies by obtaining a doctorate in philosophy at the University of Jena with a dissertation on the history of philosophy in ancient Greece. He became strongly influenced by the thoughts of the philosopher Georg Friedrich Hegel (1770-1831) and began to move in radical circles in the university environment. Marx's ambitions for the future may at this time have been toward an academic career, but this soon proved to be unrealistic.

Unable to find a lectureship, he turned to journalism to make a living. Initially he wrote for and edited the *Rheinische Zeitung*, a liberal democratic newspaper, which politically expressed the views of the liberal left but after this was banned by the Prussian government in 1843 he moved to Paris to write for the *Deutsch – Franzosische Jahrbucher*. In Paris he explored political, economic, historical and philosophical ideas and struck up a friendship with Friedrich Engels (1820-95), the son of a wealthy textile manufacturer, who was also interested in the philosophy of Hegel.

However, against the wishes of the authorities in Brussels, Marx established an organization that aimed to keep communist around the world in contact (the Communist Correspondence Committee), and co-authored a number of works with Engels in which they criticized popular French and German philosophical and socialist ideas. In 1843 Marx married Jenny von Westphalen, the daughter of a high-ranking official in the Prussian state administration. For Marx, this was obviously a step upward on the social ladder. The couple had seven children, only three of whom survived to adult age.

In 1843 publication of the *Rheinische Zeitung* was stopped by the government censorship. Marx no longer saw a future for himself in Germany, and the couple moved to Paris where they joined a circle of socialists and communists; it was there that Karl Marx became a convinced communist.

The first published result of the Marx-Engels collaboration appeared in the revolutionary year 1848 in the form of the small book *Manifest der kommunistischen Partei* (Manifest of the Communist Party, better known as ***The Communist Manifesto***). An organization called the Communist League had asked Marx and Engels to draw up a political program for the league. The result was probably the most influential political pamphlet that has ever been written. In addition to its inflammatory political slogans—"Working men of all countries, unite!"—the Manifesto also contains the beginnings of a more fundamental political and economic analysis and critique of the capitalistic system which were later to be expanded and elaborated in Marx's main work *Das Kapital* (*Capital*).

As a result of intervention from the Prussian government Marx was expelled from France in 1845. He moved to Brussels and later to Cologne where he resumed his activities as a journalist, now as editor of the *Neue Rheinische Zeitung*. But in 1849 this newspaper was also forced to stop publication, and once again Marx was expelled. This time he moved with his family to London where he lived for the rest of his life. He earned his living chiefly by freelance journalism, in addition receiving financial support from Engels who was in much easier economic circumstances. But Marx and his family lived in rather poor conditions and at times in direct poverty. During these years Marx survived by grants from Engels.

During this time Marx studied economics with his usual complete devotion to an enterprise; He spent thousands of hours in the British Museum library, where he read and took notes, which grew mountainous with time. During the last sixteen years of his life he attempted desperately but unsuccessfully to bring his notes in order and to publish the rest of the work, but he died without having achieved it. However, his studies in library eventually resulted in a number of books: the *Grundrisse* (an outline of political economy), the *Theories of Surplus Value* (actually a history of economic thought from Marx's perspective), and the famous three-volume *Capital*. Marx actually completed the first volume. The reason why today we know *Capital* as a book in three volumes is due to the work of Engels. Engels managed to publish volume 2 of *Capital* in 1885 and volume 3 in 1894 before his own death in 1895. A fourth part of the work, which is Marx's account of the history of economic thought, was later (1905-10) edited and published by Karl Kautsky

under the title *Theorien uber den Mehrwert (Theories of Surplus Value)*. These books were only a part of Marx's output; there were many pamphlets, letters, and articles—so many that if published they would be fifty volumes (Adam Smith's complete works take only six volumes and Ricardo's ten). In addition he devoted an immense amount of time during 1864-72 to revolutionary politics, throwing himself into the International Working Men's Association (the First International). Soon after this group split up because of doctrinal disputes, Marx became ill. He died in 1883.

4.4 The Communist Manifesto

Against the wishes of the authorities in Brussels, Marx established an organization that aimed to keep communist around the world in contact (the Communist Correspondence Committee), and co-authored a number of works with Engels in which they criticized popular French and German philosophical and socialist ideas. In 1847 he participated in the Second Congress of the League of Communists in London. The League embraced Marx and Engel's ideas with enthusiasm and invited Marx and Engels to write about their believes and aims. The result was Marx-Engels *Das Kommunistische Manifest* (1848, trans. **The Communist Manifesto**), published at a time of political instability in Europe—a document which has perhaps been more influential in human history than any other.

What was written in Communist Manifesto?

According to Marx and Engels, the ruling class in society is the bourgeoisie. The bourgeoisie has come to occupy its position of power by means of an economic and social revolution that led to the ruin of the feudal society. Early in the book it is emphasized that the victory of the bourgeoisie has led to an unprecedented economic growth, but at the same time to man's *alienation*. Therefore, the revolt and win of the proletariat against the bourgeoisie is of utmost importance. Marx and Engels proclaimed: "The proletarians have nothing to lose but their chains. They have a world to win". What would happen after the victory of the proletariat (the property-less working class)?

The proletariat will use its political supremacy to wrest, by degrees, all capital from the bourgeoisie, to centralize all instruments of production in

the hands of the state, i.e., of the proletariat organized as the ruling class; and to increase the total of productive forces as rapidly as possible. (Marx and Engels 1848; 1998, p. 75).

The increase of the productive forces will occur through a new organization of the mode of production which, at least in the early stages of the rule of the proletariat, can only come about through “despotic inroads on the rights of property, and on the conditions of bourgeois production.” This stage is known as the dictatorship of the proletariat.

Regarding the more specific political features of the future rule of the proletariat and the communists, Marx and Engels wrote down a program consisting of ten points. They allow for the program to vary to some degree from one country to another, but for “the most advanced countries” the ten points would in general be applicable. The main elements in their ten points are government expropriation of all land; a strongly progressive tax system; the abolition of the rights of inheritance; and the nationalization of credit, transport, manufacturing, and agriculture. The program also calls for “equal obligation of all to work” and for free education for all children in public schools. Following the presentation of the program, Marx and Engels here in Manifesto add a remarkable vision of the new society:

When, in the course of development, class distinctions have disappeared, and all production has been concentrated in the hands of a vast association of the whole nation, the public power will lose its political character. Political power, properly so called, is merely the organized power of one class for oppressing another. If the proletariat during its contest with the bourgeoisie is compelled, by the force of circumstances, to organize itself as a class... and, as such, sweeps away by force the old conditions of production, then it will, along with these conditions, have swept away the conditions for the existence of class antagonisms and of classes generally, and will thereby have abolished its own supremacy as a class.

In place of the old bourgeois society, with its classes and class antagonisms, we shall have an association in which the free development of each is the condition for the free development of all. (Marx and Engels 1848; 1998, p. 76)

In other words, when the proletariat revolution will materialize, a new society will be established that is characterized by economic and social harmony—a future society with socialist or communist features. Critics articulate that this is an astonishing hypothesis.

A central idea in the *Manifesto* is the theory of the all-important role of the productive forces for the development of society, at least up to the time of the revolution of the proletariat. This idea is often referred to as historical materialism.

A notable feature of the argument in the *Manifesto* is the tension between on the one hand the thesis of the victory of the proletariat over the bourgeoisie as a case of historical inevitability and on the other hand the authors' appeal to the same proletariat to form a political alliance on the basis of the program of the Communist Party. If victory is predetermined, is it not unnecessary to call for political action?

Economic historian now writes that of all Marx's works, *The Communist Manifesto* is the one that has had the strongest popular appeal and probably also the strongest influence on politics and society.

4.5 Das Capital

Marx's place in the history of economic ideas is due above all to his main work, *Das Kapital (Capital)*. This book contains an analysis of the functioning of a market economy that is based on the institution of private property, and in fact the use of the term *capitalism* to describe such a system originated with Marx. The most important factual background for his theoretical analysis was the economic system in England as he observed it from his life in London, for he believed that it was in England that the capitalist system was most highly developed. Marx's ambition was to understand how the system worked with respect to price formation and income distribution, and to justify his prediction that, with historical necessity, it was moving toward its own destruction. The system which in turn would succeed capitalism was the communist society. But the analysis of the economy of the new society plays a subordinate role in Marx's analysis; he is first and foremost a theorist of capitalism, not of socialism or communism.

In more than one sense, *Capital* is a many-sided work. Like the *Wealth of Nations* and as like Ricardo's *Principles*, Marx's wide reading shows up in the form of numerous references to the literature of economics, history, and politics, and he draws on examples from contemporary economic life in order to illustrate his theory of the functioning of the capitalist system.

4.6 Capitalism and Surplus Value

Marx attempted to describe the difference between capitalism and the economic system of the traditional feudal society in terms of two alternative representations of economic circulation. A representative agent of the traditional society is the artisan, who initially has a stock of finished goods, C. This he exchanges for money, M, which he uses to buy goods for his own consumption, C. The economic circulation of this society can therefore be written as C-M-C. In the capitalist society, the capitalists start out with money that they use to purchase goods which they in turn sell for *more* money; the circulation then becomes M-C-M' where dash represents the purchase and sale of commodities in the market and where each atom of capital goes through various forms. The difference ' $M = M'$ '— M is profit or, as Marx calls it, the **surplus value of the capitalist**. The surplus value forms the basis for capital accumulation and economic growth.

The above economic circulation, as shown by Marx (Vol II, I-IV) with the use of mathematical symbols can definitely be interpreted as a compact statement of the characteristic features of the capitalist system. Marx's vision of capitalism was that there were some agents, namely, the capitalists, whose activities were motivated not by a desire to satisfy human needs, but to make the surplus value as large as possible and accumulate capital. The contradiction between human needs and capitalist objectives created the built-in inconsistencies and tensions between the *productive forces* and the *mode of production*. This tension would in the end lead to the breakdown of the capitalist system.

This vision is far from Adam Smith's theory of the invisible hand. Marx has no sympathy or understanding for Smith's argument that the desire of the capitalists to maximize profits—or surplus value in the Marxian terminology—could be in the

interests of the consumers or workers. In Marx's view of the world, the interests of workers and capitalists are directly opposed to each other.

It can hardly be denied that this is a somewhat problematic view of the relationship between producers and consumers or between capitalists and workers. How can the capitalists maximize profit without regard to demand and, therefore, to the interests of consumers and workers? Other economists were unconvinced by this aspect of Marx's analysis of the market economy. On the other hand, however, there can be little doubt that his analysis had some significant indirect influence in the manner in which economists the study of economic system.

4.7 Marx's Labour Theory of Value

As an economist, Marx is generally situated in the continuity of the great classical school of Smith and Ricardo. He obviously owes a lot to Ricardo.

Marx inherited the labour theory of value from the classical school. For Ricardo, labour is essentially a numeraire. For Marx, labour is value. Value is nothing but that fragment of the total labour potential existing in a given society in a certain period.

According to Marx, diamonds are valuable not because of the amount of labour embodied in them generally, or even because they are scarce, but because they cannot be *easily* reproduced and larger the store the more this is the case. A painting by Leonardo do Vinci is especially valuable precisely because it cannot be reproduced *at all*. Marx is correct to say if we could succeed in converting carbon into diamonds, the value of diamonds might well fall below that of bricks, but this would have nothing especially to do with any reduction in the amount of labour embodied in the production of diamonds, as Marx seemed to think.

However, Marx began his analysis in *Das Capital* by distinguishing between two aspects of the value of commodities: Use-value and exchange-value. Use-value is their capacity to satisfy wants; the exchange value is the proportion in which commodities are exchanged. Marx does not accept exchange-value as determined by supply and demand as in the standard economic theory of today. Anyone can see what prices as determined by markets are, but Marx wants to get at the essence of

exchange. The essence is found in the fact that the one thing common to all commodities is human labour. Now if labour is considered to be the social source of production, then the other factors payments should be attributed to labour. Marx called the payments to capital “surplus value”. In the end we find that all commodities are produced by labour, and when we have found how much labour is required to produce an additional unit of a commodity, we have found the value of the commodity in terms of labour. In Marx’s words:

A use-value, or useful article, therefore, has value only because human labour in the abstract has been embodied or materialized in it. How, then, is the magnitude of this value to be measured? Plainly, by the quantity of the value-creating substance, the labour, contained in the article. (Marx 1867; 1995, p. 16).

In standard Marxist terminology, the amount of wages paid by employers is called variable capital and denoted by v , surplus value is denoted by s . Thus the value of a good requiring no fixed capital is $v + s$, and the rate of surplus value is s/v . Marx created a famous piece of symbolism here in incorporating the production process in capitalism. Let M stand for money and C for commodities, and M' for the larger sum of money that the capitalist winds up with at the end of the chain of transaction. Then capitalist production is symbolized by $M—C—M'$, and non-exploitative production by $C—M—C$. In capitalism, although everything is bought and sold at its value, a gain to the capitalist results from exploitation of surplus value of the worker.

The essence of modern capitalism is the use of machines, and machines contribute to the value of the commodity in this way. Suppose the machine requires 200 labour-hours to produce and that the machine is worn out after it produces 400 units of the commodity. Then the contribution of the machine to the value of one unit of the commodity is $1/400 \times 200 = 1/2$ hour of congealed labour time. This depreciation charge on the machine is called c , for constant capital. Thus the total value of the product is $c + v + s$. Although surplus value depends only on variable capital, with the rate of surplus value defined as s/v , the rate of profit as computed by capitalist depends on all the capital he uses and is defined by Marx as $s / (c+v)$.

Thus Marx’s value theory is a labour theory.

Recent researches on Marx have highlighted the point that his pure labour theory of value was based on a desire to derive the “right” prices when workers received their legitimate share of factor income, namely, the whole. The other theory, which was based on the assumption on unequal organic composition of capital, had a more descriptive purpose. From this point of view, it seems rather doubtful that the transformation problem ought to be regarded as the most significant part of Marx’s economic theories.

A Note on the Difference between Ricardo & Marx on to Labour Theory of value :

In fact the labour theory of value in Ricardo and in Marx is quite different. In regard to the labour theory of value, Ricardo had an empirical rather than an analytical theory: he knew that allowing for the different amounts of capital used in different industries would give production costs which are not proportional to labour costs, but he believed that labour was so large a part of the cost structure than an insignificant error was involved in ignoring capital.(this is “93 % labour theory of value” of Professor Stigler.)

Marx, too, knew like his favourite economist, David Ricardo that market prices are not determined by labour content; however, Marx used labour value, not as a first and useful approximation as Ricardo did, but because labour is the relevant social force of production. As Schumpeter puts it, for Marx quantity of labour embodied in commodities does not merely determine their value; it is their value. Ultimately this is a metaphysical point.

4.8 Economic Growth

Many economists have argued that one of the most interesting economic theories in *Das Capital* is the analysis of the economic growth process in a capitalist economy. The theory can be considered as a sketch of a model of economic expansion in a society with two sectors of production. At the time of Marx’s death, the theory existed only in the form of fragmentary notes in his manuscripts, and it was Engels who attempted to systematize them when he edited volume 2 of *Capital*. On this background, modern economists have succeeded in constructing mathematical models of economic growth that in several respects are similar to a growth model

that was developed in the 1940s and is known after the originators as the Harrod-Domar model. [However, the original version of this model in Harrod (1948) and Domar (1946) has only one sector of production, while two-sector models were not developed until the 1960s)].

One of the sectors produces consumption goods while the other produces investment goods. Part of the total income in the economy goes into saving. As regards the demand for consumer goods and the supply of saving Marx assumes that workers consume the whole of their income, while part of the profit or surplus value in each of the two sectors is saved. In other words, the income of the capitalists is the only source of saving in the economy. Equilibrium now requires that saving is equal to the value of the output of investment goods. These assumptions provide the elements of a theory of growth: investment leads to an increase of the capital stock and thereby to increased production and higher income for the capitalists, who then increase their saving, making room for additional investment. On the basis of the exposition of this analysis in *Capital*, modern economists have worked out rigorous mathematical models that claim to represent Marx's hypotheses and assumptions, and this is therefore an area where the study of Marx has clearly provided inspiration for modern economic theory. But it is likely that Marx would have been puzzled by—and protested firmly against—the main result generated by the modern reformulation of his theory: this is that the theory can be interpreted as a model of balanced growth in which the long-run rate of growth in the economy is constant. This was not what Marx had in mind: on the contrary, a central feature of his theory of capitalist growth was that the market economy possessed inherent contradictions which, in the long run, would lead to its own destruction. This is a far cry from the outcome of balanced growth where the economy grows at a constant rate without any time limits on its progress.

4.9 The Falling Rate of Profit and the Breakdown of Capitalism

The theory of the falling rate of profit (in *Capital* Vol III, Parts II-III Chapter 1-15. But especially Ch. 14-15) is one of the most controversial parts of Marxian

economic analysis. We must understand the reasons why Marx accepted that there was indeed a tendency for the rate of profit to fall at all.

Marx expresses the rate of profit in the following formula: in which r equals to the rate of profit, s represents the amount of surplus value produced over and above costs, c stands for constant capital cost employed during the process of production—i.e. machinery and raw materials— and v represents variable capital costs, the cost of labour or wages. Thus the rate of profit (r) must fall if the denominator in this equation ($c+v$) increases in relation to the numerator (s). This is nothing more than a simple mathematical truism. Thus, if for the sake of convenience a factor of 2 is attributed to each of s , c and v , the following equation for the rate of profit emerges:

$$r = \frac{2s}{2c+2v} = \frac{2}{2+2} = \frac{2}{4} = \frac{1}{2} = 50\%$$

If we now increase to a factor of 4, the rate of profit will obviously fall:

$$r = \frac{2s}{4c+2v} = \frac{2}{4+2} = \frac{2}{6} = \frac{1}{3} = 33\frac{1}{3}\%$$

On the other hand, it is equally true to say that the rate of profit would *rise* if either s increased relative to $c + v$ or if $c + v$ fell relative to s . Thus, if s rose from 2 to 4, we would get the following rate of profit.

$$r = \frac{4s}{2c+2v} = \frac{4}{2+2} = \frac{4}{4} = \frac{1}{1} = 100\%$$

The rate of profit will therefore fell where ($c+v$) increased in relative to profit (s).The important point to understand here is that there is only a *tendency* for the rate of profit to fall.

The same argument can be put forth in the following way:

$$r \text{ can be rewritten as } = \frac{s/v}{(c+v)/v} + 1.$$

Marx postulates that the increase in the *organic* rate of surplus value has a definite limit, while the increase in organic composition of capital has practically none (automation, robotism). There will therefore be a basic tendency for the rate of profit to decline. This is absolutely true only on a very long-term. In other time

frameworks, the rate of profit can fluctuate under the influence of the countervailing forces.

Marx contribution concerning the tendency of the rate of profit to fall was intended to resolve the problem of why capitalists are apparently willing to continually to increase their investment in constant capital when the effect of this would seem to be continually reduce their rate of profit. Marx says: It must never be forgotten that the production of this surplus-value ... is the immediate purpose and compelling motive of capitalist production.

Marx emphasizes that the trend toward more accumulation of capital, a falling rate of profit, higher industrial concentration, and greater social misery will in the end lead to tensions between the productive forces and the mode of production that are so strong that the capitalist system will be unable to survive:

The monopoly of capital becomes a fetter upon the mode of production, which has sprung up and flourished along with, and under it. Centralisation of the means of production and socialization of labour at last reach a point where they become incompatible with their capitalist integument. Thus integument is burst asunder. The knell of capitalist private property sounds. The expropriators are expropriated. (Marx 1885; 1995, p. 380)

Impressive as it is, it is hard to avoid the conclusion that Marx's analysis of the falling rate of profit and the breakdown of capitalism is a prophetic vision rather than a convincing economic theory, as critics argue.

Let us now introduce different theories which explain crisis in different terms. There are theories which explain crisis in terms of the impact of the class struggle on the rate of profit, 'neo-Ricardians' focusing on the wages struggle, 'labour process' theorists focusing on the struggle over production. On the other hand, there are theories which explain crisis in terms of the 'law of the tendency for the rate of profit to fall', whether directly, as a result of the rising organic composition of capital. or indirectly, as a result of the exhaustion of the reserve army of labour. But for the sake of simplicity, we will concentrate here on the last one.

For Marx, the crisis is inherited in the 'general conditions of capitalist production' (Marx, *Theories of Surplus Value, II*, 515). Different theories differed as to the

precise cause of the fall in the rate of profit, but there was widespread agreement that the tendency to crisis lay in some form of tendency for the rate of profit to fall.

What connection is there between tendency of the profit to fall and the theory of crisis? The fact of the matter is that a fall in the rate of profit is neither a necessary nor a sufficient condition for crisis.

The Falling Rate of Profit in the Marxist Tradition

The traditional conception of the law of the tendency for the rate of profit to fall was that this law described a long-run secular tendency of accumulation, but could not provide the basis of a theory of crisis. The reason for this was simple. A crisis represents a breakdown in the **reproduction process** of capital, as capital is withdrawn from circulation and immobilized in the money form. A mere fall in the rate of profit is not a sufficient condition for the withdrawal of capital from circulation, since it will continue to be worth investing so long as there are investment opportunities which offer the prospect of a positive rate of profit. It was widely believed that this implied that the condition for a crisis is not a fall in the rate of profit, but a fall in the mass of profit. However, the tendency for the rate of profit to fall is associated not with a fall, but with a rise in the mass of profit, the rate of profit falling only because the organic composition of capital rises more rapidly than the rate of exploitation.

The source of crisis lies neither in the ‘anarchy of the market’, nor in the immediate process of production, but in the relation between the two, in the ‘circulation process which is in itself also a process of reproduction’ (Theories of Surplus Value, II, 513. C.f. Capital, III, 351- -2; Grundrisse, 410–11). More specifically for Marx, as for the whole of the orthodox Marxist tradition, the source of crisis lay in the contradiction between the capitalist tendency to develop the productive forces without limit, on the one hand, and the tendency to restrict the consumption power of the mass of the population, on the other, which contradiction underpins the orthodox ‘under-consumption’ (or, more accurately, ‘overproduction’) theory of crisis. The fall in the rate of profit is not a cause of the crisis, it is its expression, the expression of the failure of capital to realize the mass of surplus value which it has produced. However, the discussion of crises made in *Capital* is based on the ‘absolute’ over-accumulation of capital, in which a fall in the mass of surplus

value implies that 'no further additional capital could be employed for the purpose of capitalist production' (Capital, III, 360–1).

However, a fall in the rate of profit cannot lead to a crisis, but only that such a fall cannot explain the necessity of crisis. If a crisis does arise it is not because of the fall in the rate of profit, but because of the failure of the system to adjust to the changing conditions of production, of which the fall in the rate of profit is the quantitative expression. This is why, in general, where falling rate of profit theorists spell out their theory of crisis, it turns out that it is essentially a **disproportionality theory** that originates from Karl Marx. Simply it refers to the effects of maladjustment between the two major aggregate sectors of production, those of investment goods and consumer goods. Especially when the economy moves to a higher rate of growth, partial maladjustments may multiply into general overproduction. Disproportionality theorists see these maladjustment processes as normal and inherently linked to capitalist economies; thus disproportionality is, in fact, the antithesis of the equilibrium.

It is worth-noting in the last part of the second volume of Capital, published in 1885, Marx presented a 'reproduction schema' of the capitalist economy. In modern terms, it would be called a dynamic two-sector macroeconomic model, with the first sector producing means of production (investment goods) and the second sector producing consumer goods. Marx was the first economist to develop such a model. On the basis of this schema, he was able to specify a number of dynamic interconnections in the functioning of the capitalist economy. Particularly, he showed that in the context of economic growth, proportionality, or balance, between the two major sectors of the economy is most unlikely. In other words, disproportional or disequilibrium growth, together with its potentialities for economic crisis, is the normal case.

However, Marx certainly regarded the 'law of the tendency for the rate of profit to fall' as important. But throughout his work it is interpreted not as a theory of crisis, but as a secular law, the importance of which is that it intensifies the inherent contradictions of the capitalist mode of production, between the development of the forces of production expressed in the concentration and centralization of capital, and the relative pauperization of the mass of the population, expressed in the de-skilling of labour and the augmentation of the reserve army.

But that the inevitability of economic crisis under capitalism would be must is Marx's another projection, which has been confirmed by history. There have been 21 business cycles ending with 21 crises of overproduction. Capitalists' economic crisis is always crisis of overproduction of commodities. The only way to avoid the crisis of overproduction is to eliminate all basic sources of disequilibrium in the economy including the disequilibrium between the productive capacity and purchasing power of the final consumers.

However, when severe and unprecedented crises occur it returns to the focus of attention as a possible explanation. Stefano Perri (2009) has shown that Marx's theory of the falling rate of profit and the breakdown of capitalist system came also into prominence in the context of 2007-08 global economic crisis. Here the Marxian theory of falling rate of profit has been interpreted as a tendency of both the maximum rate of profit and output per unit of capital employed in the economic system to fall, while the productivity of labour increases.

4.10 Importance of Karl Marx

Should Marx be counted among the greatest of economic thinkers? Opinions differ on this question. Paul Samuelson (1962) on one occasion characterized Marx as "a minor post-Ricardian," while Negishi (1989) says that he is "one of the greatest economists in history." Who is right? As a forerunner of modern mainstream economic theory he is of little direct importance, even if there still are economists who find inspiration in Marx's work and who seek challenges in converting his ideas to the language of modern economics. However, as a polemicist and critic of the capitalist economic system of his time he was clearly of great importance, and it is undeniable that his visions of the breakdown of capitalism and of a future society of free and equal human beings have inspired politicians and intellectuals all over the world. His ideas about exploitation, the falling rate of profit, and the breakdown of capitalism, considered as economic theories, suffer from obvious weaknesses; nevertheless, their power to influence ideology and politics has, during a long period of recent history, been enormous. It is not necessarily the most rigorous and logical economic theories that succeed in manning the barricades.

Marx's economic theory in *Capital* is regarded as a solid scientific ground for socialism. Nay, the relevance of Marx's economic theory in *Capital* for socialism today is not confined to a narrow bound-only. While *Capital* presents a systemic theoretical analysis of the capitalist economy within a longer perspective on human history, it further demonstrates which elements of that economy are to be carried over to a socialist economy of the future.

Marx's theory of history, as set out in the chapters on 'primitive accumulation' in *Capital*, is still valid when expanded into a historico-theoretical conception of the capitalist mode of production worldwide, as Hiroshi Uchida (2006) succinctly articulates.

4.11 Conclusion

In what follows is the fact that Marx's contribution to economics appears in **Grundrisse** (1857-8), **Das Kapital** (1867, 1885 and 1894) and **Theories of Surplus Value** (1905-1910). Although many of the ideas in his works had long been discussed by classical economists like Adam Smith, Ricardo and their predecessors, such as the Physiocrats and William Petty, e.g., value in use and value in exchange, the decline in the rate of profit and labour as a basis of value, it was Marx only who was able to form them into a powerful new synthesis. This consisted of the **Turgot-Smith stages theory** (i.e. the economic development theory which shows the transition of an economy from its most primitive state to modern capitalism) that became immortalized in the hands of Marx through his incorporation into it a theory of class conflict, an analysis of the circulation of money and of commodities and his examination of the determinants of surplus value to expose the defects of capitalism in a way unparalleled in economics. But he has not been without his critics, particularly because many of his prophecies were unfulfilled with respect to the collapse of capitalism and the increasing poverty of the working class under capitalism. Marx realized that the *transformation problem* was a major challenge to his value and price theories: devotees since his death have tried to solve it but their proposed solutions usually require so many assumptions as to make their results trivial. Whatever may have been his defects as an economic theorist, his influence has been massive with thousands of academic disciples throughout the world determined to study economics in a sociological and ideological context.

4.12 Summary

Socialism: Socialism is a political doctrine that emphasizes the collective ownership of the means of production, ascribing a large role to the State in the running of the economy with widespread public ownership (Nationalization) of key industries, though it allows limited scope to market forces. Marx regarded socialism as a transitional stage between the end of a private enterprise system and the beginnings of communism.

Socialism is a way of organizing an economy so that the society owns productive capital and distributes the national income for the benefit of all. In other words, it is an idea that the economy's resources should be used in the interests of all citizens, rather than allowing private owners of land and capital to use them as they see it fit. It is the alternative to uncontrolled capitalism and to some extent a rejection of market mechanisms. Socialists have included believers in voluntary co-operation, believers in central planning, and believers in the use of the market mechanism in running a socialist economy. Socialists have tended to be egalitarian in principle, though not necessarily in practice.

So the early idealistic forms of socialism were based on the **idea of producers' cooperatives** and their propagators were Owen, and John Stuart Mill and others. Later socialist writings like Karl Marx, Friedrich Engels departed from the cooperative principle and based their theories on wider premises.

In the process of historical evolution, we find different forms of socialism: 1. socialism with the whole economy, often associated with a centrally planned economy (as in earlier Soviet-type economies); 2. Market socialism: Economies which have their modified their type of central planning with market mechanisms (e.g. Hungary and Yugoslavia) are examples of what is termed market socialism. It is also a planned economy which attempts to improve allocation by using markets.

In short, in the command socialism the government owns or controls the resources and decides how the resources are to be used. The government answers the fundamental economic questions of what to produce, how to produce, and who consumes what is produced.

Communism: The term ‘Communism’ in modern times is a political and specific economic doctrine which advocates that the state should own all property and organize all the functions of production and exchange, including labour. Karl Marx succinctly stated his idea of communism as ‘from each according to his ability, to each according to his needs’. Communism involves a centrally planned economy where strategic decisions concerning production and distribution are taken by government as opposed to being determined by the price system as in a market based private enterprise economy. Countries which have adopted forms of communism include the Soviet Union and its East European satellites, and China. It came into prominence through Communist Manifesto. From then on, it designates both a classless society without property, without ownership — either private or nationalized— of the means of production.

Communism is a society with common ownership of capital as well as a distribution of incomes according to need. Under Marxist-Leninism it is strictly defined as the final stage of socialism when the State has withered away, every one is equal (as member of the proletariat and there is no division of labour).

Alienation: By alienation Marx is referring to a process. It is that process whereby human creative labour becomes external to humans. For Marx, creative production is the essence of human life, whereas alienation is a distortion. Marx, in this context identifies some main paths in which humans are alienated under capitalism: alienation from the product, alienation from the activity of labour, alienation from man. Human alienation, Marx claims, requires a practical solution. For him, that solution would be a social revolution led by class struggle (the fundamental unit of Marxist analysis) .

Dictatorship of the proletariat: The increase of the productive forces will occur through a new organization of the mode of production which, at least in the early stages of the rule of the proletariat, can only come about through “despotic inroads on the rights of property, and on the conditions of bourgeois production.” This stage is known as the dictatorship of the proletariat.

Historical materialism: A central idea in the *Manifesto* is the theory of the all-important role of the productive forces for the development of society, at least up to the time of the revolution of the proletariat. This idea is often referred to as historical materialism.

Turgot-Smith stages theory: A theory of economic development which shows the transition of an economy from its most primitive state to modern capitalism. Turgot and Smith independently advanced such views in 1750 but the late classical use of it in the hands of immortalized it. Smith divided history into four ages—hunters, shepherds, agriculture and commerce. More recently Rostow have suggested a five-stage theory which is as ambitious as Marx’s but without a theory of class conflict.

Transformation problem: The problems stated in Marx’s *Das Capital* of deriving prices from values and of deriving profits from surplus value. Hence there are accordingly two versions of Marx’s price theory and the question may be raised of how they fit together. This question is known as “the transformation problem,” and modern mathematical economists have found that the clarification of this issue is perhaps the greatest challenge in arriving at a better understanding of Marx’s economic theories. Marx himself realized that the *transformation problem* was a major challenge to his value and price theories: devotees since his death have tried to solve it but their proposed solutions usually require so many assumptions as to make their results trivial.

Disproportionality Theory: According to Marx, the capitalist mode of production can in the long run exist only as a system of expanded reproduction. But expanded reproduction can only take place if certain proportions are maintained between Department I, which produces the means of production, and Department II, which produces the means of (personal) consumption. On the basis of reproduction schema, Marx was able to specify a number of dynamic interconnections in the functioning of the capitalist economy. Particularly, he showed that in the context of economic growth, proportionality, or balance, between the two major sectors of the economy is most unlikely. So the disorportionality problem arises.

4.13 Exercises

A. Short-answer Type Questions

- 1) What do you mean by the term “Dictatorship of the Proletariat?”
- 2) What is transformation problem?

- 3) What was the central feature of Marx's theory of capitalist growth?
- 4) What is socialism?
- 5) What is meant by Communism?
- 6) What is Turgot-Smith stages theory. How do it differ from Marx's?
- 7) What is Disproportionality Theory?

B. Medium-answer Type Questions

- 1) In which books Marx's contributions to economics appear?
- 2) Do you think that Marx believed in the dictum that the heart of capitalism was capital accumulation? – Discuss.
- 3) "In fact the labour theory of value in Ricardo and in Marx is quite different". — Do you agree? Justify
- 4) Describe Marx's theory of the falling rate of profit.
- 5) According to Marx, there is a basic tendency for the rate of profit to decline— Discuss.
- 6) Should Marx be counted among the greatest of economic thinkers?

C. Long-answer Type Questions

- 1) What prompted Marx and Engels to write Communist Manifesto? What had been written in Communist Manifesto?
- 2) What is the surplus value of the capitalist? In this connection give an account of Marx's vision of capitalism. Is there any tension or the contradiction between human needs and capitalist objectives? In which direction will this tension lead? How does Marx's vision differ here from Adam Smith's vision of invisible hand?
- 3) Do you agree with the statement that Marx value theory is a labour theory. — Elucidate.
- 4) Give a brief account of Marx's life and activity.
- 5) Do you agree with the statement that one of the most interesting economic theories in Capital is the analysis of the economic growth process in a capitalist economy? Do you agree? Give reasons.
- 6) State Karl Marx as a philosopher in favour of socialism and communism.

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Unit 5 □ The Marginalist Revolution: The Decade of 1870s and Beyond

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5.1 Objectives

In this unit, you will be able to

- have the nature of the marginalist revolution as pioneered by Jevons, Menger, and Walras;
- learn the contribution of Jevons in the field of marginal utility along with his sunspot theory;
- know about how did Carl Menger resolve the famous Diamond–Water paradox;
- have Engel and Engel laws and elasticities;
- Know about BOHM-BAWERK and Wieser— both belonging to Austrian school;
- learn how to understand General Economic Equilibrium as pioneered by Walras; and
- Know how Alfred Marshall gradually became one of the famous contributors in the history of economic thought and his *Principles* became in course of time the Bible of Economics.

5.2 Introduction

MANY HISTORIANS of economic thought maintain that economic theory underwent a fundamental change during the decade of the 1870s. This change affected both the style and content of the theory, and the change was so sudden and dramatic that it has been referred to as a revolution. The revolution was not limited to England as the homeland of the classical school; it happened more or less simultaneously in the English-German and French-speaking worlds. Conventionally, there are three individuals who are particularly closely associated with the revolution in the three areas: William Stanley Jevons in England, Carl Menger in Austria, and the Frenchman Leon Walras, whose academic base was Lausanne in Switzerland. Moreover, the *common view* has been that the revolution may be associated with three books by these authors: Jevons's *The Theory of Political Economy* from 1871, Menger's

Grundsätze der Volkswirtschaftslehre which came out in the same year, and Walras's *Elements d'Economie Politique Pure*, the first volume of which was published in 1874 and the second in 1877.

What was the nature of the marginalist revolution? On this, opinions differ, but one may at least point to three characteristic features of the new orientation in economic research:

1. A stronger emphasis on erecting economic analysis on the foundation of theories of behaviour for individual economic agents, in other words, firms and consumers.
2. Increased focus on the demand side of consumer goods markets and on the supply side of factor markets, accompanied by a critique of the classical labour theory of value. Marginal utility became a new and central concept of economic theory.
3. More reliance on mathematical formalization, above all through the use of the differential calculus.

All of these features were brought together in what we may call the marginalist approach to economic analysis. Both producers (firms) and consumers were regarded as agents who attempted to achieve the best possible outcome for themselves in the form of the highest possible profit for firms and utility for consumers.

In order to achieve this, they had to balance benefits and costs against each other such that on the margin there were no additional gains that could be obtained by any further actions. The marginalist principle, which could be formally characterized by the mathematical first-order conditions for a maximum, now emerged as the core of economic analysis, and this is the reason why the victory of the new theories has been characterized as the marginalist revolution.

Evidently, the triumvirate of Jevons, Menger, and Walras were not the first to introduce marginalist thinking in economics. We have already seen early traces of this line of thought in the work of the classical economists, as in Ricardo's theory of rent. It may be reasonable to look at the decade of the 1870s as the breakthrough for the new approach. To a larger extent than the pioneers, Jevons, Menger, and Walras incorporated the new theories into a unified system of thought. Moreover, in

contrast to the early pioneers, their ideas gained acceptance among other economists, gradually spreading to what one could now begin to regard as an economics profession.

Of the three central names during this period, we start by taking a closer look at Jevons and at Menger and his followers. Walras is sufficiently different from the other two to require a section of his own.

5.3 William Stanley Jevons (1835-82)

William Stanley Jevons (1835-82) was born in Liverpool where his father was an ironmonger. He seems to have had a happy childhood with parents who had strong intellectual interests. But when Jevons was ten his mother died, and a couple of years later his father's firm went bankrupt. Jevons's life situation became more difficult, but in spite of this he managed to begin to study at University College London in 1852, concentrating on natural science. After two years, however, he broke off his studies, probably for economic reasons, and immigrated to Australia where he found employment at The Royal Mint in Sydney. He spent altogether five years in Australia, where his working conditions were such that he could easily pursue his many and varied interests; he read meteorology and economics, collected statistical data and became a good amateur photographer. He was gradually filled by a desire to achieve something important in his life, and he wrote to his sister that what he wished was "to be good, not towards one or a dozen, or a hundred, but towards a nation or the world." His own contribution he saw as that of helping to establish a more fundamental understanding of human life— "to define the foundations of our knowledge of man." To reach such a goal was incompatible with his life in Australia, and in 1859 he returned to England to continue his studies, now with a focus on logic and economics, and he finished by obtaining an M.A. degree at University College with a thesis in economics. He was rewarded with a gold medal for the best candidate in his field, although he was dissatisfied both with his own achievements and with economics itself, which in his view ought to be reestablished on a more satisfactory theoretical foundation.

In the history of economics as a discipline Jevons is an interesting transitional character. Of the economists that we have so far encountered, he is the first with a

formal university education in the subject. Many of the earlier economists also had an academic background but in a different field, such as theology, philosophy, law or engineering, and some of them, like Ricardo and Mill, had no formal academic qualifications at all. A common characteristic of them was that they had acquired their knowledge of economics through independent studies. Although the program of study in economics that Jevons attended at University College was hardly very comprehensive by modern standards, his experience is an important signal that we are approaching a new era with a higher academic status for the subject, and where economists gradually came to see themselves as members of a separate profession.

As early as 1862 Jevons presented a paper to a meeting of a general academic forum. His presentation contained many of the ideas for which he later became famous, but at the time it did not meet with much interest. Disappointed at the reception of his paper, Jevons instead turned his attention toward applied problems, and he wrote a book that became a real best seller. *The Coal Question* (1865) caused a great stir by predicting England's demise as an industrial nation through the depletion of its coal reserves. The book received enormous attention; it was discussed in Parliament, and Jevons was invited to a personal conference with Prime Minister Gladstone.

Thereafter he wrote *The Theory of Political Economy*, the book that has since been regarded as his main work. However, Jevons was not only a theoretical economist. He made important contributions to empirical economics through his work on the construction of price indices, and on business cycles and labour economics. He also worked on logic and the philosophy of science, where his main contribution was *The Principles of Science* (1874). In 1876 he moved to London as professor. He died tragically in a drowning accident some weeks before his 47th birthday.

5.3.1 Marginal Utility Theory

To Jevons, utility is subjective and not an intrinsic quality of commodities. Jevons then turns to the distinction between total utility marginal utility, which he calls "the final degree of utility" and has a careful discussion of the hypothesis that marginal utility is a decreasing function of the quantity consumed.

The declared aim of Jevons's utility theory is to explain the determination of prices, and when one reads his exposition of the theory, there is no doubt that the author has achieved a significant improvement with respect to the role of consumer behavior in formation of prices. His theory is a clear improvement over that of the classical writers, and Jevons is obviously very much aware of it. However, it was only some time after the publication of the book that he became familiar with the work of Jules Dupuit (1804-66) and H.H. Gossen (1810-58), and when the second edition of his book came out in 1879 he added a new introductory chapter in which he gave full recognition to the work of his predecessors. This recognition is mixed with his disappointment at having discovered that his own work had turned out to be less original than he first believed, but he is nevertheless very generous in giving the forerunners credit for their contributions: "Much is clearly due to Dupuit, and of the rest a great share must be assigned to Gossen."

5.3.2 Demand and Prices

With the work of Jevons the consumer side of markets comes to occupy a much more prominent place in price theory. The theory of the demand for consumer goods—although somewhat incompletely developed—is related to a theory of consumer decisions, and Jevons emphasizes strongly the importance of marginal utility for the understanding of prices. His ambition was clearly to develop a general price theory, but whether he achieved it remains at best an open question. In a central passage he writes as follows about the interrelationship between cost of production, supply, marginal utility and price:

Cost of production determines supply;
Supply determines final degree of utility;
Final degree of utility determines value.
(Jevons 1871; 1970, p. 187)

Reading this "tabular form" straight through, it is hard to escape the conclusion that in the end it really is cost of production that determines price or value. It appears from the above passage that Jevons's ambition was clearly to arrive at a general price theory where cost of production as well as consumer demand was to play equivalent roles. However, he had no clear understanding of how to formulate a general

equilibrium theory in which supply and demand are determined by prices, while prices in turn are determined by the condition that supply must equal demand in all markets. Therefore, Jevons cannot be said to have been successful in constructing a general equilibrium model in the modern sense.

He was an expert in mathematical model building. Jevons shows, although without giving the details of the mathematical derivation, that the rate of exchange in quantity terms—the ratio between the number of units of com and beef exchanged in the market—must be equal to the ratio of marginal utilities for consumer A, and also to the corresponding ratio for consumer B. We then have two equations in the two unknowns, namely, the traded quantity of com and the traded quantity of beef. The analysis is impressive and the result is formally correct. But it contains some paradoxical features.

For example, it is limited to a situation of pure exchange where there is no production. Consequently, it cannot tell us anything about the role of production costs in the explanation of prices. The model is of great historical interest since it is the *first example* in the history of economics of a formal mathematical model of general equilibrium in an exchange economy.

5.3.3 The Sunspot Theory

Jevons was also a pioneer of empirical economics. One of his achievements in this area was a study of the long-run development of the price level that is remarkable both for the systematic and thorough collection of data and for the originality of the design of price indices. But among the large number of his empirical studies there is one that is particularly well known and that brought him fame of a more dubious sort. This is his contribution to business cycle theory in the article “The Solar Period and the Price of Com” (1875, published in Jevons 1884).

Like many other economists Jevons had observed the changes between good and bad times, between rise and fall of business cycle. He arrived at the conclusion that the causes of these fluctuations must be sought in factors outside the economic system as such— exogenous factors, as we would say today.

With economics, statistical analysis, and meteorology he tested the hypothesis that the period changes of economic activity could be traced to the periodicity of the sunspots. Sunspots are areas of the sun with especially strong magnetic fields; the more numerous and larger the sunspots the colder is the earth's climate. The periodicity of the sunspots is about 11.1 years, but in the 1870s there were scientists claimed that the periodicity was in fact shorter than previously believed, approximately 10.44 years. Jevons grasped at the new hypothesis, for it fitted much better to his statistical data for the business cycle. His idea was that the fluctuations in the temperature would first affect agricultural crops. Unfortunately for Jevons, this work ended up with disappointment. But Jevons's idea of seeking the causes of the business cycle in exogenous factors is obviously an interesting one from a theoretical point of view.

5.4 Carl Menger (1840-1921)

The Austrian economist Karl Menger was one of the founders of Neoclassical economics. However, Menger's theoretical approach to economics was so distinctive that it was considered a separate school of thought, and known as 'Austrian Economics'. The 'cornerstone' of Austrian is the theory of value and price determination, the foundation Menger laid in his *Principles of Economics* (1871).

5.4.1 The Theory of Value

Menger's theory of value is in understanding the concept of utility, or the degree of satisfaction yielded by consumption of goods. The use-value of a good is determined by its ability to satisfy human's requirements and desires. Since consumers have various needs of differing priority, consumption is allotted in such a way as to address the most important needs first, and the least important afterwards. As needs are satisfied, the value diminishes with each additional unit consumed, and the amount of utility yielded to the consumer declines as well.

Menger's principle was named the 'law of diminishing marginal utility, wherein he reasoned that the price a consumer is willing to pay is determined by the marginal

utility that good will yield. Marginal utility declines with the increase in the volume of consumption, causing an inverse relationship between a good's price and the quantity of it consumed.

Menger concluded that value is thus an entirely subjective category because it is determined individually in a particular situation.

He explained Adam Smith's diamond-water paradox where marginal utility plays decisive role. If a man dying of thirst is offered diamond or a bottle of water, he will surely choose the bottle of water. In this instance, his demand (utility) for water is higher than that for diamonds. Having quenched his thirst, his demand (utility) for water decreases. Thus, if a man has seven bottles of water, the usefulness of any particular bottle is lower to him than if only one bottle is available. However, the marginal utility for diamonds diminishes at a much lower rate because its supply is limited and demand is high. Hence diamonds carry higher monetary value than water, even though water is more useful.

5.5 Ernest Engel (1821-96)

Engel was mainly a statistician and was for many years head of the statistical office of Prussia. His place in the history of economic thought is due to his empirical studies, especially his discovery of what later became known as Engel's Law. In the 1850s, the Belgian statistician Edouard Ducpetiaux had carried out a detailed investigation of the household budgets of Belgian working-class families, and after he had studied these data, Engel in 1857 put forward the hypothesis that there existed an empirical law regarding the composition of consumption, both at the individual and national level: the expenditure on food as a percentage of income falls as income increases. An alternative formulation of the law is that the income or Engel elasticity of food is less than one, where the elasticity is defined as the percentage increase in food expenditure following a 1 per cent increase in income. This law has actually been confirmed in a long series of budget studies for different countries and time periods. It is a common misunderstanding that Engel derived his law from his own studies of working families in Prussia, which is not the case.

In another paper Engel presented empirical estimates of what he referred to as the value of man. For different socioeconomic groups he calculated the expenditure of training a boy to practice his father's profession, demonstrating that this expenditure increased with the father's income and decreased with family size. This contribution is not as well known as his budget studies, but it is an interesting forerunner of the modern research on human capital that began in the 1960s.

In a historical perspective Engel's work is a good example of the fact that the interplay between theoretical and empirical research may develop in ways that were unforeseen at the time. Today, Engel elasticities and Engel curves are central and fruitful concepts in the theory of consumer behaviour that has been founded on the work of the marginalist theorists. In this case, therefore, the history of thought confirms the conclusion that economics as a science must be both theoretical and empirical.

5.6 The Austrian School

Austrian school was a prominent school of economics, founded by Carl Menger in the 1870s. That is why it is reasonable to refer to this group of economists as a separate school; it is at any rate clear that Menger's two best-known followers, Bohm-Bawerk and Wieser, related their own work so closely to that of Menger that it is natural to consider them in the same context.

5.6.1 Eugen von Bohm-Bawerk (1851-1914)

Bohm-Bawerk (1851-1914), a leading economist of the Austrian School, was educated in law and political science, but under the influence of Menger he became gradually more interested in economics. His active years as an academic researcher were before 1889 and after 1904, while in the intervening period he was associated with the Austrian Ministry of Finance, serving as Minister of Finance at three different times. It was during the first period of his academic life, while he taught at the University of Innsbruck, that he made his most important contributions to economic theory.

In his economic writings, he began with a theory of value based on marginal utility and then proceeded to the theory of interest and capital, as it was laid down

in his *Capital and Interest* published in two parts in the years 1884 and 1889. One of the questions that he raised in this book was why the rate of interest is positive. The answer that he gave became famous and is known as “Bohm-Bawerk’s three reasons”. The first is that individuals in general expect that more resources will be available for consumption in the future. The second is people’s systematic tendency to underestimate future needs, which Bohm-Bawerk claimed to be an undisputable psychological fact. Both the first and the second reason imply that consumers must be compensated for transferring resources to the future, since they expect resources to be greater and needs to be less. His third reason was the advantages of “roundabout production”: as trees produce more timber when one lets them grow longer, so other methods of production will be more productive when extended in time.

Bohm-Bawerk further developed his theory in the direction of a general equilibrium perspective, so that the rate of interest was determined as one of the prices in the economy. In this perspective, the discount rate—which is defined as $1/(1+r)$, where r is the rate of interest—is the equilibrium price of consumption one period from now expressed in units of present consumption. However, a weak point of his theory is that it was not formulated as a mathematical model, so that it was difficult to understand how the elements of its rather complicated structure fitted together. In spite of this, Bohm-Bawerk’s theory became very important as a source of inspiration for a number of later economists who took up the study of this set of problems.

Bohm-Bawerk was a very prominent person in the Austrian society of his time, both as a politician, academic, and contributor to public debate. As a polemicist he showed considerable talent in his ability to express himself clearly and to the point, especially perhaps regarding the shortcomings of other people’s efforts. He was the author of one of the classic critiques of Karl Marx’s economic theories in the book *Karl Marx and the Close of His System*, (1896; 1949). On the other hand, he was considerably less willing to admit to shortcomings in his own theories, and during the last years of his life he was mainly occupied with refuting the critical comments of other economists. These came in particular from theorists who were more mathematically orientated.

5.6.2 Friedrich von Wieser (1851-1926)

Like his friend Bohm-Bawerk, Friedrich von Wieser (1851-1926) studied law but was captured by economics from his reading of Menger's *The Principles of Economics*. After having been for some time a professor in Prague, he succeeded Menger in his chair at the University of Vienna. This position he held until 1922 only interrupted for a short interval as minister of trade in 1917. At the university he distinguished himself as an outstanding teacher with broad interests also outside his own field. His most original contribution is contained in his book *Natural Value* (1889), while his *Social Economics* (1914; 1928), was a textbook exposition of the principles of economics as seen by the Austrian school.

As a theorist Wieser is chiefly remembered for two reasons. One of them is that he was the inventor of the term *marginal utility* — ‘Grenznutzen’ in German. It was probably an attempt to translate Jevons's “final degree of utility,” but it is both from a linguistic and mathematical point of view a much better expression and it was translated back into English as “marginal utility.” The invention of a word is obviously a smaller achievement than it is to invent the theory from which the word is derived. However, one should not underestimate the value and importance of having suggestive and precise expressions for the underlying theoretical concepts.

Wieser's other important contribution to economics was his theory of the relationship between commodity and factor prices.

5.7 Leon Walras (1834-1910)

Born in a small town in Normandy, France, Leon Walras (1834-1910) studied in Paris and was active in various fields (journalism, clerk at a railway company, director of a bank) before he was appointed as a professor of political economy at the University of Lausanne in 1870. There he finished his work on the two-part *Elements of Pure Economics*, which he revised several times. It was largely neglected in his own time, inaccessible as it was to contemporary readers.

However, Leon Walras (1834-1910) as a French economist was the first to apply mathematical analysis to the study of general economic equilibrium—the first to write down and solve a multi-equation model of general equilibrium in all markets—that is to say, he has solved the problem of how to formulate a general-equilibrium

theory of the economy, in which he had demonstrated exactly how the price of everything depends on the price of everything else, and of course on the utility, technology, factor supply conditions. That is why he is today famous as the father of the general equilibrium system, although as recently as 1941 it was stated that he was best known as one of the discoverers of marginal utility theory. In fact, Abraham Wald in the 1930s provided the first rigorous proof that solution to a properly formulated general equilibrium model exist. Despite that, Walras's work was so basic that we may argue with Professor Stigler that here was "one of the few times in the history of post-Smithian economics that a fundamentally new ideas has emerged."

How to understand General Economic Equilibrium?

Economic theory has long been associated with the notion of equilibrium, a concept borrowed from Newtonian physics. The market is in equilibrium when supply of goods in the market equals demand for them. Equilibrium can exist in a particular market, as well as in all markets at the same time. The latter situation is called general equilibrium.

Prior to Walras, the idea of equilibrium was applied to individual markets, holding activities in all other markets constant. Such equilibrium is called partial equilibrium. Walras perceived the concept of partial equilibrium as deficient since no market could be viewed in isolation from other markets. A change in demand and supply conditions in one market would upset the demand and supply conditions in another market through feedback effects caused by the initial change.

In his *Elements of Pure Economics* (1874)—that has secured his prominent place in the history of economic thought — Walras proposed a solution to the interdependence of a group of markets. The core of his approach is called 'tatonnement', or 'Groping, a trial-error process in which a price of a commodity is announced by an auctioneer, and buyers and sellers respond to the price with corresponding bids and offers. If there is excess supply over demand at the announced price, then the auctioneer would announce a lower price so that fewer goods supplied and more would be demanded. If these bids and offer do not match each other again, new prices would be called out, and there would be another rounds of bids and offers. The process will continue until a solution is arrived at which supply equals demand. Once equilibrium has been attained, any price change in any market would disturb the previous equilibrium. A new series of adjustments, led by

the Walrasian auctioneer, would take place. Therefore, depending on the change in relative prices, consumers and producers alter the quantities of good consumed and offered until they find themselves in equilibrium. The general economic equilibrium is a situation where consumers and producers in all related markets are in simultaneous equilibrium.

The Walrasian system is highly abstract because in real life such 'auctioneer' does not exist on an economy-wide level. Prices are established imperfectly and there is no built-in mechanism that would lead a system into a simultaneous equilibrium of all markets. However, the importance of Walras's contribution is that he saw all markets as interrelated. The understanding is very important that a change in demand and supply conditions in one market would affect demand and supply conditions in another. Thus Walras's theory of general equilibrium was a major step forward for the theory of price formation in competitive markets.

Walras was the first to work out a theory of general economic equilibrium in the form of an explicit mathematical model. With this he created a framework of analysis that has been of tremendous importance for the further development of the science, and his place in the history of economic thought is indisputable. In fact, Schumpeter (1954, p. 827) remarked: 'As far as pure theory is concerned, Walras is in my opinion the greatest of all economists.' His justification for this claim is that the development of general equilibrium theory is only an achievement by an economist that is comparable to the results of theoretical physics.

5.8 Alfred Marshall (1842-1924)

With Alfred Marshall (1842-1924) we come to the group of economists that many of the most have called the second generation of marginalists.

Alfred Marshall's father was a cashier in the Bank of England, but Marshall wanted to study mathematics and physics, and with the assistance of a wealthy uncle he began his studies at the University of Cambridge in 1861. He gradually turned more toward philosophy and economics, and according to his own account, his interest in economics stemmed from a desire to do something to improve the standard of living of the poorest in society. He began his economic studies by reading Ricardo and Mill, using his mathematical skills to give their theoretical analyses a more precise mathematical form.

After the completion of his studies in 1865, Marshall obtained a fellowship at St. John's College in Cambridge, and he also began to teach economics. In 1877 he married Mary Paley who had been his student and who was also an economist. The couple moved to Bristol, where they both lectured at the newly established University College, and they also collaborated on a book, *The Economics of Industry*, which was published in 1879.

From Bristol, Marshall moved to the University of Oxford, but after two years he returned to Cambridge as professor of economics, a position that he occupied for twenty-three years.

He had achieved a position and reputation that made him the undisputed leader of academic economists in the English-speaking world. This position was strengthened when the *Principles of Economics* was finally published in 1890. The book appeared in eight editions.

His other books include *Industry and Trade* (1919) and *Money, Credit, and Commerce* (1923).

With Alfred Marshall (1842-1924) we come to the group of economists that many have called the second generation of marginalists already told. Marshall being one of them has contributed many in the field of economics: He developed the theory of perfectly competitive markets and integrated into systematic economic analysis the concepts of : consumer and producer surplus, diminishing marginal utility, the contemporary distinction between the short period and long period, the law of diminishing and increasing returns, internal and external economies and other concepts— all related to today's microeconomics. Concerning labour market, he says that the "iron law of wages" of the classical economists is no longer valid in modern society. But we will focus here only the partial equilibrium theory as advanced by Marshall.

5.8.1 Alfred Marshall and Partial Equilibrium Theory

The *Principles* are divided into six main parts, or "books." Of these it is book 5 that has received most attention by later economists, because it is there that Marshall establishes the theoretical framework for partial equilibrium analysis that was to have such an important influence on the development of economics. Partial equilibrium theory—the analysis of price formation in a single market—is forged into an operational tool of analysis.

However, a classic example of Marshall's static partial equilibrium analysis was the way he determined an individual firm's market price by the intersection of the countervailing forces of supply and demand—the now well-known supply and demand diagram, where an upward-sloping supply curve and a downward-sloping demand curve were drawn in the same diagram and where equilibrium is represented by the point of intersection between the two curves—the “Marshallian cross,” as it has been called. In this way, the Marshallian ‘cross’ or ‘scissors’ (figure 5.1), with blades of supply and demand, became a staple of economic analysis. Keynes writes that “after Marshall's analysis there was nothing more to be said” (Keynes 1933, p.182).

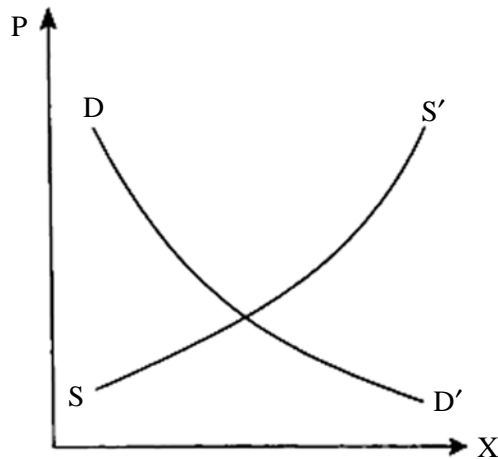


Figure 5.1: Marshall's partial equilibrium diagram.

The equilibrium price (P) and quantity (X) are determined by the intersection between the demand curve DD' and the supply curve SS' . Note that Marshall, in contrast to Cournot, measures price on the vertical and quantity on the horizontal axis. This was motivated by his conception of the “supply price” as a function of the quantity demanded; the supply price is accordingly the price that the producer must receive in order to supply a specific quantity. Similarly the demand curve is defined in terms of the demand price. So it becomes natural to think of supply and demand prices as the dependent variables and quantity as the independent variable for firms and consumers and of equilibrium as defined by the equality of supply and demand prices. In modern theory we stick to the geometrical convention as established by Marshall.

There can be no doubt that the diagram clarified the logic of competitive price theory and was a major improvement over the treatment in Jevons (1871; 1970). Marshall gives supply and demand equivalent roles in the process of price formation and emphasizes with a famous metaphor that none of them can have priority over the other (the metaphor can also be found in Mill's *Principles* . But Marshall's use of it is obviously especially striking because the image of the pair of scissors reminds us of the supply and demand diagram).

Marshall's analysis of the workings of the market economy laid the foundations for what we now call partial equilibrium theory. "Partial" should be understood in contrast to the general equilibrium theory that had been pioneered by Walras.

Marshall was aware that a weakness of partial equilibrium theory was that it might neglect causal factors that were important for the solution of a concrete problem. His main defense of the approach was that the human intellect had "limited powers," so that it was necessary to simplify complex problems in order to understand and be able to solve them. But it was essential to be conscious of the simplifications that one made; one had to be aware of the factors that were disregarded during the analysis but which ought ideally to have been included. This technique of analysis he characterized by means of the Latin term *ceteris paribus*—everything else equal. One area where this technique was especially fruitful and valuable, in Marshall's view, was related to the time dimension of economic problems.

5.8.2 Marshall's Importance

In his overview of Marshall's most important contributions, Keynes (1933) puts great emphasis on the introduction of concept of price elasticity of demand (having a measure of the sensitivity of demand to a change in the price). He says that with regard to the development of terminology and theoretical concepts, this was Marshall's greatest service to economics. The invention of this concept must be regarded as a significant achievement.

Some believe that Alfred Marshall is one of the most important economists in the history of the subject, while others regard him chiefly as one who consolidated the knowledge of his time, but who himself possessed only a small degree of originality. But it can be said that Alfred Marshall was one of the best founders of Neoclassical economics, which is the basic framework that dominates economics to this day. Even though Marshall was not the first to draw the curves of demand and supply to determine the equilibrium level of price and quantity, he is regarded as the founder of the theory of supply and demand, the idea that prices themselves are determined by supply and demand.

Whatever be the debate, Marshall is one of the first among the important economists who exerted an important part of his influence through his teaching, even if his lectures appear to have been almost chaotic. His wife told John Maynard Keynes that Marshall's teaching philosophy was that, by never presenting his topics in a well-ordered and systematic way, he would encourage the students to think for themselves.

Marshall also did much to establish economics as a central field of study in Cambridge. His students—among who were Pigou, Keynes, and many other great names of English economics—were strongly influenced both by his teaching and personality. Pigou's development of the theory of external effects and Keynes's distinction between the short and the long run in macroeconomics were both strongly inspired by Marshall's teaching and writings.

However, there are also who thought *Principles* as the Bible of economics. There emerged a belief among English economists that all theoretical insights of any importance could be found in Marshall.

Many textbooks on the history of thought pay more attention to Marshall's work than to that of any other of the great economists. The most important reason for this may be that his *Principles* forms the bridge between the old and the new.

5.9 Conclusion

In this unit, one can have a better understanding of how the invention of marginal utility concept has evolved over time through the hands of Jevons, Menger, Walras

and Marshall along with the arguments put forth by Walras in general equilibrium theory which ultimately has opened the door of analyzing and the complexity of modern world.

5.10 Summary

Marginalism: The use of marginal concepts in economics is a defining principle of Neoclassical theorists. These concept include marginal utility, marginal cost. Marginalism looks at the effects of small changes occurring in the economic system and how they impact on personal choice and public policy.

Equilibrium: A market is said to be in equilibrium if the demand and supply conditions in it equal each other. For example, equilibrium in labour market will occur when the number of workers willing and able to work is exactly to the number of workers firms demand to hire.

Partial equilibrium: Prior to Walras, the idea of equilibrium was applied to individual markets, holding activities in all other markets constant . Such an equilibrium is called partial equilibrium.

General equilibrium: Economic theory has long been associated with the notion of equilibrium, a concept borrowed from Newtonian physics. The market is in equilibrium when supply of goods in the market equals demand for them. Equilibrium can exist in a particular market, as well as in all markets at the same time. The latter situation is called general equilibrium— a situation where consumers and producers in all related markets are in simultaneous equilibrium.

Theory of tatonnement: The term is not easy to translate. “Groping” has been suggested as a term that communicates some of the essence of the concept, but most economists tend to prefer the French term. The theory states that if prices rise when there is excess demand and fall if there is excess supply, the markets come closer to equilibrium. That is because, for example, a rise in the price of shoes affects the shoe market more than does a rise in the price of cloth. So the market gropes its way to equilibrium. The trouble with this theory is that if trading is actually done at the disequilibrium prices, then people’s income change, hence their demand changes, and

the market result is not the same as the static solution to the general equilibrium equations. The theory is certainly not realistic, as Walras himself said. Don Patinkin thinks that the theory is one of Walras's 'most imaginative and valuable contribution to economic analysis.'

Engel's Law: Engel in 1857 put forward the hypothesis that there existed an empirical law regarding the composition of consumption, both at the individual and national level: the expenditure on food as a percentage of income falls as income increases. An alternative formulation of the law is that the income or Engel elasticity of food is less than one, where the elasticity is defined as the percentage increase in food expenditure following a 1 per cent increase in income.

5.11 Exercise

A. Short-answer Type Questions

1. What is Engel's Law?
2. What is partial Equilibrium?
3. What is general Equilibrium?
4. What is theory of tatonnement?
5. What is "Bohm-Bawerk's three reasons"?

B. Medium-answer Type Questions

1. How did Karl Menger resolve the "diamond- water paradox"?
2. What is Engel's Law? What are the importance of Engel elasticities and Engel curves in a historical perspective?
3. As a theorist frirdrich vonWieser is chiefly remembered for two reasons. What the two reasons?
4. Enumerate Marshall's importance in the history of economic thought.

C. Long-answer Type Questions

1. How did Leon Walras propose a solution to the interdependence of a group of markets?
2. Write down about Alfred Marshall and his partial equilibrium theory.

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Unit 6 □ The Modernization of Economic Theory in the Post War Period

Structure

- 6.1 Objective**
- 6.2 Introduction**
- 6.3 John Maynard Keynes (1883-1946) and the Keynesian Revolution**
- 6.4 John Hicks (1904-89) and General Equilibrium Theory**
- 6.5 Paul Samuelson (1915-2009) and Foundations of Economic Theory**
- 6.6 Conclusion**
- 6.7 Summary**
- 6.8 Exercises**
- 6.9 References**

6.1 Objectives

After reading this unit you will be able to

- know the life and work of John Maynard Keynes;
- learn what Keynesian revolution actually is with the advent of General Theory;
- particularly to be acquainted with Keynes' view on Classists' theory on labour and wages, of consumption and investment, the role of money, Keynesian stabilization policy and the debate between Keynes and Keynesians, and
- also to be acquainted with the new vistas of modernization of economic theory that got a new shape in the hands of Sir John Hicks and Paul A. Samuelson.

6.2 Introduction

LOOKING BACK at the preceding chapters it may seem strange that we have hardly referred to the distinction between micro-and macroeconomics. This distinction plays an important role in modern expositions of economics and is considered of such significance that authors of introductory textbooks often divide their materials into two parts of roughly similar length, one microeconomic and one macroeconomic. The microeconomic part covers the theories of consumer and firm behaviour and of the functioning of markets, leaving to macroeconomics issues like unemployment, inflation, the business cycle, and economic growth. However the partitioning of the field was unknown to the earlier generations of economists. It is worthwhile to mention here that the origin of the terms microeconomics and macroeconomics is not clear, but much suggests that they are due to the Norwegian economist Ragnar Frisch who in a 1933 article used the concepts of micro- and macro-dynamics. The words *microeconomics* and *macroeconomics* were later used by the research group surrounding the Dutch economist Jan Tinbergen, who in his early work was strongly influenced by Frisch.

However, the views of earlier economists before the 1930s concerning the causes of business cycle and of policies against unemployment and inflation rested not a commonly accepted theoretical basis. This state of affairs underwent a radical change during the 1930s, and the person who more than anyone else is associated with the theoretical reorientation is the English economist John Maynard Keynes. Economic doctrine before Keynes was based primarily upon what is now termed microeconomics. Keynes switched from the classical concentration on individual prices and markets and individual demand functions to aggregate analysis, introducing new concepts as discussed below.

After that came two giants in the field of economics Sir John Hicks of English tradition and Paul Anthony Samuelson of American variety, both contributed huge in development of economic ideas.

6.3 John Maynard Keynes (1883-1946) and the Keynesian Revolution

Life and Work

John Maynard Keynes (1883-1946), the most influential Western economist of the 20th century, was born into the university environment in Cambridge, and Cambridge remained his spiritual and partly also his physical home throughout his life. His father John Neville Keynes also began his career as an economist and wrote a book about economic methodology before becoming a university administrator. Maynard—the name used by family and friends—was educated at Eton, one of the elite public schools, and later at the University of Cambridge. He first specialized in mathematics, but under the influence of Alfred Marshall he took up economics as his main academic field of interest. As a matter of fact, his study of economics was short and unsystematic; most of his knowledge of the field was by reading and gradually by his own teaching. Having completed his university education, he took the so-called Civil Service Examination in order to qualify for a position in the government service. Keynes did very well, ending up as number 2 of the 104 who sat for the exam, but, interestingly, his weakest scores were in mathematics and economics.

As a result of his examination performance Keynes obtained a position in the Ministry of Indian Affairs (“India Office”) and later in the Ministry of Finance (“Treasury”). In parallel with his work in the India Office, he studied probability theory and wrote a thesis, *A Treatise on Probability*, which in 1909 he submitted to King’s College in Cambridge as a “fellowship dissertation.” It was published as a book in 1921 and has obtained a place in the history of probability theory. Thematically, it lies on the borderline between mathematics and philosophy.

At the end of the First World War in 1918, he was appointed a member of the British delegation to the Peace Conference in Versailles. Here he soon became uneasy about the policy pursued by the allied powers toward the vanquished Germany, especially about the amount of war reparations that in his view would cause severe damage both to the economy of Germany and the rest of Europe. His book *The Economic Consequences of the Peace* (1919), which combined economic analysis

with vivid descriptions of the negotiation process, caused great public attention and made him world famous. By this book Keynes achieved a position as one whose opinions carried weight on all issues of economic policy.

With this incident, Keynes's bureaucratic career came to an end, at least temporarily, and he returned to Cambridge as teacher and researcher. He never held a professorial chair in Cambridge; his official title was simply Fellow of King's College. This position gave him considerable freedom to write, to speculate on the stock exchange. From 1911 to 1945 he was in charge of the *Economic Journal*, first together with Edgeworth and later as its sole editor. This journal was the leading UK economics journal.

Keynes's first real contribution to his field of research was the book *A Tract on Monetary Reform* (1923). This is a policy book that was concerned with the inflation, deflation, and exchange disequilibrium problems. His trilogy *A Tract on Monetary Reform* (1923), *A Treatise on Money* (1930), (realizing and admitting the shortcomings of these two books and this is what he did in his next book after a hard work for five years) supremely *The General Theory of Employment, Interest, and Money* (1936) contain the Keynes's major contribution to economics. Connected together are theories of the consumption function, aggregate demand, the multiplier, the marginal efficiency of capital, liquidity preference and expectations. Keynes had, he believed, dealt a mortal blow to the economics of classical economists.

Soon after his 1936 triumph his health deteriorated. He had been in poor health after suffering a heart attack in 1937, but he was able to advise on the financing of war and the setting up of a new international economic order (*Bretton Woods*) to succeed the crises of the interwar period.

Although he was a member of the Liberal Party and described by Lenin as 'a bourgeois of the first water', he recommended the extinction of the rentier class (class whose income is entirely derived from the ownership of financial capital or other property) and the socialization of investment.

He died at the relatively early age of sixty-three; it may well have been caused by the heavy work load and extensive travelling that he had taken on during the war years. His parents attended his funeral.

The General Theory

When the *General Theory* was published in 1936, Keynes was already a famous and influential economist both in Britain and abroad, but his earlier work would hardly have qualified him for a place among the great names of economic science. His reputation came with this book. Many of his contemporaries regarded it as the most important book on economics since the *Wealth of Nations*. During his work on the book Keynes received frequent suggestions and comments from a small circle of younger economists that became known as the “Cambridge Circus”; this included people who later became famous in the profession, like Dennis Robertson, James Meade, and Joan Robinson.

Many writers have stressed that the influence of Marshall was on him. Still, there can be no doubt that Keynes considered his *General Theory* to be a definitive break with established views in the area. What was his own view of the path-breaking nature of the book?

Popular views of what *The General Theory* is all about is that its central message is a proposal to increase public spending of the country, in other words to engage in deficit spending in the context of the Great Depression and mass unemployment in the 1930s. Both in Keynes’s own time and later this was widely regarded as his central message. There can be no doubt that *The General Theory* does provide a theoretical foundation for the recommendation of a more active government policy to ensure full employment, which had indeed been a main concern of the author since the 1920s. In other words, state had to undertake a more permanent responsibility for carrying out an economic policy that ensured full employment.

On the other hand, the central theoretical message of the book is that the price and wage mechanism does not function in a way that leads to full employment. When the economy is exposed to shocks, particularly in the form of demand failures, it is quantities, not prices and wages that bear the brunt of adjustment to a new equilibrium. Keynes saw this as a theoretically revolutionary breakthrough.

Keynes and the Classics on Labor and Wages

Keynes begins his analysis in chapter 2 of the *General Theory* by summarizing the classical economists’ view of the labour market.

According to Keynes, the classical theory of employment is based on two fundamental postulates:

1. The wage rate is equal to the value of marginal productivity of labour.
2. The wage rate is equal to the marginal (dis)utility of labour at any given volume of employment.

This is important from the view point of history of historical thought as we do not find any such postulates in the work of Smith, Ricardo, or Mill, who did not know the meaning of terms like *marginal productivity* and *marginal utility*. However, they are to be found in the writings of Marshall and Pigou.

Keynes now defines equilibrium as a state where the demand price of labour is equal to its supply price for all levels of output and employment. This definition of labour market equilibrium is obviously inspired by Marshall's general characterization of market equilibrium. If Keynes instead had been inspired by Walras a more natural definition would have been that at the ruling wage, the demand for labour is equal to its supply. In both cases the implication of the classical view is that the labour market tends toward a competitive equilibrium.

Keynes praised the classical view about frictional unemployment but goes against their explanation of voluntary unemployment. Keynes has two objections to this theory. First, he maintains that the supply of labour depends *both* on the real and the nominal wage rate, that is, both on the purchasing power of wages and on its money value. This argument leads to a fundamental thesis of the book, which is that the nominal wage level is inflexible downward.

The second objection to the classical view of unemployment is, according to Keynes, more fundamental. The classics had argued that it is the wage contract between workers and employers that determines employment. Keynes points out, however, that falling wages will lead to falling prices or at least to expectations of falling prices in the future. These objections clearly imply that one has to think about the labour market within a much broader framework where the whole demand side of the economy must be taken into account to a much larger extent than had been done in the classical theory. The causes of unemployment and the policies to combat it cannot be studied by means of a partial equilibrium analysis of the labour market.

The hypothesis of wage rigidity is a fundamental one in the context of Keynes's theory. This hypothesis was not entirely foreign to the classical economists. The difference between Keynes and the classics on this point was that Keynes considered wage rigidity to be an equilibrium phenomenon, while the Classics thought of wage rigidity as a feature that delayed the normal adjustment to equilibrium in the labour market.

Keynes for the first time introduced the concept of 'rigid wages' in an attempt to explain general equilibrium at less than full employment, what was inconceivable to classical and neoclassical economists prior to him.

Demand and Employment

Keynes had different ideas about the determinants of consumption and investment demand, and he formulated his ideas at the macroeconomic level: in other words, as theories of what determines *aggregate* consumption and investment goods demand. Aggregate income was in his view the main determinant of aggregate demand and therefore of employment and unemployment.

The idea that there exists a stable relationship between aggregate income and aggregate demand was one of Keynes's important contributions to economics. But the foundation for the hypothesis, at least as it appears in the book, is actually quite slender. Keynes refers neither to theory nor to empirical knowledge as justification of the hypothesis. He says (1936, p. 96) that there is a "fundamental psychological law" which implies that when income increases people's consumption will also increase, but by less than the increase in income.—that is, dC/dY , the marginal propensity to consume (MPC), is less than 1 but greater than 0, that is, $(0 < MPC < 1)$, and is probably decreasing with income. He is also of the opinion that the *average propensity to consume*—the ratio of total consumption to total income—also lies between zero and one and is decreasing with income.

With regard to investment, Keynes adopted the assumption that society's capital stock could be taken as given. The time perspective of the analysis was assumed to be so short that in the short run the production capacity of the economy as a whole was fixed. (In this definition of the short run, the influence from the theoretical framework of Marshall is especially clear.) However, capital owners

will wish to increase the capital stock as long as the expected yield on new investment is higher than the market rate of interest; investment demand will therefore be a decreasing function of the interest rate. Detail one will be found in the following arguments

Keynes argued that, given the state of expectations of future income by entrepreneurs, investment was determined by the rate of interest in the following way: the discounted present value of the expected future income stream is

$$R_1/(1+r) + R_2/(1+r)^2 + \dots + R_n/(1+r)^n,$$

where R_i is the anticipated return in year i , r is the discount rate (the rate of interest) being applied, and n is the number of years the equipment is expected to last. What rate of interest, r , should be applied? Keynes said that the entrepreneur took the rate which made the discounted present value equal to the supply price of producing the capital equipment which provided the income stream. This rate of discount he called the “marginal efficiency of capital.” (Irving Fisher had earlier called the same concept the internal rate of return.) As more investment is made, for a given state of expectations, the marginal efficiency of capital falls, as in figure 6.1. That is because the supply price of the equipment rises (rising marginal cost)

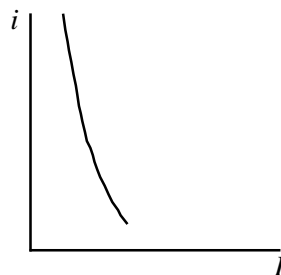


Fig: 6.1

and because the R_i terms fall (decreasing marginal revenue). As expectations change, the whole marginal efficiency of capital schedule shifts to the left or to the right; but, for a given state of expectations, the amount of investment is determined at the point when the marginal efficiency of capital, r , equals the market rate of interest, i . If the marginal efficiency of capital exceeds the market rate, it pays to borrow money and increase investment.

This part of his analysis has much in common with what we find in the work of Irving Fisher of Yale University. But Keynes puts great emphasis on expectations and uncertainty as factors that must be taken into account in the study of investment demand.

In sum, Keynes's view of consumption and investment demand is that while there is a stable relationship between consumption and national income, investment demand is characterized by fluctuations that stem from the fact that expectations about the future are constantly changing, being strongly influenced by speculative considerations.

Consumers decide on the allocation of their income between consumption and saving, while firms decide on the amount of private investment. Because national income also represents the value of society's output, aggregate demand must in equilibrium be equal to output. Denoting the national income or product by Y , consumption by C , and investment by I , we can write the condition for equilibrium between production and demand as $Y=C+I$. But since saving, S , is defined as income minus consumption, we may alternatively write the equilibrium condition as $S=I$. The planned amount of saving must accordingly be equal to planned investment.

However, this equality between production and demand will not necessarily coincide with a state of full employment. For a given wage the demand for labour will be determined by the sum of consumption and investment demand, but there is no guarantee that this demand will correspond to the supply of labour at the same wage. In this perspective, equality of supply and demand for labour becomes the special case on which the classical theory focused, while Keynes's analysis becomes "the general theory".

How will fluctuations in investment demand transmit themselves to national income and employment?

The answer to this question Keynes provided in his theory of the investment multiplier. This had been formulated by one of the young economists in the "Cambridge Circus," Richard Kahn (1931), but Keynes gave it the form that is familiar today. The intuition is simple: an increase in investment of 1 million pounds will increase national income by 1 million *plus* the secondary increase in consumption that is generated by the increase in income. How large the secondary and therefore

the total increase will be, depends on the marginal propensity to consume; the higher is the marginal propensity to consume, the larger is the multiplier that expresses the total increase as a multiple of the original increase in investment. In terms of mathematics this can be expressed as follows: suppose that investment (I) increases by ΔI , where the symbol Δ represents a change. Then the *national* income (Y) will increase by $\Delta Y = b\Delta Y + \Delta I$, where b is the marginal propensity to consume. When we solve this equation for ΔY , we get $\Delta Y = k \Delta I$, where the multiplier k is equal to $1/(1-b)$. Since b is a number between zero and one, the multiplier will be greater than one. Suppose as an example that $b=2/3$, and that $\Delta I=1$ million. Then it follows that $k=3$ and the increase in income becomes $\Delta Y=3$ million pounds.

Note: we should know that while Keynes presents these concepts in mathematical terms, he does not show the actual derivation of the multiplier, although this, from a mathematical point of view, is almost trivially simple. The explanation may be, as Robert Skidelsky (1992, p. 471) has pointed out, that Keynes in spite of his mathematical training was remarkably insecure when he engaged in even quite simple mathematical problems.

We may summarize Keynes's view of the macroeconomic functioning of the market economy as follows: fluctuations in investment demand transmit themselves via their effects on consumption to fluctuations in income that are larger than those of investment. The changes in income will lead to changes in the demand for labour and therefore—because wages are rigid—to changes in employment. Full employment becomes the special case where the demand happens to coincide with the supply of labour, but the normal state of the market economy is one of less than full employment.

The Theory of Demand for Money or The Theory of Liquidity Preference as Keynes Called it

The discussion so far has focused on the connection between aggregate demand and the volume of employment; in terms of the title of Keynes's book we have considered his views on employment but not on interest and prices. The link that Keynes established between the real and the financial side of the analysis appears in the form of his theory of the demand for money or, as he called it, the theory of liquidity preference.

So far, then, we have national income equal to the sum of consumption and investment spending ($Y = C + I$), with $C = f(Y)$ and $I = F(i)$, where i is the market rate of interest. The next step is to determine the market rate of interest.

Keynes argued that interest was a monetary phenomenon and had no business at all in a book such as Marshall's *Principles*, which dealt with the real side of economics. He was thus completely against the tradition of Bohm-Bawerk, Fisher, Marshall, and so on, who analyzed the rate of interest as the outcome of the productivity of capital and the reward for waiting, impatience, time-preference, or some other expression of the preference for present rather than future goods. Keynes expressed this stream of analysis as the proposition that the rate of interest was determined by the demand for investment and the supply of saving; in fact, he said, the classics believed that the rate of interest adjusts so as to make investment equal saving, since a fall in the rate of interest increases I and reduces S , in the classical view. By contrast, Keynes argued that interest was really the payment needed to make people willing to part with liquidity. If you hold your savings in bonds rather than in cash, there is the chance that the price of the bond will fall and you will suffer a loss. In fact, the lower the rate of interest, the higher the price of your bond will be, and the more chance of suffering a loss; therefore the quantity of money demanded for liquidity purposes will be higher, the lower the rate of interest.

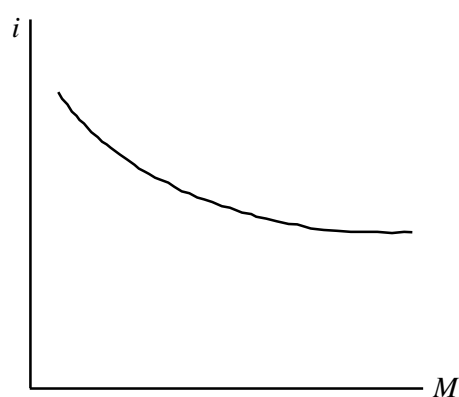


Fig 6.2

Fig 6.2 above shows this relationship. Keynes called this relationship “liquidity preference.”

But the demand for money does not depend solely on the psychology outlined above, which Keynes called the speculative motive. People also demand money for transactions purposes and as a precaution for emergencies or to take advantage of bargains. These two motives are functions of income, while the speculative motive is a function of the rate of interest, that is,

$$L = L_{t+p}(Y) + L_2(i) \quad \text{where } L_{t+p}(Y) > 0 \text{ and } L_2(i) < 0$$

We are now in a position to analyze the economy as Keynes did. Given the amount of money available to satisfy liquidity preference, the rate of interest is determined in the above figure 6.2; with this rate of interest, the amount of investment is determined in the earlier figure 6.1; given this amount of investment, the national income and hence the level of employment will be determined via the multiplier. (Alternatively, the level of income must be such that that the amount of savings, Y-C, will be equal to the amount of investment).

Keynesian Stabilization Policy

Keynes was skeptical about monetary policy as a means of counteracting fluctuations in investment and employment. Why was Keynes skeptical? There were particularly two reasons that made him believe that variations in money supply would be of little importance for macroeconomic stabilization. One was that he considered investment to be relatively insensitive to variations in the rate of interest. If, as an extreme case, one were to assume that this effect was zero, monetary policy would be unable to influence demand, and the only result of expansionary monetary policy would be a lower interest rate. The other reason was that he believed that when the rate of interest became sufficiently low an increase of money supply would be unable to depress it further. In that case also there would be no effect on investment demand. This case was later became known as “liquidity trap” a term coined by Keynes’s Cambridge colleague Robert Dennison. (This “liquidity trap” challenges the classical view that complete flexibility in factor prices brings about a full employment equilibrium). But if the monetary policy is ineffective as a tool of stabilization policy, what other policies were available to replace it?

Keynes’s answer to this question was to focus on fiscal policy. Keynes was more optimistic with regard to the potential of fiscal stabilization, but the consequences in

the form of fiscal deficits during periods of unemployment were unacceptable to many economists and politicians who were used to thinking of the balanced budget—equality between public spending and tax revenue—as an inviolable rule of economic policy.

Another controversial aspect came to the fore in respect of Keynes's analysis of the market economy. In the concluding chapter of the *General Theory* Keynes's argument was that the market system alone was incapable of achieving a state of full employment. The markets were in need of the helping hand of the government to reach this state

Keynes and the Keynesians

Keynes's *General Theory* is a brilliant book. It is written with great literary skill by an author who wants to convince the reader that his vision of the economy is the right one and that the world would be a better place for all if his views were generally accepted. It is full of striking formulations that show deep insight and understanding. However, it has one rather obvious weakness: it never assembles the various parts of the analysis to a consistent whole. Although it became usual to talk about “the Keynesian model,” it is clear that Keynes never wrote down a formal model that could capture the essence of his vision.

This became a challenge for other economists who felt that Keynes's analysis was in need of clarification and increased precision. The *first* to suggest a more formal representation of Keynes's theory was the English economist John R. Hicks in his article “Mr. Keynes and the classics” (1937).

Hicks proceeds to construct a mathematical model that aims to provide a compact summary of the *General Theory* and at the same time illuminate the relationship between Keynes and the “classical” economists. Hicks's model can be written in terms of two equations. The first shows the combinations of national income and the rate of interest that are consistent with equilibrium in the real economy in the sense that planned saving is equal to investment. The first equation may be written as $I(i)=S(Y)$, where i is the rate of interest and Y is national output. The second equation similarly shows which combinations of the national income and the rate of interest create equilibrium in the money market, that is, equality between money demand and supply. The second equation may be written as $L(i,Y) = M$

where $L(i, Y)$ is the demand function for money and M is the money supply. With these two equations we are able to determine the two unknowns of the model—national income and the rate of interest—and thereby also the equilibrium values of consumption and investment. As an illustration of his mathematical model Hicks drew a diagram that later became known as the IS-LM diagram which is shown in the fig 6.3.

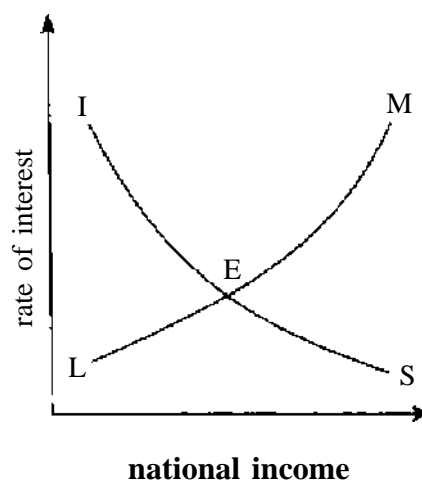


Figure 6.3: Hicks' IS-LM diagram. The point of intersection E between the IS and LM curves represents the equilibrium values of the national income (or national product) and the rate of interest.

The IS curve describes the first of the two equilibrium equations. The lower is the rate of interest, the greater is the demand for investment and the higher must the national income be in order to generate an amount of saving that corresponds to the volume of investment; thus, the curve must be decreasing. The LM curve is a representation of the second equilibrium condition. The higher is the rate of interest, the lower is the demand for money and the higher must the national income be to create a demand for money that absorbs the supply; this implies that the curve must be increasing. At the point of intersection between the two curves we find the equilibrium solution of the model. The Keynesian and classical views can now be illustrated as special cases with regard to the shape of the two curves. The classical view was, according to Hicks, that the LM curve was almost vertical because money demand was independent of the interest rate. By contrast, Keynes's view was that

money demand was very sensitive to changes in the rate of interest; in fact, so sensitive that the LM curve as a special case—the liquidity trap—was practically horizontal for sufficiently low interest rates. In the classical case, an expansionary monetary policy would, by shifting the LM curve to the right, increase total output in the economy, while fiscal policy by moving the IS curve to the right would have no effect on output and employment. In the Keynesian limiting case of the liquidity trap monetary policy would be ineffective while an expansionary fiscal policy would increase demand and employment.

The popularity of the IS-LM model grew so as to establish it as a standard component of every textbook in macroeconomics. But was it a good description of what Keynes really meant? This has been a much disputed question in the literature ever since the article was published. Keynes himself reacted positively to the draft of the article that Hicks sent to him, writing back that he had only minor objections to it. On the other hand, there are indications that he regarded Hicks's article as just a formal exercise that was not particularly interesting. Others, like Joan Robinson, reacted negatively to it, arguing that Hicks failed to bring out the essence of Keynes's analysis of the instability of the market economy and its sensitivity to uncertainty and changing expectations. The controversy reemerged in the theoretical literature in the 1960s and has been a recurrent theme in the debate over the true core of Keynes's theoretical message.

In the United States the major proponent of Keynesian theory was Alvin Hansen (1887-1975) who was professor at Harvard University and who to begin with had been skeptical to the *General Theory* when it was first published. But he changed his views, and especially his book, *A Guide to Keynes* (1953), did much to spread the knowledge of Keynesian thinking in the United States. Probably of even greater importance was the fact that Paul Samuelson gave the new macroeconomics a prominent place in his path-breaking textbook *Economics: An Introductory Analysis*. Here Hansen introduced the so-called 45° diagram that was designed to demonstrate how national income in the short run was determined by aggregate demand.

It is remarkable that both of the two simplifying versions of Keynes's theory neglected the analysis of the labour market that Keynes gave such a prominent place

in the *General Theory*. The basic assumption of the lack of wage flexibility was therefore difficult to perceive in the formal models of Hicks and Samuelson. The result was that generations of economics students were introduced to Keynesian macroeconomics without any discussion of the nature of the labour market. The first introduction was received in the form of the 45° diagram and the second as the IS-LM model. Many never got so far in their studies as to get acquainted with Keynes's theory of the labour market—a paradox, given that the problem of unemployment was the point of departure of the whole analysis. Those who maintained that both simplifications gave misleading interpretations of Keynes's own thinking, could with some justification point out that Hicks's article did not touch on the problem of wage formation, while Samuelson's 45° diagram apparently disregarded the whole triple of "employment, interest, and money."

The Keynesian Revolution

"The Keynesian revolution" is a term that was first used by the American celebrated econometrician and interpreter of Keynes, Lawrence Klein (1947). The expression caught on, especially because the economists that were active at the time actually experienced the breakthrough of Keynesian ideas as a revolution both in economic theory and policy. Mark Blaug has vividly described the reactions to the *General Theory* as

One of the most remarkable episodes in the entire history of economic thought certainly never before and perhaps never since has the economic profession been won over so rapidly and so massively to a new economic theory.

Blaug's description seems to be an exaggeration. But there is little doubt that the economic profession felt that it had entered a period of radical reorientation.

Was the Keynesian revolution in fact a scientific revolution? Yes, of course. Don Potemkin puts it: "the basic structure of the book... defined the framework of both theoretical and empirical research in macroeconomics for decades to come—truly a scientific achievement of the first order."

We know that the Great depression in the 1930s was so universal and deep that many felt that economics had failed both because it had no satisfactory theoretical

explanation of the depression and because it did not provide constructive policy advice; there was in other words a genuine perception of a *scientific crisis*. Neither can there be any doubt that many economists in the years after 1936 felt that they were experiencing a revolution that called for a new agenda for research and a new framework. An important part of Keynes's influence on the research agenda came through his hypotheses about the relationships between macroeconomic variables like income, consumption, investment, and money demand. On the one hand, his ideas inspired the development of a more solid theoretical foundation for his theories than he had *provided*; on the other hand, they gave a strong stimulus to empirical research. Thus, Keynes influenced the development of economics in ways that went far beyond his own specific contribution to theory and policy.

Later in the postwar period Keynesian economics gradually became exposed to serious criticism. But whatever stand one takes on the claims of the different schools of thought, it is obvious that *The General Theory of Employment, Interest, and Money* is one of the most influential books in the history of economics in the sense that it established macroeconomics as a separate field of research and thinking, and that it acted as an encouragement to further research as have few other single contributions in the history of the subject.

Keynes's Other Writings

It is evident that Keynes's reputation as an economic theorist is almost exclusively based on the importance of the *General Theory*, but in addition to this book, he has also made many other valuable additions to the literature of economics. Thus, among the economists whose work we have discussed in this book, he is one of the most prominent historians of thought as well as an outstanding commentator on current economic and political events. His essays on Marshall, Malthus, Edgeworth, and Jevons in his *Essays in Biography* (1933) are gems of the historical literature, and the wide-ranging articles in *Essays in Persuasion* (1931) are fascinating reading.

Keynes also contributed to the development of economic theory in ways that were more indirect. His attack on the Versailles Peace Treaty in *The Economic Consequences of the Peace* (1919) showed great skill for attacking the core of bad policy. In his attack against the Versailles peace treaty he had argued that the large

amounts of war reparations that were imposed on Germany would have as a secondary effect that the terms of trade (the price of exports relative to the price of imports) would turn against Germany, thereby placing a burden on the country's economy that came in addition to the direct payments of reparation. This led to a debate in the *Economic Journal* with the Swedish economist Bertil Ohlin. Ohlin showed that Keynes's reasoning was not sufficiently general and that as a result of transfer payments the terms of trade could in principle develop both in favor and disfavor of the paying country, in this case Germany. The debate came in the literature as "the transfer problem" (the problem of transferring capital in large amounts from one country to another, e.g. the reparation payments Germany had to make after the First World War).

An example of Keynes's ability to comment on and encourage the research of others concerns the mathematician, philosopher and economist Frank Ramsey. In his article on optimal saving, "A Mathematical Theory of Saving" (1928), the problem is formulated as follows: "How much of its income should income a nation save?" Ramsey constructs a mathematical model of utility maximization over time and solves it by means of the so-called calculus of variation, an advanced mathematical technique that was mastered by few economists at the time. In his obituary article on Ramsey (reprinted in the *Essays in Biography*) Keynes says that this article is "terribly difficult reading for an economist." But it was Keynes who in his capacity as editor of the *Economic Journal* accepted the article for publication, an interesting decision by someone who at that time was not known as an economic theorist. Moreover, not only had he read the article, he had really understood the depth of its analysis. Ramsey, after having set out the assumptions on which the analysis is based, writes: "Mr Keynes has shown me that the rule governing the amount to be saved can be determined at once from these considerations" (Ramsey 1928, p. 545). Still, he says, it is best to develop the theory mathematically. Having done this, he then describes Keynes's intuitive mathematical reasoning in detail and shows that it leads to exactly the same solution as his own optimality condition, given a further simplifying assumption. The story shows that Keynes must have had a gift for theoretical abstraction and analysis which he may not have fully exploited when writing the *General Theory*.

How original was Keynes?

There can be no doubt that Keynes was a highly original thinker and writer. There can be no doubt that both the general approach to macroeconomic analysis and many of the more specific components of the *General Theory* are highly original.

6.4 John Hicks (1904-89) and General Equilibrium Theory

General equilibrium theory, as it had been developed by Walras and Pareto, was still relatively unknown to the great majority of economists, and some of the young theorists of the 1930s and 1940s became convinced that both the theory of individual behaviour and the theory of markets were in need of modernization and upgrading. The pioneers in this process were the English economist John Hicks and the American Paul Samuelson.

John Hicks (1904-89), a major extender and clarifier of Keynesian ideas, attended Oxford University where he began as a student of mathematics before switching his interests to the social sciences. So he was not under the direct influence of Marshall. The nature of his education in economics was historical rather than theoretical, and it was only after he started to teach at the London School of Economics that he became seriously interested in theory. From 1938 to 1946 he was professor at the University of Manchester before returning to Oxford in 1946.

A senior colleague at the London School of Economics had encouraged him to read Pareto, and Hicks became convinced that a further development of Pareto's theories should be a main priority of economic research. However, his first book was about labour economics, *The Theory of Wages* (1932). This book deals largely with the marginal productivity theory of wages, including an extensive discussion of the role of trade unions. The book came out four years before Keynes's *General Theory*, and it is interesting to note that not all pre-1936 theorists believed that the labour market could be studied in terms of the theory of perfect competition, which the

impression was given in Keynes's book. As by-products of his labour market analysis, Hicks introduced some new theoretical ideas and concepts: one of them is his analysis of technological progress. Technological progress was defined by the notion that the same quantity of output can be produced with less input of labour and capital than before. What would the consequences of technological progress be for the distribution of income in society? Hicks introduced a classification of technological progress according to the way in which it influenced the so-called functional distribution of income, that is, the distribution of income between labour and capital. If the functional distribution remained unchanged, technical progress was defined to be neutral, while it was classified as labour saving or capital saving according to whether it lowered or raised labour's share of income.

After having written some important articles on the new Keynesian macroeconomics, Hicks published the book that was to become his most influential work, *Value and Capital* in 1939. This is an ambitious attempt to integrate a number of elements from different parts of economic theory. Hicks begins with a discussion of the theory of consumer demand. Having pointed out that Marshall's formulation of this theory has some shortcomings; he gives an exposition of the theory as developed by Pareto. In the main text of the book he gives an elegant diagrammatic presentation of the theory, while the more general mathematical version is in an appendix. Hicks emphasizes that Pareto's formulation rests on a more solid foundation than Marshall's by making less demands on the utility theoretic foundations; one needs only some assumptions about the nature of preferences as expressed in the shape of the indifference curves. Hicks's development of indifference curves and ordinal utility analysis was fundamental. In ordinal utility, unlike the utility theory of Jevons, Walras, and Marshall, it is not necessary to assume that one can at some point devise a quantitative measurement of utility. It is enough to be able to say that a consumer prefers one combination of goods to another; he does not have to say by how much he prefers them. Hicks takes up the thread from Slutsky (1915) and shows graphically how the effect of a price change can be decomposed into income and substitution effects (see figure 6.4). His treatment of the model of consumer behavior has been extremely influential:

the style of exposition is in essence exactly the same as we find in modern textbooks of microeconomics.

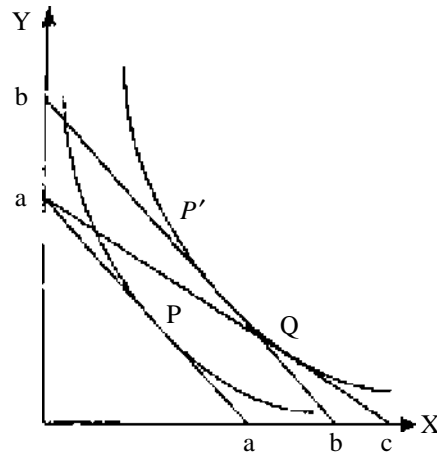


Figure 6.4. The income and substitution effects of a price change. A fall in the price of the X-good makes the budget line shift outward from aa to ac , so that the optimal consumption choice becomes Q instead of P . The increase in the consumer's utility level could alternatively have been achieved by an increase in income, shifting the budget line from aa to bb (touching the same indifference curve as ac) with the optimal choice of P' . The movement from P to P' is the income effect, while that from P' to Q is the substitution effect.

Following his study of consumer theory, Hicks extends the analysis to a general equilibrium model where consumers buy and sell goods under conditions of perfect competition. He goes on to analyze firms' decisions about production and factor use and to consider general equilibrium in an economy with production. In the second part of the book, he generalizes the framework further to a dynamic setting: the development of the economy over time, the accumulation of capital, and the movements of the business cycle. A fascinating aspect of the book is the way in which he explains his integration of elements from Marshall, Pareto, Walras in the way that suggests that they all fit together.

Value and Capital is a very different book from Keynes's *General Theory*. Keynes's aim was to develop a theory that laid a better foundation for economic policy. Hicks's ambition was to create unity and coherence within the theoretical literature as it existed at the end of the 1930s. The application to the theory to

practical problems would have to be treated as a separate matter. According to Hicks, a theorist's role should be in the clarification and explanation of the actual functioning of the economic system.

Hicks did research in a number of different areas of economic theory. Among his early contributions were important articles on welfare economics, where he strove to reconcile Marshall's theory of consumers' surplus with the more general analysis of Pareto, for which he was awarded Nobel Prize for Economics, shared with Kenneth Arrow in 1972. It is to be noted the theoretical justification for many cost-benefit procedures was slight until Hicks published an article in 1943 on consumers' surpluses. A calculation of the net present value of expected costs and expected benefits makes it possible to use the decision rule that a project will only be undertaken if the benefits exceed the costs. The maximization of net social benefits came to be regarded as the appropriate criterion for selecting a project.

Later he published books on Social Framework (1942)—an introductory economics text book, business cycle analysis (*A Contribution to the Theory of the Trade Cycle*, 1950) and consumer theory (*A Revision of Demand Theory*, 1956) before turning his attention to the theory of economic growth in the 1960s (*Capital and Growth*, 1965) and *Capital and Time* (1969). But nothing of what he did later turned out to be as important for the development of economic theory as *Value and Capital*. The style of presentation of the book is unique.

6.5 Paul Samuelson (1915-2009) and Foundations of Economic Theory

While Hicks was developing his economic ideas in England, Paul Samuelson has completed his graduate courses in economics from the University of Chicago by the age of 20 and then moved on to Harvard to complete his education. At that time, the economics departments at Chicago and Harvard had assembled many of the world's leading economists—some of them emigrants from Hitler's Germany—and especially Harvard also attracted some of the most promising economists of the United States. So Samuelson naturally becomes fortunate enough in having as mentors men as distinguished as Knight, Schumpeter, Viner, Leontief. Throughout his academic

carrier he has been at the Massachusetts Institute of Technology (MIT) where he became a full time professor in 1947. As professor at the Massachusetts Institute of Technology (MIT) he helped its economics department achieve a leading position both in the United States and in the world at large. He was awarded the Nobel Prize for Economics in 1970.

Born in Gary, Indiana, Paul Samuelson (1915-2009) is one of the most versatile and influential figures in the history of economics. He has contributed from his MIT offices to virtually all parts of economic analysis. His eminence has made some describe his contributions as ‘the age of Samuelson’.

Samuelson rewrote of the theory of many branches of economics. He began with paper on consumer’ surplus in 1938, derived a demand curve from the revealed preferences of consumers. He published his doctoral thesis as *Foundations of Economic Analysis* (1947). Here he surveyed economic theory in an attempt to move the subject towards comparative dynamics and show how essential a mathematical approach is to economics. To majority of economics students his fame rests on his highly successful influential textbook *Economics: An Introductory Analysis* (1948) now jointly written with Nordhaus where he, apart from many scientific contributions, has also had an important influence on the teaching of economics. Till date it has 12 editions; It has been translated into more than 40 languages and has been printed in millions of copies. There are also many more substantial reasons for its popularity, It is written in a lively and amusing style, it has a good balance between theory and applications, and it explains advanced theoretical insights in a simple and accessible form. There is no doubt that it has helped to form modern economists’ views of what their subject is all about.

One of his book’s very influential ideas was the concept of the “neoclassical synthesis.” As a result of the world economic depression in the 1930s many had come to view the theories of the classical economists—”classical” in the sense of Keynes— as being of little relevance for a world of overproduction and mass unemployment. But this attitude, according to Samuelson, is without foundation. Keynes’s theories have shown us how to use sensible macroeconomic policies to stabilize the economy at a state of full employment. Once this has been achieved, the classical analysis of markets and prices is fully valid; this is the fruitful synthesis of Keynes and the classics.

He was a theoretician of exceptional brilliance, with 388 technical papers published under the title *Collected Scientific Papers* (five volumes). In many technical contributions he has provided a multiplier-accelerator theory of the trade cycle (which through the interaction of multiplier and accelerator may ultimately generate damped cycles, explosive cycles, exponential growth, or asymptotic approach to a constant value of income, depending on the size of the marginal propensity to consume and accelerator), and he has provided a simplification of general equilibrium theory to make it applicable to concrete problems, a revealed preferences theory for welfare economics, a pure theory of public expenditure which takes into account both public and private goods. He had a detailed knowledge of the history of economic thought. For international economics, in particular his importance is for the development of factor abundance theory and factor price equalization theorem. Besides, he published a book *Linear Programming and Economic Analysis* jointly with Robert Dorman and Robert Solow.

The following are some of the major fields he has worked in:

(a) **General Equilibrium:** One application of general equilibrium theory was in international trade, where two major theorems, the Stolper- Samuelson theorem and factor price equalization theorem, are cornerstones. In this field Samuelson is best known for his work on the connection between commodity and factor prices. The point of departure for his contributions in this area was the so-called Heckscher-Ohlin model, first formulated by the Swedish economists Eli Heckscher and Bertil Ohlin. In his analysis of the determinants of international trade, David Ricardo had assumed that while commodities were mobile between countries, factors of production were not. This assumption was taken over by the large majority of later contributors to the international trade literature. But whereas Ricardo had assumed that technologies of production differed between countries, Heckscher (1919; 1950) and Ohlin (1933) assumed instead that technologies were the same while countries differed in terms of their endowments with factors of production. Some countries were relatively well endowed with labour, others with capital. In the Heckscher-Ohlin model, commodity prices were determined in world markets while factor prices were formed in the domestic markets for capital and labour. In an article written jointly with Wolfgang Stolper, Samuelson analyzed the effects of commodity price changes on factor prices

and found that an increase in the price of a commodity leads to an increase in the price of the factor of production that is used intensively in the production of that commodity; for instance, an increase in the world market price of a labour-intensive good will raise domestic wage rates. This is known as *the Stolper-Samuelson theorem* (Stolper and Samuelson 1941).

To take the analysis a step further, suppose that there are two countries in the world, one of which is richly endowed with labour and the other with capital. In the absence of trade, wages will be low in the labour-rich country and high in the capital-rich country while the reverse would be true for the price of capital. With the opening of trade, the labour-rich country will find its comparative advantage to be in labour-intensive products, and with the expansion of output of these products the demand for labour will increase and wages rise. In the capital-rich country, on the other hand, wages will fall and the price of capital rise. Thus, through the effect of international trade in commodities, the prices of the factors of production will be brought closer together. How close? Samuelson (1953-54) showed that under certain conditions the theory implied that factor prices would be completely equalized and that this result was valid beyond the simple case of two factors and two goods. This result is known as *the factor price equalization theorem*.

(b) **Consumption Theory:** Samuelson pushed the Hicks-Allen ordinal indifference curve analysis one layer deeper in abstraction. Rather than assuming that consumers would tell what combinations of goods they preferred, the economists could infer the preferences by observing what combinations they purchased. The principle of “revealed preference” is that if a combination of goods is purchased, that combination is revealed to be preferred to all others which are cheaper at the prevailing prices. Those other combinations can never be revealed to be preferred to the first one at other prices, or else a serious inconsistency is involved.

(c) **Methodology:** In the *Foundations of Economic Analysis* Samuelson proposed that economic theory should be operationally meaningful. Thus the revealed preference indifference curve could be refuted by observing that someone purchases combination A at a higher total cost than B, when he had previously purchased B at prices which made it cost more than A. As a model for how to do research, however, Milton Friedman’s “positive economics” became more popular than operationalism.

(d) **Welfare economics:** A general equilibrium model might show what quantities of goods would be produced and what amount of resources would be used, but would there be some better economic results? Welfare Theorems work with this problem. For example, a Pareto-optimum is a point from which you cannot make one consumer better off without making another one worse off. (In an Edgeworth-Pareto box diagram the indifference curves are tangent and the consumers are on their contract curve). Samuelson gives much credit to Abram Bergson for developing the concept of a social welfare function which would rank all the possible Pareto-optimum points. This function is formulated individualistically rather than dictatorially.

(e) **Capital theory and Growth:** His contributions in famous Cambridge - Cambridge controversy over reswitching of the neoclassical capital model and in capital theory for heterogeneous capital goods are remarkable. Besides, Samuelson in various articles and subsequent writers have gave turnpike theory (a proposition in the theory of economic growth for providing an optimal programme over a finite horizon to reach a particular objective) a new shape.

(f) **Public finance:** In the area of public economics or public finance, Samuelson's most important single contribution is the theory of public goods (Samuelson 1954) and free rider problem. His definition of the concept of public good is that a public good is one that is simultaneously available to all, so that the consumption of one person does not reduce its availability to others (as in the case of national defense). He also showed how one could derive conditions for the optimal allocation of resources to public goods. In case of public goods, the sum all consumers' marginal benefits should be equal to the marginal cost of production. In symbols,

$$MB_1 + MB_2 + \dots + MB_n = MC.$$

Here the symbol *MB* stands for the marginal benefit and subscripts denote the individual consumers in the economy — n in all. This optimality condition, often referred to as the *Samuelson's rule*, is of fundamental importance for the analysis of the expenditure side of government budgets and development of cost –benefit analysis for public sector.

(f) **Others:** Samuelson's other output includes the famous macroeconomic articles, many important articles in the history of economic thought, including analyses of Ricardo and Marx, many articles on stochastic theory and speculative

price, articles on mathematical biology. It is a formidable body of work. According to Assar Lindbeck, Samuelson has done more than anyone else to raise the general analytical and methodological level of central economic theory.

6.6 Conclusion

We have traversed a long path covering the contributions of Keynes, Hicks as well as Samuelson and mentioned in detail their contributions. Without them, modern economics would remain wholly incomplete.

6.7 Key Terms Simplified

IS–LM Curves: Investment-savings and liquidity–money preference curves. An apparatus invented by J.R. Hicks (who originally called them IS and LL curves) and Alvin Hansen to synthesize the Keynesian macroeconomic system. IS curve is the goods market equilibrium curve and LM curve is the money market equilibrium curve. Keynesians believe that the IS curve is steep, with the consequence that fiscal policy is more powerful than monetary policy.

Principle of Revealed Preference: An approach to consumer theory pioneered by Samuelson in place of cardinal utility or indifference curve methods; an empirical utility theory. It does not require complete information about a consumer's tastes but only knowledge of the combinations of goods actually purchased out of a consumer's total income. It is assumed that the consumer is consistent in never choosing a combination which is more expensive than that which is previously preferred.

Stolper-Samuelson theorem: An international trade theorem which states that, when the relative price of one of the two commodities increases, the factor of production used more intensively in its production has an increased real rate of return and the factor less intensively used has a lower rate of return. Samuelson called it 'a magnification effect.'

The factor price equalization theorem: This asserts that free trade in final goods brings about the equalization of factor prices, especially of labour and capital, throughout the world.

Pareto Optimum: A Pareto-optimum is a point from which one cannot make one consumer better off without making another one worse off. (In an Edgeworth-Pareto box diagram the indifference curves are tangent and the consumers are on their contract curve).

6.8 Questions with Answer Hints

A. Short-answer Type Questions

1. Write down the names of the books that contain Keynes's major contribution to economics.
2. Among the economists, whom were associated with the "Cambridge Circus"?
3. The idea of investment multiplier was formulated by which economist? How does multiplier work?
4. What is the importance of the Hicks' article "Mr, Keynes and the Classists" (1932)? What did it fail to point out?
5. What was the central message of the *General Theory*?
6. What, according to Hicks, would the consequences of technological progress be for the distribution of income in society?
7. What is the use of Samuelson's rule in public finance?

B. Medium-answer Type Questions

1. How did Keynes summarize the classical economists' view of the labour market? How did Keynes's differ from those of Classics? In this context. Give arguments.
2. Who coined the term liquidity trap? What is it? Does it reappear in modern world as a theoretical possibility?
3. Mention two major uses of indifference curve analysis as formulated by J.R. Hicks and R.G.D Allen.
4. *Value and Capital* by Hicks is a very different book from Keynes's *General Theory*. Do you agree? Give reasons.
5. What is the contribution of Samuelson's in the field of public finance?

C. Long-answer Type Questions

1. Who first used the term Keynesian revolution? Was the Keynesian revolution in fact a scientific revolution? Explain.
2. State the major contributions of Hicks.
3. Mention some of the major fields Paul Samuelson had worked in.

6.9 References

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