Major Schools of Economic Theory
Prepared for Prof. Casey’s introductory Federal Government Classes

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• Introduction

The word "economics" is derived from οἰκονομίκος (oikonomikos, which means ‘skilled in household management’). Although the word is very old, the discipline of economics as we understand it today is a relatively recent development. Modern economic thought emerged in the 17th and 18th centuries as the western world began its transformation from an agrarian to an industrial society. Despite the enormous differences between then and now, the economic problems with which society struggles remain the same:

• How do we decide what to produce with our limited resources?
• How do we ensure stable prices and full employment of our resources?
• How do we provide a rising standard of living both for ourselves and for future generations?

Progress in economic thought toward answers to these questions tends to take discrete steps rather than to evolve smoothly over time. A new school of ideas suddenly emerges as changes in the economy yield fresh insights and make existing doctrines obsolete. The new school eventually becomes the consensus view, to be pushed aside by the next wave of new ideas.

This process continues today and its motivating force remains the same as that three centuries ago: to understand the economy so that we may use it wisely to achieve society’s goals.

• Ancient Ideas

Some prominent classical scholars assert that relevant economic thought did not arise until the enlightenment, as early economic thought was based on metaphysical principles which are incommensurate with contemporary dominant economic theories such as neo-classical economics. However, several ancient Greek and Roman thinkers made various economic observations, especially Aristotle and Xenophon. Many other Greek writings show understanding of sophisticated economic concepts. For instance, a form of Gresham’s Law is presented in Aristophanes’ Frogs, and beyond Plato’s application of sophisticated mathematical advances influenced by the Pythagoreans is his appreciation of fiat money in his Laws (742a–b) and in the pseudo-Platonic dialogue, Eryxias.

Bryson of Heraclea was a neo-platonic who is cited as having heavily influenced early Muslim economic scholarship.

   ○ Xenophon

The influence of Babylonian and Persian thought on Greek administrative economics is present in the work of Greek historian Xenophon. Discussion of economic principles are especially present in his Oeconomicus, his biography of Cyrus the Great, Cyropaedia, Hiero, and Ways and Means. Hiero is a minor work which includes discussion of leaders stimulating private production and technology through various means including public recognition and prizes. Ways and Means is a short treatise on economic development, and showed an understanding of the importance of taking advantage of economies of scale and advocated laws promoting foreign merchants. The Oeconomicus discusses the administration of agricultural land. In the work, subjective personal value of goods is analyzed and compared with exchange value. Xenophon uses the example of a horse, which may be of no use to a person who does not know how to handle it, but still has exchange value. Although this broadens the idea of value based in individual use to a more general social concept of value that comes through exchange, scholars note that this is not a market theory of value. In Cyropaedia Xenophon presents what in hindsight can be seen as the foundation for a theory of fair exchange in the market.
In one anecdote, the young Cyrus is to judge the fairness of an exchange made between a tall and a short boy. The tall boy forces the pair to exchange tunics, because the tall boy's tunic is too short, shorter than the short boy's, which is too tall for him. Cyrus rules the exchange fair because it results in a better fit for both boys. Cyrus' mentors were not pleased with Cyrus' basing his decision on the values involved, as a just exchange must be voluntary. Later in the biography, Xenophon discusses the concept of division of labor, referencing specialized cooks and workers in a shoemaking shop.

Scholars have noted that Adam Smith's early notes about this concept "read like a paraphrase of Xenophon's discussion of the role of the carpenter as a "jack of all trades" in small cities and as a specialist in large cities. Marx attributes to Cyropaedia the idea that the division of labor correlates to the size of a market. Xenophon also presents an example of mutual advantage from exchange in a story about Cyrus coordinating an exchange of surplus farmland from Armenians, who were herders, and surplus grazing land from Chaldeans, who were farmers.

### Aristotle

Allocation of scarce resources was a moral issue to Aristotle, and in book I of his Politics, Aristotle expresses that consumption was the objective of production, and the surplus should be allocated to the rearing of children, and personal satiation ought to be the natural limit of consumption. (To Aristotle, the question was a moral one: in his era child mortality was high.) In transactions, Aristotle used the labels of "natural" and "unnatural". Natural transactions were related to the satisfaction of needs and yielded wealth that was limited in quantity by the purpose it served. Un-natural transactions aimed at monetary gain and the wealth they yielded was potentially without limits. He explained the un-natural wealth had no limits because it became an end in itself rather than a means to another end—satisfaction of needs. This distinction is the basis for Aristotle's moral rejection of usury. Later, in book VII Chapter 1 of Politics, Aristotle asserts

...external goods have a limit, like any other instrument, and all things useful are of such a nature that where there is too much of them they must either do harm, or at any rate be of no use, to their possessors...

and some interpret this as capturing a concept of diminishing marginal utility, thought there has been marked disagreement about the development and rôle of marginal utility considerations in Aristotle's value theory. Certainly this book formulates an ordinal hierarchy of values, which later appeared in Maslow's contribution to motivation theory.

Aristotle's *Nicomachean Ethics*, particularly book V.v, has been called the most economically provocative analytic writing in ancient Greece. Therein, Aristotle discusses justice in distribution and exchange. Still considering isolated exchanges rather than markets, Aristotle sought to discuss just exchange prices between individuals with different subjective values for their goods. Interestingly, Aristotle suggested three different proportions to analyze distributive, corrective, and reciprocal or exchange transactions: the arithmetic, the geometric, and the harmonic. The harmonic proportion is interesting, as it implies a strong commitment to the subjective values of the traders. Sixth century A.D. philosopher Boethius used the example of 16 as the harmonic mean of 10 and 40. 16 is the same percentage larger than 10 as it is smaller than 40 (60 percent of 10 is 6, while 60 percent of 40 is 24). Thus if two bargainers have subjective prices for a good of 10 and 40, Aristotle points out that in exchange, it is most fair to price the good at 16, due to the equality proportional differences from their price to the new price. Another interesting nuance in this analysis of exchange is that Aristotle also saw a zone of consumer surplus or mutual advantage to both consumers that had to be divided.

### Roman law

Early Greek and Judaic law followed a voluntaristic principle of just exchange; a party was only held to an agreement after the point of sale. Roman law developed the contract recognizing that planning and commitments over time are necessary for efficient production and trade. The large body of law was unified as the *Corpus Juris Civilis* in the 530s AD by Justinian who was Emperor of the Eastern Roman Empire from 526-565 AD. In *Institutiones*, the principle of just trade is stated as *tantum bona valent, quantum vendi possunt* ("goods are worth as much as they can be sold for").
Early Muslim thinkers

Al-Ghazali (1058–1111) classified economics as one of the sciences connected with religion, along with metaphysics, ethics, and psychology. Authors have noted, however, that this connection has not caused early Muslim economic thought to remain static. Persian philosopher Nasir al-Din al-Tusi (1201–1274) presents an early definition of economics (what he calls bekmat-e-madami, the science of city life) in discourse three of his Ethics: 

...the study of universal laws governing the public interest (welfare?) in so far as they are directed, through cooperation, toward the optimal (perfection).

Many scholars trace the history of economic thought through the Muslim world, which was in a Golden Age from the 8th to 13th century and whose philosophy continued the work of the Greek and Hellenistic thinkers and came to influence Aquinas when Europe "rediscovered" Greek philosophy through Arabic translation. A common theme among these scholars was the praise of economic activity and even self-interested accumulation of wealth. Persian philosopher Ibn Miskawayh (b. 1030) notes: The creditor desires the well-being of the debtor in order to get his money back rather than because of his love for him. The debtor, on the other hand, does not take great interest in the creditor.

This view is in conflict with an idea Schumpeter called the great gap. The great gap thesis comes out of Schumpeter's 1954 History of Economic Analysis which offers a break in economic thought during the five hundred year period between the decline of the Greco-Roman civilizations and the work of Thomas Aquinas (1225–1274). However in 1964, Spengler's "Economic Thought of Islam: Ibn Khaldun" appeared in the journal Comparative Studies in Society and History and took a large step in bringing early Muslim scholars to the contemporary West.

The influence of earlier Greek and Hellenistic thought on the Muslim world began largely with Abbasid caliph al-Ma'mun, who sponsored the translation of Greek texts into Arabic in the 9th century by Syrian Christians in Baghdad. But already by that time numerous Muslim scholars had written on economic issues, and early Muslim leaders had shown sophisticated attempts to enforce fiscal and monetary financing, use deficit financing, use taxes to encourage production, the use of credit instruments for banking, including rudimentary savings and checking accounts, and contract law.

Among the earliest Muslim economic thinkers was Abu Yusuf (731–798), a student of Abu Hanifah. Abu Yusuf was chief jurist for Abbasid Caliph Harun al-Rashid, for whom he wrote the Book of Taxation (Kitab al-Kharaj). This book outlined Abu Yusuf's ideas on taxation, public finance, and agricultural production. He discussed proportional tax on produce instead of fixed taxes on property as being superior as an incentive to bring more land into cultivation. He also advocated forgiving tax policies which favor the producer and a centralized tax administration to reduce corruption. Abu Yusuf favored the use of tax revenues for socioeconomic infrastructure, and included discussion of various types of taxes, including sales tax, death taxes, and import tariffs.

The power of supply and demand was understood to some extent by various early Muslim scholars as well. Ibn Taymiyyah illustrates: "If desire for goods increases while its availability decreases, its price rises. On the other hand, if availability of the good increases and the desire for it decreases, the price comes down."

Ibn Khaldun on economic growth

When civilization [population] increases, the available labor again increases. In turn, luxury again increases in correspondence with the increasing profit, and the customs and needs of luxury increase. Crafts are created to obtain luxury products. The value realized from them increases, and, as a result, profits are again multiplied in the town. Production there is thriving even more than before. And so it goes with the second and third increase. All the additional labor serves luxury and wealth, in contrast to the original labor that served the necessity of life.

Ibn Khaldun on economic growth
Perhaps the most well known Islamic scholar who wrote about economics was Ibn Khaldun of Tunisia (1332–1406), considered a father of modern economics. He wrote on economic and political theory in the introduction, or *Muqaddimah* (Prolegomena), of his *History of the World (Kitab al-Ibar)*. In the book, he discussed what he called *asabiyyah* (social cohesion), which he sourced as the cause of some civilizations becoming great and others not. Ibn Khaldun felt that many social forces are cyclic, although there can be sudden sharp turns that break the pattern. His idea about the benefits of the division of labor also relate to *asabiyya*, the greater the social cohesion, the more complex the successful division may be, the greater the economic growth. He noted that growth and development positively stimulate both supply and demand, and that the forces of supply and demand are what determine the prices of goods. He also noted macroeconomic forces of population growth, human capital development, and technological developments effects on development. In fact, Ibn Khaldun thought that population growth was directly a function of wealth.

Although he understood that money served as a standard of value, a medium of exchange, and a preserver of value, he did not realize that the value of gold and silver changed based on the forces of supply and demand. He also introduced the concept known as the Khaldun-Laffer Curve (the relationship between tax rates and tax revenue increases as tax rates increase for a while, but then the increases in tax rates begin to cause a decrease in tax revenues as the taxes impose too great a cost to producers in the economy).

- **Middle Ages**

**Thomas Aquinas** (1225–1274) was an Italian theologian and writer on economic issues. He taught in both Cologne and Paris, and was part of a group of Catholic scholars known as the Schoolmen, who moved their enquiries beyond theology to philosophical and scientific debates. In the treatise *Summa Theologica* Aquinas dealt with the concept of a just price, which he considered necessary for the reproduction of the social order. Bearing many similarities with the modern concept of long run equilibrium a just price was supposed to be one just sufficient to cover the costs of production, including the maintenance of a worker and his family. He argued it was immoral for sellers to raise their prices simply because buyers were in pressing need for a product.

Aquinas discusses a number of topics in the format of questions and replies, substantial tracts dealing with Aristotle's theory. Questions 77 and 78 concern economic issues, mainly relate to what a just price is, and to the fairness of a seller dispensing faulty goods. Aquinas argued against any form of cheating and recommended compensation always be paid in lieu of good service. Whilst human laws might not impose sanctions for unfair dealing, divine law did, in his opinion.

One of Aquinas' main critics was **Duns Scotus** (1265–1308) in his work *Sententiae* (1295). Originally from Duns Scotland, he taught in Oxford, Cologne and Paris. Scotus thought it possible to be more precise than Aquinas in calculating a just price, emphasising the costs of labour and expenses – though he recognised that the latter might be inflated by exaggeration, because buyer and seller usually have different ideas of what a just price comprises. If people did not benefit from a transaction, in Scotus' view, they would not trade. Scotus defended merchants as performing a necessary and useful social role, transporting goods and making them available to the public.

- **Mercantilism**

Mercantilism was the economic philosophy adopted by merchants and statesmen during the 16th and 17th centuries. Mercantilists believed that a nation's wealth came primarily from the accumulation of gold and silver. Nations without mines could obtain gold and silver only by selling more goods than they bought from abroad. Accordingly, the leaders of those nations intervened extensively in the market, imposing tariffs on foreign goods to restrict import trade, and granting subsidies to improve export prospects for domestic goods. Mercantilism represented the elevation of commercial interests to the level of national policy.

Mercantilism is the economic doctrine in which government control of foreign trade is of paramount importance for ensuring the prosperity and security of the state. In particular, it demands a positive balance of trade. Mercantilism dominated Western European economic policy and discourse from the 16th to late-18th centuries. Mercantilism was a cause of frequent European wars in that time and motivated colonial expansion. Mercantilist theory varied in
sophistication from one writer to another and evolved over time. Favors for powerful interests were often defended with mercantilist reasoning.

From the localism of the Middle Ages, the waning feudal lords, new national economic frameworks began to be strengthened. From 1492 and explorations like Christopher Columbus' voyages, new opportunities for trade with the New World and Asia were opening. New powerful monarchies wanted a powerful state to boost their status. Mercantilism was a political movement and an economic theory that advocated the use of the state's military power to ensure local markets and supply sources were protected. Mercantile theorists thought international trade could not benefit all countries at the same time. Because money and gold were the only source of riches, there was a limited quantity of resources to be shared between countries. Therefore, tariffs could be used to encourage exports (meaning more money comes into the country) and discourage imports (sending wealth abroad). In other words a positive balance of trade ought to be maintained, with a surplus of exports. The term mercantilism was not in fact coined until the late 1763 by Victor de Riqueti, marquis de Mirabeau and popularised by Adam Smith, who vigorously opposed its ideas.

Mercantilist policies have included:

- High tariffs, especially on manufactured goods;
- Monopolizing markets with staple ports;
- Exclusive trade with colonies;
- Forbidding trade to be carried in foreign ships;
- Export subsidies;
- Banning all export of gold and silver;
- Promoting manufacturing with research or direct subsidies;
- Limiting wages;
- Maximizing the use of domestic resources;
- Restricting domestic consumption with non-tariff barriers to trade.

Jean-Baptiste Colbert's work in seventeenth century France exemplified classical mercantilism. In the English-speaking world its ideas were criticized by Adam Smith with the publication of *The Wealth of Nations* in 1776 and later David Ricardo with his explanation of comparative advantage, but policy changes did not follow in either's lifetime, even in Britain. Mercantilism reached its low-water mark in the last half of the nineteenth century as the British Empire embraced free-trade and used its power as the financial center of the world to promote the same.

Mercantilism in its simplest form was naive bullionism, but mercantilist writers emphasized the circulation of money and rejected hoarding. Their emphasis on monetary metals accords with current ideas regarding the money supply, such as the stimulative effect of a growing money supply. Specie concerns have since been rendered moot by fiat money and floating exchange rates. In time, the heavy emphasis on money was supplanted by industrial policy, accompanied by a shift in focus from the capacity to carry on wars to promoting general prosperity. Mature neo-mercantilist theory recommends selective high tariffs for "infant" industries or to promote the mutual growth of countries through national industrial specialization. Currently, advocacy of mercantilist methods for maintaining high wages in advanced economies are popular among workers in those economies, but such ideas are rejected by most policymakers and economists.

Thomas Mun (1571–1641) as a major creator of the mercantile system, especially in his posthumously published *Treasure by Foreign Trade* (1664), which Smith considered the archetype or manifesto of the movement. Perhaps the last major mercantilist work was James Steuart’s *Principles of Political Economy* published in 1767.

"Mercantilist literature" also extended beyond England. For example, Italy, France, and Spain produced noted writers of mercantilist themes including Italy's Giovanni Botero (1544–1617) and Antonio Serra (1580–2); France's, Jean Bodin, Colbert and other physiocrats precursors; and the Spanish School of Salamanca writers Francisco de Vitoria (1480 or 1483–1546), Domingo de Soto (1494–1560), Martin de Azpilcueta (1491–1586), and Luis de Molina (1535–1600). Themes also existed in writers from the German historical school from List, as well as followers of the
"American system" and British "free-trade imperialism," thus stretching the system into the 19th century. However, many British writers, including Mun and Misselden, were merchants, while many of the writers from other countries were public officials. Beyond mercantilism as a way of understanding the wealth and power of nations, Mun and Misselden are noted for their viewpoints on a wide range of economic matters.

The Austrian lawyer and scholar Philipp Wilhelm von Hornick, in his *Austria Over All, If She Only Will* of 1684, detailed a nine-point program of what he deemed effective national economy, which sums up the tenets of mercantilism comprehensively.

- That every inch of a country's soil be utilized for agriculture, mining or manufacturing.
- That all raw materials found in a country be used in domestic manufacture, since finished goods have a higher value than raw materials.
- That a large, working population be encouraged.
- That all export of gold and silver be prohibited and all domestic money be kept in circulation.
- That all imports of foreign goods be discouraged as much as possible.
- That where certain imports are indispensable they be obtained at first hand, in exchange for other domestic goods instead of gold and silver.
- That as much as possible, imports be confined to raw materials that can be finished [in the home country].
- That opportunities be constantly sought for selling a country's surplus manufactures to foreigners, so far as necessary, for gold and silver.
- That no importation be allowed if such goods are sufficiently and suitably supplied at home.

Other than Von Hornick, there were no mercantilist writers presenting an overarching scheme for the ideal economy, as Adam Smith would later do for classical economics. Rather, each mercantilist writer tended to focus on a single area of the economy. In spite of Adam Smith's repudiation of mercantilism, prominent figures continued to favor it: in the U.S., the likes of Alexander Hamilton, Henry Clay, Henry Charles Carey, and Abraham Lincoln; and in Britain Thomas Malthus.

**British enlightenment**

Britain had gone through some of its most troubling times through the 17th century, enduring not only political and religious division in the English Civil War, King Charles I's execution and the Cromwellian dictatorship, but also the plagues and fires. The monarchy was restored under Charles II, who had catholic sympathies, but his successor King James II was swiftly ousted. Invited in his place were Protestant William of Orange and Mary, who assented to the Bill of Rights 1689 ensuring that the Parliament was dominant in what became known as the Glorious revolution.

The upheaval had seen a number of huge scientific advances, including Robert Boyle's discovery of the gas pressure constant (1660) and Sir Isaac Newton's publication of *Philosophiae Naturalis Principia Mathematica* (1687), which described the three laws of motion and his law of universal gravitation. All these factors spurred the advancement of economic thought. For instance, Richard Cantillon (1680–1734) consciously imitated Newton's forces of inertia and gravity in the natural world with human reason and market competition in the economic world. In his *Essay on the Nature of Commerce in General*, he argued rational self interest in a system of freely adjusting markets would lead to order and mutually compatible prices. Unlike the mercantilist thinkers however, wealth was found not in trade but in human labour. The first person to tie these ideas into a political framework was John Locke.

**John Locke**

John Locke (1632–1704) was born near Bristol and educated in London and Oxford. He is considered one of the most significant philosophers of his era mainly for his critique of Thomas Hobbes' defense of absolutism in *Leviathan* (1651) and the development of social contract theory. Locke believed that people contracted into society which was bound to protect their rights of property. He defined property broadly to include people's lives and liberties, as well as their wealth. When people combined their labour with their surroundings, then that created property rights. In his *Second Treatise on Civil Government* (1689),
God hath given the world to men in common... Yet every man has a property in his own person. The labour of his body and the work of his hands we may say are properly his. Whatevsoever, then, he removes out of the state that nature hath provided and left it in, he hath mixed his labour with, and joined to it something that is his own, and thereby makes it his property.

Locke was arguing that not only should the government cease interference with people's property (or their "lives, liberties and estates") but also that it should positively work to ensure their protection. His views on price and money were laid out in a letter to a Member of Parliament in 1691 entitled Some Considerations on the Consequences of the Lowering of Interest and the Raising of the Value of Money (1691). Here Locke argued that the "price of any commodity rises or falls, by the proportion of the number of buyers and sellers," a rule which "holds universally in all things that are to be bought and sold."

- **Dudley North**

Dudley North (1641–1691) was a wealthy merchant and landowner. He worked as an official for the Treasury and was opposed to most mercantile policy. In his Discourses upon trade (1691), which he published anonymously, he argued that the assumption of needing a favourable trade balance was wrong. Trade, he argued, benefits both sides, it promotes specialisation, the division of labour and produces an increase in wealth for everyone. Regulation of trade interfered with these benefits by reducing the flow of wealth.

- **David Hume**

David Hume (1711–1776) agreed with North's philosophy and denounced mercantile assumptions. His contributions were set down in Political Discourses (1752), later consolidated in his Essays, Moral, Political, Literary (1777). Added to the fact that it was undesirable to strive for a favourable balance of trade it is, said Hume, in any case impossible. Hume held that any surplus of exports that might be achieved would be paid for by imports of gold and silver. This would increase the money supply, causing prices to rise. That in turn would cause a decline in exports until the balance with imports is restored.

- **Physiocracy**

- from the Greek for "Government of Nature"- it’s proponents, the Physiocrats, a group of 18th century French philosophers, developed the idea of the economy as a circular flow of income and output. They opposed the Mercantilist policy of promoting trade at the expense of agriculture because they believed that agriculture was the sole source of wealth in an economy. As a reaction against the Mercantilists' copious trade regulations, the Physiocrats advocated a policy of laissez-faire, which called for minimal government interference in the economy.

The movement was particularly dominated by François Quesnay (1694–1774) and Anne-Robert-Jacques Turgot (1727–1781). The most significant contribution of the Physiocrats was their emphasis on productive work as the source of national wealth. This is in contrast to earlier schools, in particular mercantilism, which often focused on the ruler's wealth, accumulation of gold, or the balance of trade. A chief weakness from the viewpoint of modern economics is that the theory only considered agricultural labor to be valuable. Physiocrats viewed the production of goods and services as consumption of the agricultural surplus, while modern economists consider these to be productive activities which add to national income.

- **Natural Order**

The Physiocrats thought there was a "Natural order" that allowed human beings to live together. Men did not come together via a somewhat arbitrary "social contract". Rather, we have to discover the laws of the natural order that will allow individuals to live in society without losing significant freedoms.

- **Individualism and Laissez-faire**
The Physiocrats, especially Turgot, believed that self-interest was the motivating reason for each segment of the economy to play its role. Each individual was best suited to determine what goods he wanted and what work would provide him with what he wanted out of life. While a person might labor for the benefit of others, he will work harder for the benefit of himself; however, each person's needs are being supplied by many other people. The system works best when there is a complementary relationship between one person's needs and another person's desires, and trade restrictions place an unnatural barrier to achieving one's goals.

- **Private property**

None of the theories concerning the value of land could work without strong legal support for the ownership of private property. Combined with the strong sense of individualism, private property becomes a critical component.

- **Diminishing returns**

Turgot was one of the first to recognize that “successive applications of the variable input will cause the product to grow, first at an increasing rate, later at a diminishing rate until it reaches a maximum.” This was a recognition that the productivity gains required to increase national wealth had an ultimate limit, and, therefore, wealth was not infinite.

- **Investment capital**

Both Quesnay and Turgot recognized that capital was needed by farmers to start the production process, and both were proponents of using some of each year’s profits to increase productivity. Capital was also needed to sustain the laborers while they produced their product. Turgot recognizes that there is opportunity cost and risk involved in using capital for something other than land ownership, and he promotes interest as serving a “strategic function in the economy.”

- **Overpopulation concern**

The Physiocrats predicted that mankind would outgrow its resources: given the finite amount of land, it would not be able to support an endlessly increasing population, thus presaging Malthus.

**Classical School**

The Classical School of economics was developed about 1750 and lasted as the mainstream of economic thought until the late 1800’s. Adam Smith's *Wealth of Nations*, published in 1776 can be used as the formal beginning of Classical Economics but it actually it evolved over a period of time and was influenced by Mercantilist doctrines, Physiocracy, the enlightenment, classical liberalism and the early stages of the industrial revolution. Adam Smith [1723-1790] is recognized as the originator of Classical Economics. John Stuart Mill [1806-1873] is often regarded as the synthesizer of the school.

Smith's vision of a free market economy, based on secure property, capital accumulation, widening markets and a division of labour contrasted with the mercantilist tendency to attempt to "regulate all evil human actions." Smith believed there were precisely three legitimate functions of government. The third function was...

...erecting and maintaining certain public works and certain public institutions, which it can never be for the interest of any individual or small number of individuals, to erect and maintain... Every system which endeavours... to draw towards a particular species of industry a greater share of the capital of the society than what would naturally go to it... retards, instead of accelerating, the progress of the society toward real wealth and greatness.

In addition to the necessity of public leadership in certain sectors Smith argued, secondly, that cartels were undesirable because of their potential to limit production and quality of goods and services. Thirdly, Smith criticised government support of any kind of monopoly which always charges the highest price "which can be squeezed out of the buyers". The existence of monopoly and the potential for cartels, which would later form the core of
competition law policy, could distort the benefits of free markets to the advantage of businesses at the expense of consumer sovereignty.

The classical economists were referred to as a group for the first time by Karl Marx. One unifying part of their theories was the labour theory of value, contrasting to value deriving from a general equilibrium of supply and demand. These economists had seen the first economic and social transformation brought by the Industrial Revolution: rural depopulation, precariousness, poverty, apparition of a working class. They wondered about the population growth, because the demographic transition had begun in Great Britain at that time. They also asked many fundamental questions, about the source of value, the causes of economic growth and the role of money in the economy. They supported a free-market economy, arguing it was a natural system based upon freedom and property. However, these economists were divided and did not make up a unified current of thought.

A notable current within classical economics was underconsumption theory, as advanced by the Birmingham School and Malthus in the early 19th century. These argued for government action to mitigate unemployment and economic downturns, and was an intellectual predecessor of what later became Keynesian economics in the 1930s. Another notable school was Manchester capitalism, which advocated free trade, against the previous policy of mercantilism.

Classical economics as the predominant school of mainstream economics ends with the “Marginalist Revolution” and the rise of Neoclassical Economics in the late 1800’s. In the 1870's William Stanley Jevons' and Carl Menger's concept of marginal utility and Léon Walras' general equilibrium theory provided the foundations. Henry Sidgwick, F.Y. Edgeworth, Vilfredo Pareto and Alfred Marshall provided the tools for Neoclassical economics. Neoclassical economics is an extension of Classical economics but, the focus of the questions changed as well as the tools of analysis. In spite of the dominance of Neoclassical thought, Classical Economics has persisted and influences modern economics, particularly the "New Classical Economics." The belief in the efficacy of a “free market” is central to both classical and neoclassical ideology.

Major contributors to the Classical School include:

- David Ricardo [1772-1823], *On The Principles Of Political Economy And Taxation* (1817)
- James Mill [1773-1836], *Elements Of Political Economy*(1821)
- Jean-Baptiste Say [1767-1832], *Traite D'economie Politique* (1803, English 1821)
- Nassau William Senior [1790-1864], *An Outline Of The Science Of Political Economy* (1836)
- Karl Marx [1818-1883], *The Communist Manifesto* (1848), *Grundriss Der Kritik Politischen Okonomie* (1859) *Das Kapital* (1867)
- John Stuart Mill [1806-1873, son of James Mill], *Principles Of Political Economy* (1848)

Foundations of Classical School in the “Industrial Revolution” - The industrial revolution arose out of the past, took centuries and included social, intellectual and agrarian revolutions as well as “industrial” changes. Concomitantly the “Scientific revolution,” the rise of “natural law” and the separation of “knowledge” from theology supported such changes. Major factors were:

- Protestantism [1571] (Martin Luther [1483-1546] and John Calvin [1509-1564] especially)
- Nicholas Copernicus [1473-1543]
- Francis Bacon [1561-1626] - empiricism
Galileo Galilei [1564-1642] - empiricism
Rene Descartes [1569-1650] - rationalism
Johannes Kepler [1571-1630]
William Harvey [1578-1657] - circulation of blood
John Locke [1632-1704] – individualism, the role and secular justification of property
Baruch Spinoza [1632-1677] - rationalism
directed by knowable laws”, mathematical concept of rates of change
G.W. Leibniz [1646-1716] - optimism
David Hume [1711-1776] - positivism
Immanuel Kant [1724-1804] reason
xiv) Scientific societies [gave cohesion and direction to science]


While Adam Smith would be regarded as the originator and leader of the school, David Ricardo [1772-1823] should be credited with establishing the form and methods of the school. The debates between Thomas Malthus [1766-1834] and David Ricardo about policy issues such as the "Corn Laws" and the "Poor Laws" contributed to the focus and form of the school. Smith was concerned about the nature of economic growth. Malthus, Ricardo and other classical economists were concerned about the question of “distribution.” One important debate among classical economists was whether there was or wasn’t a “surplus” or “glut.” Jean Baptiste Say [1767-1832] and Malthus were the two major protagonists in the question about the existence of a surplus and its effects on a market economy.

Thomas Robert Malthus used the idea of diminishing returns to explain low living standards. Population, he argued, tended to increase geometrically, outstripping the production of food, which increased arithmetically. The force of a rapidly growing population against a limited amount of land meant diminishing returns to labor. The result, he claimed, was chronically low wages, which prevented the standard of living for most of the population from rising above the subsistence level.

Malthus also questioned the automatic tendency of a market economy to produce full employment. He blamed unemployment upon the economy's tendency to limit its spending by saving too much, a theme that lay forgotten until John Maynard Keynes revived it in the 1930s.

Coming at the end of the Classical tradition, John Stuart Mill parted company with the earlier classical economists on the inevitability of the distribution of income produced by the market system. Mill pointed to a distinct difference between the market's two roles: allocation of resources and distribution of income. The market might be efficient in allocating resources but not in distributing income, he wrote, making it necessary for society to intervene.

Jeremy Bentham

Jeremy Bentham (1748–1832) was perhaps the most radical thinker of his time, and developed the concept of utilitarianism. Bentham was an atheist, a prison reformer, animal rights activist, believer in universal suffrage, free speech, free trade and health insurance at a time when few dared to argue for any. He was schooled rigorously from an early age, finishing university and being called to the bar at 18. His first book, A Fragment on Government
(1776) published anonymously was a trenchant critique of William Blackstone's Commentaries of the laws of England. This gained wide success until it was found that the young Bentham, and not a revered Professor had penned it. In The Principles of Morals and Legislation (1791) Bentham set out his theory of utility.

The aim of legal policy must be to decrease misery and suffering so far as possible while producing the greatest happiness for the greatest number. Bentham even designed a comprehensive methodology for the calculation of aggregate happiness in society that a particular law produced, a felicific calculus. Society, argued Bentham, is nothing more than the total of individuals, so that if one aims to produce net social good then one need only to ensure that more pleasure is experienced across the board than pain, regardless of numbers. For example, a law is proposed to make every bus in the city wheelchair accessible, but slower moving as a result than its predecessors because of the new design. Millions of bus users will therefore experience a small amount of displeasure (or "pain") in increased traffic and journey times, but a minority of people using wheelchairs will experience a huge amount of pleasure at being able to catch public transport, which outweighs the aggregate displeasure of other users. Interpersonal comparisons of utility were allowed by Bentham, the idea that one person's vast pleasure can count more than many others' pain. Much criticism later showed how this could be twisted, for instance, would the felicific calculus allow a vastly happy dictator to outweigh the dredging misery of his exploited populus? Despite Bentham's methodology there were severe obstacles in measuring people's happiness.

David Ricardo (1772–1823) was born in London. By the age of 26, he had become a wealthy stock market trader and bought himself a constituency seat in Ireland to gain a platform in the British parliament's House of Commons.[36] Ricardo's best known work is his Principles of Political Economy and Taxation, which contains his critique of barriers to international trade and a description of the manner the income is distributed in the population. Ricardo made a distinction between the workers, who received a wage fixed to a level at which they can survive, the landowners, who earn a rent, and capitalists, who own capital and receive a profit, a residual part of the income.[37] If population grows, it becomes necessary to cultivate additional land, whose fertility is lower than that of already cultivated fields, because of the law of decreasing productivity. Therefore, the cost of the production of the wheat increases, as well as the price of the wheat: The rents increase also, the wages, indexed to inflation (because they must allow workers to survive) too. Profits decrease, until the capitalists can no longer invest. The economy, Ricardo concluded, is bound to tend towards a steady state.

To postpone the steady state, Ricardo advocates to promote international trade to import wheat at a low price to fight landowners. The Corn Laws of the UK had been passed in 1815, setting a fluctuating system of tariffs to stabilise the price of wheat in the domestic market. Ricardo argued that raising tariffs, despite being intended to benefit the incomes of farmers, would merely produce a rise in the prices of rents that went into the pockets of landowners.[38] Furthermore, extra labour would be employed leading to an increase in the cost of wages across the board, and therefore reducing exports and profits coming from overseas business. Economics for Ricardo was all about the relationship between the three "factors of production": land, labour and capital. Ricardo demonstrated mathematically that the gains from trade could outweigh the perceived advantages of protectionist policy. The idea of comparative advantage suggests that even if one country is inferior at producing all of its goods than another, it may still benefit from opening its borders since the inflow of goods produced more cheaply than at home, produces a gain for domestic consumers.[39] According then to Ricardo, this concept would lead to a shift in prices, so that eventually England would be producing goods in which its comparative advantages were the highest.

- **Capitalism**

Between primitive society founded on a natural economy in which production is limited to use values destined for self-consumption by their producers, and capitalist society, there stretches a long period in human history, embracing essentially all human civilizations, which came to a halt before reaching the frontiers of capitalism. We can define them as societies in which small-scale commodity production prevailed. A society of this kind is already familiar with the production of commodities, of goods designed for exchange on the market and not for direct consumption by the producers, but such commodity production has not yet become generalized, as is the case in capitalist society.

In a society founded on small-scale commodity production, two kinds of economic operations are carried out. The peasants and artisans who bring their products to market wish to sell goods whose use value they themselves cannot
use in order to obtain money, means of exchange, for the acquisition of other goods, whose use value is either necessary to them or deemed more important than the use value of the goods they own.

The peasant brings wheat to the marketplace which he sells for money; with this money he buys, let us say, cloth. The artisan brings his cloth to the market, which he sells for money; with this money he buys, let us say, wheat.

What we have here, then, is the operation: selling in order to buy. Commodity-Money-Commodity, C-M-C which has this essential character: the value of the two extremes in this formula is, by definition, exactly the same.

But within small-scale commodity production there appears, alongside the artisan and small peasant, another personage, who executes a different kind of economic operation. Instead of selling in order to buy, he buys in order to sell. This type of person goes to market without any commodities; he is an owner of money. Money cannot be sold; but it can be used to buy, and that is what he does: buys in order to sell, in order to resell: M-C-M'.

There is a fundamental difference between the two types of operation. The second operation makes no sense if upon its completion we are confronted by exactly the same value as we had at the beginning. No one buys a commodity in order to sell it for exactly the same price he paid for it. The operation "buy in order to sell" makes sense only if the sale brings a supplementary value, a surplus value. That is why we state here, by way of definition. M' is greater than M and is made up of M+m; m being the surplus value, the amount of increase in the value of M.

Capital is defined as a value which is increased by a surplus value, whether this occurs in the course of commodity circulation, as in the example just given, or in production, as is the case in the capitalist system. Capital, therefore, is every value which is augmented by a surplus value; it therefore exists not only in capitalist society but in any society founded on small-scale commodity production as well. For this reason it is necessary to distinguish very clearly between the life of capital and that of the capitalist mode of production, of capitalist society. Capital is far older than the capitalist mode of production. The former probably goes back some 3,000 years, whereas the latter is barely 200 years old.

What form does capital take in precapitalist society? It is basically usury capital and merchant or commercial capital. The passage from precapitalist society into capitalist society is characterized by the penetration of capital into the sphere of production. The capitalist mode of production is the first mode of production, the first form of social organization, in which capital is not limited to the sole role of an intermediary and exploiter of non-capitalist forms of production, of small-scale commodity production. In the capitalist mode of production, capital takes over the means of production and penetrates directly into production itself.

Capitalism can only exist if there is a) the state protection of capital, an b) competition. Without competition there is no capitalist society. A society where competition is radically or completely eliminated would no longer be capitalist to the extent that there would no longer be a major economic motive for accumulating capital and consequently for carrying out nine tenths of the economic operations which capitalists execute.

There are two bases of competition - First is the idea of the unlimited market, the market without restrictions, without exact boundaries. Then there is the idea of a multiplicity of decision centers, above all in matters of investment and production.

If all production in a given industrial sector were concentrated in the hands of a single capitalist firm, competition would still not be eliminated, because an unlimited market would still exist and there would still be a competitive struggle between this industrial sector and other sectors to capture as much of this market as possible. Furthermore, there would always be a possibility that a foreign competitor might enter the scene and provide new competition right in the very same sector.

The reverse is also true. If we can conceive a totally and completely limited market, but one in which a great number of enterprises are fighting to capture a part of this limited market, then competition must obviously survive.
Therefore only if these two phenomena were to be suppressed simultaneously, that is to say, if there were only one producer for all commodities and the market became absolutely stable, frozen and without any capacity for expansion, could competition disappear completely.

The appearance of the unlimited market displays all of its significance when compared with the period of small-scale commodity production. A guild in the Middle Ages generally worked for a market limited to the city and its immediate suburbs, and in accordance with fixed and specific labour techniques.

The historical passage of the limited market to the unlimited market is illustrated by the example of the "new clothiers" of the countryside which replaced the old city clothiers in the fifteenth century. There were now cloth manufacturers without guild regulations, without production limits, therefore without any market restrictions, who tried to infiltrate everywhere, seek clients everywhere, and not only went beyond the immediate area of their production centers, but even tried to organize an export trade to very distant countries. On the other hand, the great commercial revolution of the sixteenth century stimulated a relative reduction in the prices of a whole set of products which had been considered great luxuries in the Middle Ages and were only within the purchasing range of a small part of the population. These products suddenly became far less expensive, and even came within the reach of a significant part of the population. The most striking example of this trend is sugar, which has become a commonplace product today and is undoubtedly to be found in every working-class household in France or in Europe; in the fifteenth century, however, it was still a highly luxurious article.

The apologists for capitalism have always pointed to the reduction in prices and widened market for a whole set of products as the benefits brought about by this system, which is true, being one of the aspects of what Marx called "the civilizing mission of Capital."

But concomitant to that, there is also the true phenomenon where the value of labour-power has a tendency to fall by virtue of the fact that capitalist industry produces the commodity equivalent of wages with ever increasing rapidity. At the same time, it has a tendency to rise by virtue of the fact that this value of labour-power progressively takes in the value of a whole series of commodities which have become mass consumer goods, whereas formerly they were reserved for a very small part of the population.

Basically, the entire history of trade between the sixteenth and twentieth century is the history of a progressive transformation from trade in luxury goods into trade in mass consumer goods; into trade in goods destined for an ever increasing portion of the population. It is only with the development of the railroads, of the means for fast navigation, of telegraphy, etc., that it became possible for the whole world to be marshalled into a real potential market for each great capitalist producer.

The idea of an unlimited market does not, therefore, merely imply geographic expansion, but economic expansion, available purchasing power, also. To take a recent example: the extraordinary rise in the production of durable consumer goods in world capitalist production during the past fifty years was not at all due to any geographic expansion of the capitalist market; on the contrary, it was accompanied by a geographic reduction in the capitalist market, since a whole series of countries were lost to it during this period. There were few, if any, automobiles of French, Italian, German, British, Japanese or American manufacture exported to the Soviet Union, China, North Vietnam, Cuba, North Korea, or the countries of the Warsaw Pact. Nevertheless, this expansion did take place, thanks to the fact that a much greater fraction of the available purchasing power, which had increased absolutely as well, was used for buying these durable consumer goods.

It is no accident that this expansion has been accompanied by a more or less permanent agricultural crisis in industrially advanced countries, where the consumption of a whole group of agricultural products has not only ceased to increase on a relative basis but is even beginning to show an absolute decline: for example, the consumption of bread, potatoes, and of commonplace fruits like apples, pears, etc.

Production for an unlimited market, under competitive conditions, results in increased production, for an increase in production permits a reduction in costs and affords the means for beating a competitor by underselling him.
If we look at the long-term change in the value of all commodities which are produced on a large scale in the capitalist world, there can be no doubt that their value has declined considerably. A dress, knife, pair of shoes, or schoolboy's notebook today has a value in hours and minutes of labour which is far lower than it was fifty or a hundred years ago.

Obviously real production values must be compared and not sale prices, which include either enormous distribution and sales expenses or swollen monopolistic superprofits. Using gasoline as an example, especially the gasoline distributed in Europe and originating in the Middle East, we find that its production costs are very low, barely 10 percent of the sale price.

In any event, there can be no doubt about the fact that this drop in value has actually taken place. Growth in labour productivity means a reduction in the value of goods, since the latter are manufactured with an ever reduced quantity of labour-time. Therein lies the practical tool which capitalism possesses for enlarging its markets and defeating its competitors.

What practical method does the capitalist have for sharply cutting his production costs and simultaneously sharply increasing his production? It is the development of mechanization, the development of means of production, mechanical instruments of labour of ever increasing complexity, originally powered by steam power, then by gasoline or diesel oil, and finally by electricity.

- Marxian Economic Theory

But capitalism breeds a number of endemic problems, as Karl Marx noted. One is the trend towards monopoly, or the elimination of competitors (through price wars, resource theft, violence); another is 'wage slavery'. That is, the tendency for the owners of the means of production to work with other owners to drive down wages in the search for profit. The resulting effect is that workers are herded into competing with each other for 'the scraps from the table' – lower and lower wages. The history of capitalism bears this some truth.

The Marxist School challenged the foundations of Classical theory. Writing during the mid-19th century, Karl Marx saw capitalism as an evolutionary phase in economic development. He believed that capitalism would ultimately destroy itself and be succeeded by a world without private property. An advocate of a labor theory of value, Marx believed that all production belongs to labor because workers produce all value within society. He believed that the market system allows capitalists, the owners of machinery and factories, to exploit workers by denying them a fair share of what they produce. Marx predicted that capitalism would produce growing misery for workers as competition for profit led capitalists to adopt labor-saving machinery, creating a "reserve army of the unemployed" who would eventually rise up and seize the means of production.

Karl Heinrich Marx (5 May 1818 – 14 March 1883) was a German philosopher, economist, sociologist, historian, journalist, and revolutionary socialist. His ideas played a significant role in the development of social science and the socialist political movement. He published various books during his lifetime, with the most notable being The Communist Manifesto (1848) and Capital (1867–1894); some of his works were co-written with his friend, the fellow German revolutionary socialist Friedrich Engels.

Born into a middle class family in, Marx studied at both the University of Bonn and the University of Berlin, where he became interested in the philosophical ideas of the Young Hegelians. He married Jenny von Westphalen. After his studies, he wrote for a radical newspaper in Cologne, and began to work out his theory of dialectical materialism. Moving to Paris in 1843, he began writing for other radical newspapers. He met Engels in Paris, and the two men worked together on a series of books. Exiled to Brussels, he became a leading figure of the Communist League, before moving back to Cologne, where he founded his own newspaper. In 1849 he was exiled again and moved to London together with his wife and children. In London, where the family was reduced to poverty, Marx continued writing and formulating his theories about the nature of society and how he believed it could be improved, as well as campaigning for socialism and becoming a significant figure in the International Workingmen’s Association.
Marx's theories about society, economics and politics, which are collectively known as Marxism, hold that all societies progress through the dialectic of class struggle. He was heavily critical of the current socio-economic form of society, capitalism, which he called "the dictatorship of the bourgeoisie", believing it to be run by the wealthy middle and upper classes purely for their own benefit, and predicted that, like previous socioeconomic systems, it would inevitably produce internal tensions which would lead to its self-destruction and replacement by a new system, socialism. Under socialism, he argued that society would be governed by the working class in what he called the "dictatorship of the proletariat", the "workers state" or "workers' democracy". He believed that socialism would, in its turn, eventually be replaced by a stateless, classless society called pure communism. Along with believing in the inevitability of socialism and communism, Marx actively fought for the former's implementation, arguing that both social theorists and underprivileged people should carry out organised revolutionary action to topple capitalism and bring about socio-economic change.

Marx is typically cited, with Émile Durkheim and Max Weber, as one of the three principal architects of modern social science (that is, the scientific and empirical examination of social phenomena). Marx has been described as one of the most influential figures in human history, and in a recent poll was voted the "thinker of the millennium" by people from around the world.

**Marxist Economics: A basic description**

1) Worker B has only his labor power to sell.

2) Capitalist A owns capital, which consists of the value of his machinery and plant, raw materials (collectively called constant capital, c) and so-called variable capital (v) to spend on wages.

3) B and A strike a "voluntary" bargain: B gives A the use of his labor power for a certain period, say, a year, in return for a wage.

4) B works for a year and produces goods for A worth G; A sells them and receives G.

5) A deducts from G the value of the wear-and-tear on machinery and plant involved in the production of the goods worth G and the value of the raw materials used to make them. What is left is Q.

6) A pays B his wage, w. Perhaps w=0.2 Q. (w is part of total wages A pays all his workers, i.e., v.)

7) A clears 0.8 Q. This is the surplus value (s) extracted from B.

8) w is, on average, a subsistence wage for B. It keeps him alive and able to reproduce (have kids and raise them to be workers for capitalists in the next generation).

9) All of Q is the product of B's labor, even though B only receives w, a small fraction of Q. (This is exploitation in Marx's sense and it is inevitable under capitalism.)

10) s/w is the rate of surplus value, also known as the rate of exploitation. The rate of exploitation of worker B in our example is 400%. (For the entire firm, this rate is S/v, surplus value generated by all A's workers (S) divided by A's capital tied up in wages.)

11) Total capital invested (TCI) = constant capital + variable capital (c+v)

12) Rate of profit = S / TCI = S / (c+v)
13) Because competition among the capitalists tends to push down prices of goods, G and therefore Q tend to drop. Hence, other factors equal, S will shrink or not expand as fast as TCI. As a result, the rate of profit will tend to decline.

14) The pure competitive market model says that economic agents will be egoists. This is roughly correct for capitalists.

15) Hence, A and other capitalists want to maintain or increase the rate of profit. Possible strategies include:

16) increase the rate of exploitation (S/v) by forcing down v (cost of wages) by:
   - weakening or smashing unions,
   - increasing the pool of workers competing for the same jobs by
     - creating unemployment
     - increasing immigration
   - creating a larger labor market by offshoring
   - increasing S/v by raising productivity so workers can produce more with the same labor power and thus with the same amount of variable capital
   - reducing TCI by getting raw materials more cheaply, e.g., by encouraging (commanding?) wars of conquest by the government
   - opening new markets for their products (go where no markets went before)

17) The whole process periodically creates crises of "overproduction": the quantities of goods produced outstrip the demand: v is so low that the workers can buy back only a tiny portion of the total product. Yet capitalists, even with spoiled kids, are reluctant to consume for themselves and their families most of what they have in their inventories. There's no point in producing more; so they lay off workers. But this further decreases total wages and thus demand for consumer goods, and a worse economic crisis than before is the result.

- Neoclassical thought

At the same time Marx was making his observations, a revolution took place in economics. The new ideas were that of the Marginalist school. Writing simultaneously and independently, a Frenchman (Leon Walras), an Austrian (Carl Menger) and an Englishman (Stanley Jevons) were developing the theory, which had some antecedents. Instead of the price of a good or service reflecting the labor that has produced it, it reflects the marginal usefulness (utility) of the last purchase. This meant that in equilibrium, people's preferences determined prices, including, indirectly the price of labor.

This current of thought was not united, and there were three main schools working independently. The Lausanne school, whose two main representants were Walras and Vilfredo Pareto, developed the theories of general equilibrium and optimality. The main written work of this school was Walras' Elements of Pure Economics. The Cambridge school appeared with Jevons' Theory of Political Economy in 1871. This English school has developed the theories of the partial equilibrium and has insisted on markets' failures. The main representatives were Alfred Marshall, Stanley Jevons and Arthur Pigou. The Vienna school was made up of Austrian economists Menger, Eugen von Böhm-Bawerk and Friedrich von Wieser. They developed the theory of capital and has tried to explain the presence of economic crises. It appeared in 1871 with Menger's Principles of Economics.

- Marginal Utility

Carl Menger (1840–1921), an Austrian economist stated the basic principle of marginal utility in Grundsätze der Volkswirtschaftslehre (1871, Principles of Economics). Consumers act rationally by seeking to maximise satisfaction of
all their preferences. People allocate their spending so that the last unit of a commodity bought creates no more than a last unit bought of something else. **Stanley Jevons** (1835–1882) was his English counterpart, and worked as tutor and later professor at Owens College, Manchester and University College, London. He emphasised in the *Theory of Political Economy* (1871) that at the margin, the satisfaction of goods and services decreases. An example of the theory of diminishing returns is that for every orange one eats, the less pleasure one gets from the last orange (until one stops eating). Then **Leon Walras** (1834–1910), again working independently, generalised marginal theory across the economy in *Elements of Pure Economics* (1874). Small changes in people's preferences, for instance shifting from beef to mushrooms, would lead to a mushroom price rise, and beef price fall. This stimulates producers to shift production, increasing mushrooming investment, which would increase market supply and a new price equilibrium between the products – e.g. lowering the price of mushrooms to a level between the two first levels. For many products across the economy the same would go, if one assumes markets are competitive, people choose on self interest and no cost in shifting production.

Early attempts to explain away the periodical crises of which Marx had spoken were not successful. After finding a statistical correlation of sunspots and business fluctuations and following the common belief at the time that sunspots had a direct effect on weather and hence agricultural output, Stanley Jevons wrote,

> when we know that there is a cause, the variation of the solar activity, which is just of the nature to affect the produce of agriculture, and which does vary in the same period, it becomes almost certain that the two series of phenomena— credit cycles and solar variations—are connected as effect and cause.

Classical economists theorized that prices are determined by the costs of production. Marginalist economists emphasized that prices also depend upon the level of demand, which in turn depends upon the amount of consumer satisfaction provided by individual goods and services.

Marginalists provided modern macroeconomics with the basic analytic tools of demand and supply, consumer utility, and a mathematical framework for using those tools. Marginalists also showed that in a free market economy, the factors of production -- land, labor, and capital -- receive returns equal to their contributions to production. This principle was sometimes used to justify the existing distribution of income: that people earned exactly what they or their property contributed to production.

** Institutionalist School**

Institutionalist economists regard individual economic behavior as part of a larger social pattern influenced by current ways of living and modes of thought. They rejected the narrow Classical view that people are primarily motivated by economic self-interest. Opposing the laissez-faire attitude towards government's role in the economy, the Institutionals called for government controls and social reform to bring about a more equal distribution of income.

** Mathematical analysis**

**Vilfredo Pareto** (1848–1923) was an Italian economist, best known for developing the concept of an economy that would permit maximizing the utility level of each individual, given the feasible utility level of others from production and exchange. Such a result came to be called "Pareto efficient". Pareto devised mathematical representations for such a resource allocation, notable in abstracting from institutional arrangements and monetary measures of wealth or income distribution.

**Alfred Marshall** is also credited with an attempt to put economics on a more mathematical footing. He was the first Professor of Economics at the University of Cambridge and his work, *Principles of Economics* coincided with the transition of the subject from "political economy" to his favoured term, "economics". He viewed mathematics as a way to simplify economic reasoning, though had reservations, revealed in a letter to his student Arthur Cecil Pigou.
(1) Use mathematics as shorthand language, rather than as an engine of inquiry. (2) Keep to them till you have done. (3) Translate into English. (4) Then illustrate by examples that are important in real life. (5) Burn the mathematics. (6) If you can't succeed in 4, burn 3. This I do often.

Coming after the marginal revolution, Marshall concentrated on reconciling the classical labour theory of value, which had concentrated on the supply side of the market, with the new marginalist theory that concentrated on the consumer demand side. Marshall's graphical representation is the famous supply and demand graph, the "Marshallian cross". He insisted it is the intersection of both supply and demand that produce an equilibrium of price in a competitive market. Over the long run, argued Marshall, the costs of production and the price of goods and services tend towards the lowest point consistent with continued production.

Arthur Cecil Pigou in Wealth and Welfare (1920), insisted on the existence of market failures. Markets are inefficient in case of economic externalities, and the State must interfere. However, Pigou retained free-market beliefs, and in 1933, in the face of the economic crisis, he explained in The Theory of Unemployment that the excessive intervention of the state in the labor market was the real cause of massive unemployment, because the governments had established a minimal wage, which prevented the wages from adjusting automatically. This was to be the focus of attack from Keynes.

- The Austrian school

While the end of the nineteenth century and the beginning of the twentieth were dominated increasingly by mathematical analysis, the followers of Carl Menger, in the tradition of Eugen von Böhm-Bawerk, followed a different route, advocating the use of deductive logic instead. This group became known as the Austrian School, reflecting the Austrian origin of many of the early adherents. Thorstein Veblen in 1900, in his Preconceptions of Economic Science, contrasted neoclassical marginalists in the tradition of Alfred Marshall from the philosophies of the Austrian school.

Joseph Alois Schumpeter (1883–1950) was an Austrian economist and political scientist most known for his works on business cycles and innovation. He insisted on the role of the entrepreneurs in an economy. In Business Cycles: A theoretical, historical and statistical analysis of the Capitalist process (1939), Schumpeter made a synthesis of the theories about business cycles. He suggested that those cycles could explain the economic situations. According to Schumpeter, capitalism necessarily goes through long-term cycles, because it is entirely based upon scientific inventions and innovations. A phase of expansion is made possible by innovations, because they bring productivity gains and encourage entrepreneurs to invest. However, when investors have no more opportunities to invest, the economy goes into recession, several firms collapse, closures and bankruptcy occur. This phase lasts until new innovations bring a creative destruction process, i.e. they destroy old products, reduce the employment, but they allow the economy to start a new phase of growth, based upon new products and new factors of production.

Ludwig von Mises (1881–1973) was an Austrian economist who contributed the idea of praxeology, "The science of human action". Praxeology views economics as a series of voluntary trades that increase the satisfaction of the involved parties. Mises also argued that socialism suffers from an unsolvable economic calculation problem, which according to him, could only be solved through free market price mechanisms.

Mises' outspoken criticisms of socialism had a large influence on the economic thinking of Friedrich von Hayek (1899–1992), who, while initially sympathetic to socialism, became one of the leading academic critics of collectivism in the 20th century. In echoes of Smith's "system of natural liberty", Hayek argued that the market is a "spontaneous order" and actively disparaged the concept of "social justice". Hayek believed that all forms of collectivism (even those theoretically based on voluntary cooperation) could only be maintained by a central authority. In his book, The Road to Serfdom (1944) and in subsequent works, Hayek claimed that socialism required central economic planning and that such planning in turn would lead towards totalitarianism. Hayek attributed the birth of civilization to private property in his book The Fatal Conceit (1988). According to him, price signals are the only means of enabling each economic decision maker to communicate tacit knowledge or dispersed knowledge to each other, to solve the economic calculation problem.
• Depression, War, and reconstruction

Alfred Marshall was still working on his last revisions of his *Principles of Economics* at the outbreak of the First World War (1914–1918). For four years the production of Britain, Germany and France was geared entirely towards the war economy's industry of death. In 1917 Russia crumbled into revolution led by Vladimir Lenin's Bolshevik party. They carried Marxist theory as their saviour, and promised a broken country "peace, bread and land" by collectivising the means of production. Also in 1917, the United States of America entered the war on the side of France and Britain, President Woodrow Wilson carrying the slogan of "making the world safe for democracy". He devised a peace plan of Fourteen Points. In 1918 Germany launched a spring offensive which failed, and as the allies counter-attacked and more millions were slaughtered, Germany slid into revolution, its interim government suing for peace on the basis of Wilson's Fourteen Points. Europe lay in ruins, financially, physically, psychologically, and its future with the arrangements of the Versailles conference in 1919. John Maynard Keynes was the representative of Her Majesty's Treasury at the conference and the most vocal critic of its outcome.

• John Maynard Keynes

John Maynard Keynes (1883–1946) was born in Cambridge, educated at Eton and supervised by both A. C. Pigou and Alfred Marshall at Cambridge University. He began his career as a lecturer, before working in the British government during the Great War, and rose to be the British government's financial representative at the Versailles conference. His observations were laid out in his book *The Economic Consequences of the Peace* (1919) where he documented his outrage at the collapse of the Americans' adherence to the Fourteen Points and the mood of vindictiveness that prevailed towards Germany. Keynes quit from the conference and using extensive economic data provided by the conference records, Keynes argued that if the victors forced war reparations to be paid by the defeated Axis, then a world financial crisis would ensue, leading to a second world war. Keynes finished his treatise by advocating, first, a reduction in reparation payments by Germany to a realistically manageable level, increased intra-governmental management of continental coal production and a free trade union through the League of Nations; second, an arrangement to set off debt repayments between the Allied countries; third, complete reform of international currency exchange and an international loan fund; and fourth, a reconciliation of trade relations with Russia and Eastern Europe.

The book was an enormous success, and Keynes' dark forecasts matched the world's experience through the Great Depression which ensued in 1929, and the descent into a new outbreak of war in 1939. World War One had been the "war to end all wars", and the absolute failure of the peace settlement generated an even greater determination to not repeat the same mistakes. With the defeat of fascism, the Bretton Woods conference was held to establish a new economic order. Keynes was again to play a leading role.

○ *The General Theory of Employment, Interest, and Money*

During the Great Depression, Keynes had published his most important work, *The General Theory of Employment, Interest, and Money* (1936). The depression had been sparked by the Wall Street Crash of 1929, leading to massive rises in unemployment in the United States, leading to debts being recalled from European borrowers, and an economic domino effect across the world. Orthodox economics called for a tightening of spending, until business confidence and profit levels could be restored. Keynes by contrast, had argued in *A Tract on Monetary Reform* (1923) that a variety of factors determined economic activity, and that it was not enough to wait for the long run market equilibrium to restore itself. As Keynes famously remarked,

...this long run is a misleading guide to current affairs. In the long run we are all dead. Economists set themselves too easy, too useless a task: if in tempestuous seasons they can only tell us that when the storm is long past the ocean is flat again.

On top of the supply of money, Keynes identified the propensity to consume, inducement to invest, the marginal efficiency of capital, liquidity preference and the multiplier effect as variables which determine the level of the economy's output, employment and level of prices. Much of this esoteric terminology was invented by Keynes especially for his General Theory, though some simple ideas lay behind. Keynes argued that if savings were being kept away from investment through financial markets, total spending falls. Falling spending leads to reduced
incomes and unemployment, which reduces savings again. This continues until the desire to save becomes equal to the desire to invest, which means a new "equilibrium" is reached and the spending decline halts. This new "equilibrium" is a depression, where people are investing less, have less to save and less to spend.

Keynes argued that employment depends on total spending, which is composed of consumer spending and business investment in the private sector. Consumers only spend "passively", or according to their income fluctuations. Businesses, on the other hand, are induced to invest by the expected rate of return on new investments (the benefit) and the rate of interest paid (the cost). So, said Keynes, if business expectations remained the same, and government reduces interest rates (the costs of borrowing), investment would increase, and would have a multiplied effect on total spending. Interest rates, in turn, depend on the quantity of money and the desire to hold money in bank accounts (as opposed to investing). If not enough money is available to match how much people want to hold, interest rates rise until enough people are put off. So if the quantity of money were increased, while the desire to hold money remained stable, interest rates would fall, leading to increased investment, output and employment. For both these reasons, Keynes therefore advocated low interest rates and easy credit, to combat unemployment.

But Keynes believed in the 1930s, conditions necessitated public sector action. Deficit spending, said Keynes, would kick-start economic activity. This he had advocated in an open letter to U.S. President Franklin D. Roosevelt in the New York Times (1933). The New Deal programme in the U.S. had been well underway by the publication of the General Theory. It provided conceptual reinforcement for policies already pursued. Keynes also believed in a more egalitarian distribution of income, and taxation on unearned income arguing that high rates of savings (to which richer folk are prone) are not desirable in a developed economy. Keynes therefore advocated both monetary management and an active fiscal policy.

During the Second World War, Keynes acted as advisor to HM Treasury again, negotiating major loans from the US. He helped formulate the plans for the International Monetary Fund, the World Bank and an International Trade Organisation at the Bretton Woods conference, a package designed to stabilise world economy fluctuations that had occurred in the 1920s and create a level trading field across the globe. Keynes passed away little more than a year later, but his ideas had already shaped a new global economic order, and all Western governments followed the Keynesian prescription of deficit spending to avert crises and maintain full employment. One of Keynes' pupils at Cambridge was Joan Robinson, who contributed to the notion that competition is seldom perfect in a market, an indictment of the theory of markets setting prices. In The Production Function and the Theory of Capital (1953) Robinson tackled what she saw to be some of the circularity in orthodox economics. Neoclassicists assert that a competitive market forces producers to minimise the costs of production. Robinson said that costs of production are merely the prices of inputs, like capital. Capital goods get their value from the final products. And if the price of the final products determines the price of capital, then it is, argued Robinson, utterly circular to say that the price of capital determines the price of the final products. Goods cannot be priced until the costs of inputs are determined. This would not matter if everything in the economy happened instantaneously, but in the real world, price setting takes time – goods are priced before they are sold. Since capital cannot be adequately valued in independently measurable units, how can one show that capital earns a return equal to the contribution to production?

Piero Sraffa came to England from fascist Italy in the 1920s, and worked with Keynes in Cambridge. In 1960 he published a small book called Production of Commodities by Means of Commodities, which explained how technological relationships are the basis for production of goods and services. Prices result from wage-profit tradeoffs, collective bargaining, labour and management conflict and the intervention of government planning. Like Robinson, Sraffa was showing how the major force for price setting in the economy was not necessarily market adjustments.

- **The "American Way"**

After World War II, the United States had become the pre-eminent global economic power. Europe and the Soviet Union lay in ruins and the British Empire was at its end. Until then, American economists had played a minor role. The institutional economists had been largely critical of the "American Way" of life, especially regarding conspicuous consumption of the Roaring Twenties before the Wall Street Crash of 1929. After the war, however, a
more orthodox body of thought took root, reacting against the lucid debating style of Keynes, and re-mathematizing the profession. The orthodox centre was also challenged by a more radical group of scholars based at the University of Chicago. They advocated what they called "liberty" and "freedom", looking back to 19th century-style *laissez-faire* governments.

- **Institutionalism**

**Thorsten Veblen** (1857–1929), who came from rural mid-western America and worked at the University of Chicago, is one of the best known early critics of the "American Way". In *The Theory of the Leisure Class* (1899) he scorned materialistic culture and wealthy people who conspicuously consumed their riches as a way of demonstrating success and in *The Theory of Business Enterprise* (1904) Veblen distinguished production for people to use things and production for pure profit, arguing that the former is often hindered because businesses pursue the latter. Output and technological advance are restricted by business practices and the creation of monopolies. Businesses protect their existing capital investments and employ excessive credit, leading to depressions and increasing military expenditure and war through business control of political power.

These two books, focusing on criticism first of consumerism, and second of profiteering, did not advocate change. However, in 1911, Veblen joined the faculty of the University of Missouri, where he had support from Herbert Davenport, the head of the economics department. Veblen remained at Columbia, Missouri through 1918. In that year, he moved to New York to begin work as an editor of a magazine called *The Dial*, and then in 1919, along with Charles Beard, James Harvey Robinson and John Dewey, helped found the New School for Social Research (known today as *The New School*). From 1919 through 1926 Veblen continued to write and to be involved in various activities at The New School. During this period he wrote *The Engineers and the Price System* (1921).

**John R. Commons** (1862–1945) also came from mid-Western America. Underlying his ideas, consolidated in *Institutional Economics* (1934) was the concept that the economy is a web of relationships between people with diverging interests. There are monopolies, large corporations, labour disputes and fluctuating business cycles. They do however have an interest in resolving these disputes. Government, thought Commons, ought to be the mediator between the conflicting groups. Commons himself devoted much of his time to advisory and mediation work on government boards and industrial commissions.

The Great Depression was a time of significant upheaval in the States. One of the most original contributions to understanding what had gone wrong came from a Harvard University lawyer, named **Adolf Berle** (1895–1971), who like John Maynard Keynes had resigned from his diplomatic job at the Paris Peace Conference, 1919 and was deeply disillusioned by the Versailles Treaty. In his book with Gardiner C. Means, *The Modern Corporation and Private Property* (1932), he detailed the evolution in the contemporary economy of big business, and argued that those who controlled big firms should be better held to account.

Directors of companies are held to account to the shareholders of companies, or not, by the rules found in company law statutes. This might include rights to elect and fire the management, require for regular general meetings, accounting standards, and so on. In 1930s America, the typical company laws (e.g. in Delaware) did not clearly mandate such rights. Berle argued that the unaccountable directors of companies were therefore apt to funnel the fruits of enterprise profits into their own pockets, as well as manage in their own interests. The ability to do this was supported by the fact that the majority of shareholders in big public companies were single individuals, with scant means of communication, in short, divided and conquered. Berle served in President Franklin Delano Roosevelt's administration through the depression, and was a key member of the so called "Brain trust" developing many of the New Deal policies. In 1967, Berle and Means issued a revised edition of their work, in which the preface added a new dimension. It was not only the separation of controllers of companies from the owners as shareholders at stake. They posed the question of what the corporate structure was really meant to achieve.

Stockholders toil not, neither do they spin, to earn [dividends and share price increases]. They are beneficiaries by position only. Justification for their inheritance... can be founded only upon social grounds... that justification turns on the distribution as well as the existence of wealth. Its force exists only in direct ratio to the number of individuals who hold such wealth. Justification for the stockholder's existence thus depends on increasing distribution within the American population. Ideally the stockholder's position will be...
impregnable only when every American family has its fragment of that position and of the wealth by which the opportunity to develop individuality becomes fully actualized.

- **Modern Economic and Development Approaches**

After the war, **John Kenneth Galbraith** (1908–2006) became one of the standard bearers for pro-active government and liberal-democrat politics. In *The Affluent Society* (1958), Galbraith argued voters reaching a certain material wealth begin to vote against the common good. He argued that the "conventional wisdom" of the conservative consensus was not enough to solve the problems of social inequality.

In an age of big business, he argued, it is unrealistic to think of markets of the classical kind. They set prices and use advertising to create artificial demand for their own products, distorting people's real preferences. Consumer preferences actually come to reflect those of corporations—a "dependence effect"—and the economy as a whole is geared to irrational goals. In *The New Industrial State* Galbraith argued that economic decisions are planned by a private-bureaucracy, a technostructure of experts who manipulate marketing and public relations channels. This hierarchy is self serving, profits are no longer the prime motivator, and even managers are not in control. Because they are the new planners, corporations detest risk, require steady economic and stable markets. They recruit governments to serve their interests with fiscal and monetary policy, for instance adhering to monetarist policies which enrich money-lenders in the City through increases in interest rates. While the goals of an affluent society and complicit government serve the irrational technostructure, public space is simultaneously impoverished. Galbraith paints the picture of stepping from penthouse villas onto unpaved streets, from landscaped gardens to unkempt public parks. In *Economics and the Public Purpose* (1973) Galbraith advocates a "new socialism" as the solution, nationalising military production and public services such as health care, introducing disciplined salary and price controls to reduce inequality.

- **Paul Samuelson**

In contrast to Galbraith's linguistic style, the post-war economics profession began to synthesise much of Keynes' work with mathematical representations. Introductory university economics courses began to present economic theory as a unified whole in what is referred to as the neoclassical synthesis. "Positive economics" became the term created to describe certain trends and "laws" of economics that could be objectively observed and described in a value free way, separate from "normative economic" evaluations and judgments. The best selling textbook writer of this generation was **Paul Samuelson** (1915–2009). His Ph.D. dissertation demonstrates that mathematical methods could represent a core of testable economic theory. It was published as *Foundations of Economic Analysis* in 1947.

Samuelson started with two assumptions. First, people and firms will act to maximise their self interested goals. Second, markets tend towards an equilibrium of prices, where demand matches supply. He extended the mathematics to describe equilibrating behaviour of economic systems, including that of the then new macroeconomic theory of John Maynard Keynes. To show this, Samuelson adapted thermodynamics formulae to economic theory. Reasserting economics as a hard science was being done in the United Kingdom also, and his introductory textbook *Economics* was influential and widely adopted. It became the most successful economics text ever. Paul Samuelson was awarded the new Nobel Prize in Economics in 1970 for his merging of mathematics and political economy.

- **Kenneth Arrow**

Kenneth Arrow (born 1921) is Paul Samuelson's brother-in-law. His first major work, forming his doctoral dissertation at Columbia University was *Social Choice and Individual Values* (1951), which brought economics into contact with political theory. This gave rise to social choice theory with the introduction of his "Possibility Theorem". In his words,

> If we exclude the possibility of interpersonal comparisons of utility, then the only methods of passing from individual tastes to social preferences which will be satisfactory and which will be defined for a wide range of sets of individual orderings are either imposed or dictatorial.
This sparked widespread discussion over how to interpret the different conditions of the theorem and what implications it had for democracy and voting. Most controversial of his four (1963) or five (1950/1951) conditions is the independence of irrelevant alternatives.

In the 1950s, Arrow and Gerard Debreu developed the Arrow-Debreu model of general equilibria. In 1971 Arrow with Frank Hahn co-authored General Competitive Analysis (1971), which reasserted a theory of general equilibrium of prices through the economy. In 1969 the Swedish Central Bank began awarding a prize in economics, as an analogy to the Nobel prizes awarded in Chemistry, Physics, Medicine as well as Literature and Peace. With John Hicks, Arrow won the Bank of Sweden prize in 1972, the youngest recipient ever.

- **Monetarism and the Chicago school**

The interventionist monetary and fiscal policies that the orthodox post-war economics recommended came under attack in particular by a group of theorists working at the University of Chicago, which came to be known as the Chicago School. This more conservative strand of thought reasserted a "libertarian" view of market activity, that people are best left to themselves, free to choose how to conduct their own affairs. More academics who have worked at the University of Chicago have been awarded the Nobel Prize in Economics than those from any other university.

**Ronald Coase** (born 1910) is the most prominent economic analyst of law and the 1991 Nobel Prize winner. His first major article, The Nature of the Firm (1937), argued that the reason for the existence of firms (companies, partnerships, etc.) is the existence of transaction costs. Rational individuals trade through bilateral contracts on open markets until the costs of transactions mean that using corporations to produce things is more cost-effective. His second major article, The Problem of Social Cost (1960), argued that if we lived in a world without transaction costs, people would bargain with one another to create the same allocation of resources, regardless of the way a court might rule in property disputes.

Coase used the example of an old legal case about nuisance named *Sturges v Bridgman*, where a noisy sweetmaker and a quiet doctor were neighbours and went to court to see who should have to move. Coase said that regardless of whether the judge ruled that the sweetmaker had to stop using his machinery, or that the doctor had to put up with it, they could strike a mutually beneficial bargain about who moves house that reaches the same outcome of resource distribution. Only the existence of transaction costs may prevent this. So the law ought to pre-empt what would happen, and be guided by the most efficient solution. The idea is that law and regulation are not as important or effective at helping people as lawyers and government planners believe. Coase and others like him wanted a change of approach, to put the burden of proof for positive effects on a government that was intervening in the market, by analysing the costs of action.

**Milton Friedman** (1912–2006) stands as one of the most influential economists of the late twentieth century. He won the Nobel Prize in Economics in 1976, among other things, for A Monetary History of the United States (1963). Friedman argued that the Great Depression had been caused by the Federal Reserve's policies through the 1920s, and worsened in the 1930s. Friedman argues *laissez-faire* government policy is more desirable than government intervention in the economy. Governments should aim for a neutral monetary policy oriented toward long-run economic growth, by gradual expansion of the money supply. He advocates the quantity theory of money, that general prices are determined by money. Therefore active monetary (e.g. easy credit) or fiscal (e.g. tax and spend) policy can have unintended negative effects. In *Capitalism and Freedom* (1967) Friedman wrote:

> There is likely to be a lag between the need for action and government recognition of the need; a further lag between recognition of the need for action and the taking of action; and a still further lag between the action and its effects.

Friedman was also known for his work on the consumption function, the permanent income hypothesis (1957), which Friedman himself referred to as his best scientific work. This work contended that rational consumers would spend a proportional amount of what they perceived to be their permanent income. Windfall gains would mostly be saved. Tax reductions likewise, as rational consumers would predict that taxes would have to rise later to balance
public finances. Other important contributions include his critique of the Phillips curve and the concept of the natural rate of unemployment (1968). This critique associated his name with the insight that a government that brings about higher inflation cannot permanently reduce unemployment by doing so. Unemployment may be temporarily lower, if the inflation is a surprise, but in the long run unemployment will be determined by the frictions and imperfections in the labour market.

- **Globalisation**

**Amartya Sen** (born 1933) is a leading development and welfare economist and has expressed considerable skepticism on the validity of neo-classical assumptions. He was highly critical of rational expectations theory, and devoted his work to development and human rights. He won the Nobel Prize in Economics in 1998.

**Joseph Stiglitz** (born 1943) received the Nobel Prize in 2001 for his work in information economics. He has served as chairman of President Clinton’s Council of Economic Advisors and as chief economist for the World Bank. Stiglitz has taught at many universities, including Columbia, Stanford, Oxford, Manchester, Yale, and MIT. In recent years he has become an outspoken critic of global economic institutions. He is a popular and academic author. In *Making Globalization Work* (2007), he offers an account of his perspectives on issues of international economics.

> The fundamental problem with the neoclassical model and the corresponding model under market socialism is that they fail to take into account a variety of problems that arise from the absence of perfect information and the costs of acquiring information, as well as the absence or imperfections in certain key risk and capital markets. The absence or imperfection can, in turn, to a large extent be explained by problems of information.

**Paul Krugman** (born 1953) is a contemporary economist. His textbook *International Economics* (2007) appears on many undergraduate reading lists. Well known as a representative of progressivism, he writes a weekly column on economics, American economic policy, and American politics more generally in the New York Times. He was awarded the Nobel Prize in Economics in 2008 for his work on New Trade Theory and economic geography.

From the 1970s onwards Friedman's monetarist critique of Keynesian macroeconomics formed the starting point for a number of trends in macroeconomic theory opposed to the idea that government intervention can or should stabilise the economy. Robert Lucas criticized Keynesian thought for its inconsistency with microeconomic theory. Lucas's critique set the stage for a neoclassical school of macroeconomics, New Classical economics based on the foundation of classical economics. Lucas also popularized the idea of rational expectations, which was used as the basis for several new classical theories including the Policy Ineffectiveness Proposition.

The standard model for new classical economics is the real business cycle theory, which sought to explain observed fluctuations in output and employment in terms of real variables such as changes in technology and tastes. Assuming competitive markets, real business cycle theory implied that cyclical fluctuations are optimal responses to variability in technology and tastes, and that macroeconomic stabilisation policies must reduce welfare.

Keynesian economics made a comeback among mainstream economists with the advent of New Keynesian macroeconomics. The central theme of new Keynesianism was the provision of a microeconomic foundation for Keynesian macroeconomics, obtained by identifying minimal deviations from the standard microeconomic assumptions which yield Keynesian macroeconomic conclusions, such as the possibility of significant welfare benefits from macroeconomic stabilization.[Akerlof's 'menu costs' arguments, showing that, under imperfect competition, small deviations from rationality generate significant (in welfare terms) price stickiness, are good example of this kind of work.

Economists have combined the methodology of real business cycle theory with theoretical elements, like sticky prices, from new Keynesian theory to produce the new neoclassical synthesis. Dynamic stochastic general equilibrium (DSGE) models, large systems of microeconomic equations combined into models of the general economy, are central to this new synthesis. The synthesis dominates present day economics.
Economic theories are constantly changing. Keynesian theory, with its emphasis on activist government policies to promote high employment, dominated economic policymaking in the early post-war period. But, starting in the late 1960s, troubling inflation and lagging productivity prodded economists to look for new solutions. From this search, new theories emerged:

Monetarism updates the Quantity Theory, the basis for macroeconomic analysis before Keynes. It reemphasizes the critical role of monetary growth in determining inflation.

Rational Expectations Theory provides a contemporary rationale for the pre-Keynesian tradition of limited government involvement in the economy. It argues that the market's ability to anticipate government policy actions limits their effectiveness.

Supply-side Economics recalls the Classical School's concern with economic growth as a fundamental prerequisite for improving society's material well-being. It emphasizes the need for incentives to save and invest if the nation's economy is to grow.

Today, Keynesianism is becoming increasingly popular – again. Adherents of Hayek are fighting steadily losing battles as the global economy points up the validity of Marxian critiques of state-supported capitalism. And crossing into the realm of liberal/democratic ideals, more and more citizens around the globe are souring on un-restrained capitalism and clamouring for more openness, transparency, and regulation of especially larger corporations.

These theories and others will be debated and tested. Some will be accepted, some modified, and others rejected as we search to answer these basic economic questions: How do we decide what to produce with our limited resources? How do we ensure stable prices and full employment of resources? How do we provide a rising standard of living both for now and the future?

To read more about modern theories of economics and economic development, see http://wps.aw.com/aw_todarosmit_econdevelp_8/4/1111/284582.cw/index.html

For a humorous take on the contemporary debate, see:

http://www.youtube.com/watch?v=d0nERTFo-Sk and http://www.youtube.com/watch?v=GTQnarzmTOc&feature=relmfu