**History of economic thought**

**Introduction**

The history of economic thought deals with different thinkers and theories in the subject that became political economy and economics from the ancient world to the present day. It includes many different schools of economic thought.

Ancient Greek writers such as the philosopher Aristotle examined ideas about the art of wealth acquisition, and questioned whether property is best left in private or public hands.

In medieval times, Scholastic scholars such as Thomas Aquinas argued that it was a moral obligation of businesses to sell goods at a just price.

Since renaissance, economics and economic thought developed almost exclusively in the West until the 20th century.

Scottish philosopher Adam Smith is often cited as "the Father of Modern Economics" for his treatise The Wealth of Nations (1776). His ideas built upon a considerable body of work from predecessors in the eighteenth century, particularly the Physiocrats. His book appeared on the eve of the Industrial Revolution, with associated major changes in the economy.

Smith's successors included such classical economists as Thomas Malthus, Jean-Baptiste Say, David Ricardo, and John Stuart Mill. They examined ways the landed, capitalist, and laboring classes produced and distributed national output and modelled the effects of population and international trade.

In London, Karl Marx criticized the capitalist system, which he described as exploitative and alienating.

From about 1870, neoclassical economics attempted to erect a positive, mathematical, and scientifically grounded field above politics.

After the two world wars of the early twentieth century, John Maynard Keynes led a reaction against governmental nonparticipation to economic affairs, supporting interventionist fiscal policy to stimulate economic demand and growth.

As Keynesian policies seemed to weaken in the 1970s, there emerged Neo Classical Macroeconomics, developed by prominent theorists including Robert Lucas, who tried to provide neoclassical microeconomic mechanisms to help analyse macroeconomic issues.

New Keynesian economists including Paul Krugman, Edmund Phelps, John B. Taylor responded to their critiques, eventually leading to the New Neoclassical Synthesis in macroeconomics. Meanwhile development economists like Amartya Sen, and information economists like Joseph Stiglitz introduced new ideas to economic thought.

**This text is prepared by Prof. Erdal Yavuz using mainly:**

1. *A Companion to the History of Economic Thought*. Edited by WARREN J. SAMUELS, JEFF E. BIDDLE , JOHN B. DAVIS , Blackwell Publishing Ltd , 2003

2. *“History of economic thought”* from Wikipedia, the free encyclopaedia

3. For terms “Economics A-Z terms” from The Economist review’s web site

and from Wikipedia

**1. Ancient Economic Thought**

The earliest discussions of economics date back to ancient times, e.g. Xenophon's *Oeconomicus* (ca. 360 BCE) and Chanakya's (ca. 350-283 BCE) *Arthashastra*. Until the 18th-19th century Industrial Revolution in the West, economics was not a separate discipline but part of philosophy.

Plato and Aristotle

Plato and his pupil Aristotle had had an enduring effect on Western philosophy. Ancient Athens was a slave-based society, but also developing an embryonic model of democracy.

Plato's dialogue *The Republic* (ca. 380-360 BCE) described the ideal city-state, run by philosopher-kings, and contained references to specialization of labor and production. Plato was the first to advocate the Credit Theory of Money, that money originated as a unit of account for debt.

Plato's student Aristotle's Politics (ca. 350 BCE) was mainly concerned to analyze different forms of a state (monarchy, aristocracy, constitutional government, tyranny, oligarchy, democracy) as a critique of Plato's advocacy of a ruling class of philosopher-kings.

In Politics, Book II, Part V, he argued that: “Property should be in a certain sense common, but, as a general rule, private; for, when everyone has a distinct interest, men will not complain of one another, and they will make more progress, because everyone will be attending to his own business... And further, there is the greatest pleasure in doing a kindness or service to friends or guests or companions, which can only be rendered when a man has private property. These advantages are lost by excessive unification of the state."

Though Aristotle certainly advocated there be many things held in common, he argued that not everything could be, simply because of the "wickedness of human nature". "It is clearly better that property should be private", wrote Aristotle, "but the use of it common; and the special business of the legislator is to create in men this benevolent disposition."

Aristotle was highly disapproving of usury and against making money through means of a monopoly.

Aristotle discarded Plato's credit theory of money for Metallism, the theory that money derives its value from the purchasing power of the commodity upon which it is based, and is only an "instrument", its sole purpose being a medium of exchange, which means on its own "it is worthless... not useful as a means to any of the necessities of life".

**2. Economic Thought in the Middle Ages**

**Thomas Aquinas** (1225–1274) was an Italian theologian and writer on economic issues. 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.

Thomas Aquinas taught that raising prices in response to high demand was a type of theft.

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.

**Duns Scotus** (1206–1308)

One of Aquinas' main critics was Duns Scotus (1265–1308), originally from Duns Scotland, who taught in Oxford, Cologne, and Paris.

In his work *Sententiae* (1295), he thought it possible to be more precise than Aquinas in calculating a just price, emphasizing the costs of labor and expenses, although he recognized 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.

**Ibn Khaldun** (1332–1406)

Until Joseph J. Spengler's 1964 work "Economic Thought of Islam: Ibn Khaldun", Adam Smith (1723–1790) was believed to be the "Father of Economics". Now there is a second candidate, Arab Muslim scholar Ibn Khaldun (1332–1406) of Tunisia.

In his Prolegomena (The Muqaddimah), 'Abd al-Rahman Ibn Muhammad Ibn Khaldun al-Hadrami of Tunis (A.D. 1332-1406), commonly known as Ibn Khaldun, laid down the foundations of different fields of knowledge, in particular the science of civilization (*al-'umran*).

His significant contributions to economics, however, should place him in the history of economic thought as a major forerunner, the "father," of economics, a title which has been given to Adam Smith, whose great works were published some three hundred and seventy years after Ibn Khaldun's death. Not only did Ibn Khaldun plant the germinating seeds of classical economics, whether in production, supply, or cost, but he also pioneered in consumption, demand, and utility, the cornerstones of modern economic theory.

According to Adam Smith and as further developed by David Ricardo, the exchange value of objects is to be equal to the labor time used in its production. On the basis of this concept, Karl Marx concluded that "wages of labor must equal the production of labor" and introduced his revolutionary term surplus value signifying the unjustifiable reward given to capitalists, who exploit the efforts of the labor class, or the proletariat. Yet it was Ibn Khaldun, a believer in the free market economy, who first introduced the labor theory of value without the extensions of Karl Marx.

According to Ibn Khaldun, labor is the source of value. It is necessary for all earnings and capital accumulation. This is obvious in the case of craft. Even if earning "results from something other than a craft, the value of the resulting profit and acquired (capital) must (also) include the value of the labor by which it was obtained. Without labor, it would not have been acquired."

Ibn Khaldun placed a great emphasis on the role of "extra effort," which later became known as "marginal productivity". His labor effort theory gave a reason for the rise of cities, which, as his insightful analysis of history indicated, were the focal points of civilizations.

Long before David Ricardo published his significant contribution to the field of economics in 1817, *The Principles of Political Economy and Taxation*, Ibn Khaldun gave the original explanation for the reasons behind the differences in labor earnings. They may be attributed to differences in skills, size of markets, location, craftsmanship or occupation, and the extent to which the ruler and his governors purchase the final product. As a certain type of labor becomes more precious, that is, if the demand for it exceeds its available supply, its earnings must rise.

It was Ibn Khaldun, not Adam Smith, who first presented the contribution of labor as a means of building up the wealth of a nation, stating that labor effort, increase in productivity, and exchange of products in large markets are the main reasons behind a country's wealth and prosperity. Inversely, a decline in productivity could lead to the deterioration of an economy and the earnings of its people.

It was also Ibn Khaldun, long before Adam Smith, who made a strong case for a free economy and for freedom of choice. To maximize both earnings and levels of satisfaction, a man should be free to perform whatever his gifted talents and skilled abilities dictate. Through natural talents and acquired skills, man can freely produce objects of' high quality, and, often, more units of labor per hour.

In addition to his original contribution to the economics of labor, Ibn Khaldun introduced and ingeniously analyzed the interplay of several tools of economic analysis, such is demand, supply, prices, and profits. Demand for an object is based on the utility of acquiring it and not necessarily the need for it. Utility is therefore the motive force behind demand. It creates the incentives for consumer spending in the marketplace. Ibn Khaldun had therefore planted the first seed of modern demand theory, which since been developed and expanded by Thomas Robert Malthus, Alfred Marshall, John Hicks, and others. As a commodity in demand attracts increased consumer spending, both the price and the quantity sold are increased. Similarly, if the demand for a certain craft decreases, its sales fall and consequently its price is reduced.

As is commonly known, modern price theory states that cost is the backbone of supply theory. It was Ibn Khaldun who first examined analytically the role of the cost of production on supply and prices.

Ibn Khaldun concluded that both excessively low prices and excessively high prices are disruptive to markets. It is therefore advisable that states not hold prices artificially low through subsidies or other methods of market intervention. Ibn Khaldun had thus laid down the foundations of ideas which later led to the formulation of disequilibrium analysis. He also cited several factors affecting the upward general price level, such as increase in demand, restrictions of supply, and increase in the cost of production, which includes a sales tax as one of the components of a total cost.

As to the impact of restricted supply on the price level, Ibn Khaldun summed it up thus: "When goods are few and rare, their prices go up." It becomes obvious that Ibn Khaldun discovered what is now known as cost-push and demand-pull causes of inflationary pressures. In fact, he was the first philosopher in history who systematically identified factors affecting either the price of a good or the general price level.

In macroeconomics, Ibn Khaldun laid the foundations of what John Maynard Keynes called "aggregate effective demand," the multiplier effect and the equality of income and expenditure. When there is more total demand as population increases, there is more production, profits, customs, and taxes. The upward cycle of growth continues as civilization flourishes and a new wave of total demand is created for the crafts and luxury products. The concept of the multiplier was later developed and expanded by several economists, in particular by John Maynard Keynes. However, it was discovered for the first time in history by Ibn Khaldun.

Modern national income accounts were also developed and expanded using the equality of income and expenditures. Expenditures of one citizen are income to others; therefore total expenditures are equal to total incomes. This equality was first discovered by Ibn Khaldun. If both income and expenditure are large, the inhabitants become more favourably situated, and the city grows."

Ibn Khaldun also contributed to the field of international economics. Through his perceptive observations and his analytical mind, he undoubtedly shed light on the advantages of trade among nations. Through foreign trade, according to Ibn Khaldun, people's satisfaction, merchants' profits, and countries' wealth are all increased.

Ibn Khaldun had not only been well established as the father of the field of sociology, but he had also been well recognized in the field of history, as the following passage from Arnold Toynbee indicates: “*In his chosen field of intellectual activity [Ibn Khaldun] appears to have been inspired by no predecessors ... and yet, in the Prolegomena ... to his Universal History he has conceived and formulated a philosophy of history which is undoubtedly the greatest work of its kind that has yet been created by any mind in any time or place.*” Arnold J. Toynbee, A Study of History (London: Oxford University Press, 1935) 3:322

Through his great sense and knowledge of history, together with his microscopic observations of men, times, and places, Ibn Khaldun used an insightful empirical investigation to analyze and produce original economic thought. He left a wealth of contributions for the first time in history in the field of economics. He clearly demonstrated breadth and depth in his coverage of value and its relationship to labor; his analysis of his theory of capital accumulation and its relationship to the rise and fall of dynasties; his perceptions of the dynamics of demand, supply, prices, and profits; his treatment of the subjects of money and the role of governments; his remarkable theory of taxation, and other economic subjects. His unprecedented contributions to the overall field of economics should make him, Ibn Khaldun, the father of economics.

**3.Mercantilism, Nationalism, and International Trade**

Despite the localism of the Middle Ages, the weakening of Feudalism saw new national economic frameworks begin to be strengthened. After the voyages of Christopher Columbus and others opened up new opportunities for trade with the New World and Asia.

Newly-powerful monarchies wanted a more powerful military state to increase their status. Mercantilism was a political movement and an economic theory that advocated the use of the state's military power to ensure that local markets and supply sources were protected, developed Protectionism.

Mercantile theorists thought that international trade could not benefit all countries at the same time. Because money and precious metals were the only source of riches, there was a limited quantity of resources to be shared between countries, therefore, tariffs should be used to encourage exports (bringing more money into the country) and discourage imports (sending money abroad). In other words a positive balance of trade ought to be maintained via a surplus of exports, often backed by military might.

Despite its popularity, the term mercantilism was not used until 1763 by marquis de Mirabeau (1715–1789), and popularized by Adam Smith in 1776, who strongly opposed its ideas.

**Sir Thomas More** (1478-1535)

In 1516 English humanist Sir Thomas More (1478-1535) published *Utopia*, which describes an ideal society where land is owned in common and there is universal education and religious tolerance, inspiring the English Poor Laws (1587) and the communism-socialism movement.

**Jean Bodin** (1530-96)

In 1568 Jean Bodin (1530-1596) of France published a book , containing the first known analysis of economic inflation, which he claimed was being caused by the importation of gold and silver from South America, backing the Quantity Theory of Money.

**Thomas Mun** (1571–1641) describes early mercantilist policy in his book *England's Treasure by Foreign Trade*. According to Mun, trade was the only way to increase England's treasure (national wealth), and in pursuit of this end he suggested several courses of action. Important were careful consumption to increase the amount of goods available for export, increased utilization of land and other domestic natural resources to reduce import requirements, lowering of export duties on goods produced domestically from foreign materials, and the export of goods with inelastic demand because more money could be made from higher prices.

**Jean-Baptiste Colbert** (1619–83) was minister of finance under King Louis XIV of France, setting up national guilds to regulate major industries. Silk, linen, tapestry, furniture manufacture and wine were examples of the crafts in which France specialized, all of which came to require membership of a guild to operate in until the French Revolution. According to Colbert, "It is simply and solely the abundance of money within a state [which] makes the difference in its grandeur and power."

**John Locke** (1632–1704) educated in London and Oxford. He is considered one of the most significant philosophers of his era mainly for his critique of Thomas Hobbes' defence 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 property rights. He defined property broadly to include people's lives and liberties, as well as their wealth. When people combined their labor with their surroundings that created property rights.

Locke was arguing that not only should the government stop 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), arguing 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** (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 the necessity of a favourable trade balance was wrong. Trade, he argued, benefits both sides, it promotes specialization, the division of labor and produces an increase in wealth for everyone. Regulation of trade interfered with these benefits by reducing the flow of wealth.

**David Hume** (1711–1776) agreed with North's philosophy and denounced mercantilist assumptions. His contributions were set down in *Political Discourses* (1752), and later consolidated in his *Essays, Moral, Political, Literary* (1777). Hume thought that it was undesirable to struggle for a favourable balance of trade because, 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.

**4. The Physiocrats and the Circular Flow**

**Vincent de Gournay** (1712–1759) is reputed to have asked why it was so hard to laissez faire ("let it be"), laissez passer ("let it pass"). He was one of the early Physiocrats, a Greek word meaning "government of nature", who held that agriculture was the source of wealth.

Physiocrats accused cities for their artificiality and praised more natural styles of living. They celebrated farmers.

Over the end of the seventeenth and beginning of the eighteenth century big advances in natural science and anatomy were being made, including the discovery of blood circulation through the human body. This concept was mirrored in the physiocrats' economic theory, with the notion of a circular flow of income throughout the economy.

**François Quesnay** (1694–1774) was the court physician to King Louis XV of France. He believed that trade and industry were not sources of wealth, and instead in his book *Tableau Economique* (*Economic Table* , 1758) argued that agricultural surpluses, by flowing through the economy in the form of rent, wages, and purchases were the real economic movers. Taxes on the productive classes, such as farmers, should be reduced against rises for unproductive classes, such as landowners, since their luxurious way of life distorts the income flow.

**Anne Robert Jacques Turgot** (1727–81) was born in Paris and from an old Norman family. His best known work, *Réflexions sur la Formation et la Distribution des Richesses* (Reflections on the Formation and Distribution of Wealth) (1766) developed Quesnay's theory that land is the only source of wealth. Turgot viewed society in terms of three classes: the productive agricultural class, the salaried artisan class and the landowning class. He argued that only the net product of land should be taxed and advocated the complete freedom of commerce and industry.

In August 1774 Turgot was appointed to be minister of finance, and in the space of two years he introduced many anti-mercantile and anti-feudal measures supported by the king. A statement of his guiding principles, given to the king were "no bankruptcy, no tax increases, no borrowing." Turgot's ultimate wish was to have a single tax on land and abolish all other indirect taxes, but measures he introduced were met with great opposition from landed interests.

**5. Adam Smith and *The Wealth of Nations***

**Adam Smith (**1723–1790) is popularly seen as the father of modern political economy. His 1776 publication *An Inquiry Into the Nature and Causes of the Wealth of Nations* happened to coincide not only with the American Revolution, shortly before the Europe-wide upheavals of the French Revolution, but also the beginning of the “industrial revolution” that allowed more wealth to be created on a larger scale than ever before.

Smith was a Scottish moral philosopher, whose first book was *The Theory of Moral Sentiments* (1759). He argued in it that people's ethical systems develop through personal relations with other individuals, that right and wrong are sensed through others' reactions to one's behaviour.

Adam Smith's famous “*Invisible Hand*” and statement on “self-interest” from *the Wealth of Nations* : "*It is not from the benevolence of the butcher, the brewer or the baker, that we expect our dinner, but from their regard to their own self-interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages.*"

Smith argued for a "system of natural liberty" where individual effort was the producer of social good. Smith believed even the selfish within society worked for the good of all when acting in a competitive market. Smith thought true value of things derived from the amount of labor invested in them.

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

Labor, therefore, is the real measure of the exchangeable value of all commodities. The real price of everything, what everything really costs to the man who wants to acquire it, is the toil and trouble of acquiring it.

When the quantity of any commodity which is brought to market falls short of the effectual demand, all those who are willing to pay cannot be supplied with the quantity which they want... a competition will begin among them, and the market price will rise... When the quantity brought to market exceeds the effectual demand, it cannot be all sold to those who are willing to pay the whole value of the rent, wages and profit, the market price will sink.

Both labor division and market widening requires more intensive accumulation of capital by the entrepreneurs and leaders of business and industry. The whole system is strengthened by maintaining the security of property rights.

The existence of monopoly and the potential for cartels, which would later form the core of competition, could distort the benefits of free markets to the advantage of businesses at the expense of consumer sovereignty.

**6. Classical Political Economy**

The classical economists were referred to as a group for the first time by Karl Marx. One unifying part of their theories was the “labor 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, instability, poverty, apparition of a working class.

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 “under consumption theory”, as advanced by the Birmingham School and Malthus in the early 19th century. These argued for government action to diminish unemployment and economic downturns, and were an intellectual predecessor of what later became Keynesian economics in the 1930s.

**Jeremy Bentham** (1748–1832) was perhaps the most radical thinker of his time, and developed the concept of “utilitarianism”. Bentham was a believer in universal suffrage, free speech, free trade and health insurance at a time when few dared to argue for any.

In *An Introduction to the Principles of Morals and Legislation* (1789) 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.

**Jean-Baptiste Say** (1767–1832), his “Say's Law”, which states that supply always equals demand, was rarely challenged until the 20th century.

Jean-Baptiste Say was a Frenchman who helped popularize Adam Smith's work in France. His book *A Treatise on Political Economy* (1803) contained a brief passage, which later became orthodoxy in political economics until the Great Depression, now known as *Say's Law of markets*. Say argued that there could never be a general deficiency of demand or a general glut of commodities in the whole economy. People produce things, to fulfil their own wants, rather than those of others; therefore production is not a question of supply, but an indication of producers demanding goods.

Say agreed that a part of the income is saved by the households, but in the long term, savings are invested. Investment and consumption are the two elements of demand, so that production is demand, so it is impossible for production to outrun demand, or for there to be a "general glut" of supply. Say also argued that money was neutral, because its sole role is to facilitate exchanges, therefore, people demand money only to buy commodities; "money is a veil".

To sum up these two ideas, Say said "products are exchanged for products". At most, there will be different economic sectors whose demands are not fulfilled. But over time supplies will shift, businesses will replace for different production and the market will correct itself. An example of a "general oversupply" could be unemployment, in other words, too great a supply of workers, and too few jobs.

**Thomas Malthus** (1766–1834) was a minister in the United Kingdom Parliament who, in contrast to Jeremy Bentham, believed in strict government abstention from social ills. Malthus devoted the last chapter of his book *Principles of Political Economy* (1820) to contradicting Say's Law, arguing that the economy could stagnate with a lack of "effectual demand" caused by a "general glut" of goods. In that case, wages that total less than the costs of production cannot purchase the total output of industry, causing deflation; price falls decrease incentives to invest, creating a downward spiral.

Malthus is more famous however for his 1798 work *An Essay on the Principle of Population.* Malthus argued that all government intervention would ultimately prove futile because of two factors, population growth and limited resources. "Food is necessary to the existence of man", wrote Malthus. "The passion between the sexes is necessary and will remain nearly in its present state", he added, meaning that the "power of the population is infinitely greater than the power in the Earth to produce subsistence for man." Nevertheless growth in population is checked by "misery and vice". Any increase in wages for the masses would cause only a temporary growth in population, which given the constraints in the supply of the Earth's produce would lead to misery, and a corresponding readjustment to the original population. However more labor could mean more economic growth, either one of which was able to be produced by an accumulation of capital.

**Robert Owen** (1771–1858)was British industrialist who worked to improve the conditions of his workers. He bought textile mills in New Lanark, Scotland where he forbade children under ten to work, limited the workday to 6 a.m. to 7 p.m., and provided evening schools for children when they finished working.

In 1816 he published his vision in *The New View of Society* during the passage of the Factory Acts, but his attempts from 1824 to begin a new utopian community in New Harmony, Indiana ended in failure.

**David Ricardo** (1772–1823) is renowned for his law of “comparative advantage”. Ricardo's best known work is his *Principles of Political Economy and Taxation* (1817), which contains his critique of barriers to international trade and a description of the manner the income is distributed in the population.

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.

Economics for Ricardo was all about the relationship between the three "factors of production": land, labor 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 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. 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.

**7. “American System”,“National System” ,“Historical School”**

Basing approaches on the protectionist philosophy of U.S. Treasury secretary Alexander Hamilton (1755-1804), U.S. Senator Henry Clay (1777-1852) promoted the “American System” of developmental capitalism utilizing protective tariffs and government intervention to insure national self-sufficiency. In 1822 Irish-born American economist Mathew Carey (1760-1839) published *Essays on Political Economy; or, The Most Certain Means of Promoting the Wealth, Power, Resources, and Happiness of Nations, Applied Particularly to the United State*s, one of the first treatises favouring Alexander Hamilton's protectionist economic policy. In 1837-1840 his son Henry Charles Carey (1793-1879) published *Principles of Political Economy*, which soon became the standard representation of the American school of economic thought, dominating the U.S. economic system until after World War II.

In 1851 Henry Charles Carey published *The Harmony of Interests: Agricultural, Manufacturing, and Commercial* (1851), which rejects the "British System" of *laissez faire* free trade capitalism in favour of the American System.

German economist Friedrich List (1789-1846) in 1841 after a stay in the U.S. convinced by the value of American System, published *The National System of Political Economy*, advocating protectionism and government involvement in the economy to catch up with rivals which became the biggest selling German economics book after Karl Marx's "Das Kapital", and influenced National Socialism and the European Economic Community.

In the mid-1840s German economist Wilhelm Roscher (1817-1894) founded the “German Historical School of Economics”, which promoted the *cyclical theory* of nations whose economies pass through youth, manhood, and senility(old age), and spread to academia, dominating for the rest of the 19th century.

Charles Gide (1847-1932) continued the historical school tradition in France.

**8. Early 19th Century**

**Pierre-Joseph Proudhon** (1809–1865)

French anarchist Pierre-Joseph Proudhon (1809–1865). While deeply critical of capitalism and in favour of workers' associations to replace it, he also objected to those contemporary socialists who idolized centralized state-run formations.

In *System of Economic Contradictions* (1846) Proudhon made a wide-ranging critique of capitalism, analyzing the contradictory effects of machinery, competition, property, monopoly and other aspects of the economy.

Instead of capitalism, he argued for a *mutualist* system based upon equality, – in other words, the organization of labor, which involves the the end of property.

In his book *What is Property* (1840) he argues that property is theft. However, towards the end of his life, Proudhon modified some of his earlier views. In the posthumously published *Theory of Property*, he argued that "property is the only power that can act as a counterweight to the State."

**John Stuart Mill** (1806–1873) was the dominant figure of political economic thought of his time, as well as being a Member of Parliament for the seat of Westminster, and a leading political philosopher. Mill's textbook, first published in 1848 and titled *Principles of Political Economy* was essentially a summary of the economic wisdom of the mid nineteenth century.*Principles of Political Economy* was used as the standard texts by most universities well into the beginning of the twentieth century.

On the question of economic growth Mill tried to find a middle ground between Adam Smith's view of ever expanding opportunities for trade and technological innovation and Thomas Malthus' view of the natural limits of population.

In his fourth book Mill set out a number of possible future results.

The first followed the Malthusian line that population grew quicker than supplies, leading to falling wages and rising profits.

The second, with Smith, said if capital accumulated faster than population grew then real wages would rise.

Third, echoing David Ricardo, should capital accumulate and population increase at the same rate, yet technology stay stable, there would be no change in real wages because supply and demand for labor would be the same.

The fourth alternative was that technology advanced faster than population and capital stock increased. The result would be a prospering economy.

Mill felt the third scenario most likely, and he assumed technology advanced would have to end at some point. But on the prospect of continuing economic growth, Mill was more hesitant.

Mill is also credited with being the first person to speak of supply and demand as a relationship rather than mere quantities of goods on markets, the concept of “opportunity cost” and the rejection of the “wage fund” doctrine.

**9. Capitalism, Communism, and Karl Marx**

**Karl Marx** (1818–83) published a fundamental critique of classical economics based on the labor theory of value.

Just as the term "Mercantilism" had been coined and popularized by its critics like Adam Smith, so was the term "Capitalism" used by its critics, primarily Karl Marx (1818–1883), who was, and in many ways still remains the preeminent Socialist economist.

The Socialist movement that Marx joined had emerged in response to the miserable conditions of the working class in the new industrial era, and the classical economics which it was based on.

The combination of economic-political theory published in *The Communist Manifesto* (1848) and *Das Kapital* (1867) with the dialectic theory of history inspired by Friedrich Hegel (1770-1831) provided a revolutionary critique of nineteenth-century capitalism.

Marx and Friedrich Engels (1820–95) co-authored *The Communist Manifesto* and the second volume of *Das Kapital*.

In 1845 German radical Friedrich Engels (1820–1895) published *The Condition of the Working Class in England* in 1844, describing workers in Manchester as "the most obvious height of social misery in our day."

Marx wrote his major work *Das Kapital* (1867) at the British Museum's library in London. Karl Marx begins it with the concept of commodities. Before capitalist societies, says Marx, the mode of production was based on slavery (e.g. in ancient Rome) before moving to feudal serfdom (e.g. in medieval Europe). As society has advanced, economic bondage has become looser, but the current nexus of labor exchange has produced an equally unreliable and unstable situation allowing the conditions for revolution. People buy and sell their labor in the same way as people buy and sell goods and services. People themselves are disposable commodities.

As he wrote in The Communist Manifesto, *“The history of all hitherto existing society is the history of class struggles. Freeman and slave, patrician and plebeian, lord and serf, guild master and journeyman, in a word, oppressor and oppressed, stood in constant opposition to one another... The modern bourgeois society that has sprouted from the ruins of feudal society has not done away with class antagonisms. It has but established new classes, new conditions of oppression, and new forms of struggle in place of the old ones*."

From the first page of *Das Kapital*: "*The wealth of those societies in which the capitalist mode of production prevails, presents itself as an immense accumulation of commodities, its unit being a single commodity. Our investigation must therefore begin with the analysis of a commodity.... When people mix their labor with an object it becomes a ‘commodity’. In the natural world there are trees, diamonds, iron ore and people. In the economic world they become chairs, rings, factories and workers*.”

Marx distinguishes the “use value” of a thing from its “exchange value”, which can be entirely different. The use value of a thing derives from the amount of labor used to produce it, says Marx, following the classical economists in the labor theory of value. However, Marx did not believe labor only was the source of use value in things. He believed value can derive too from natural goods and refined his definition of use value to "socially necessary labor time" (the time people need to produce things when they are not lazy or inefficient). Furthermore, people subjectively inflate the value of things, for instance because there's a commodity fetish for glimmering diamonds, and oppressive power relations involved in commodity production. These two factors mean exchange values differ greatly. Employers pay their workers less in "exchange value" than the workers produce in "use value". The difference makes up the capitalist's profit, or in Marx's terminology, "surplus value”. Therefore, says Marx, capitalism is a system of exploitation.

Marx believed that a reserve army of the unemployed would grow and grow, running a downward pressure on wages as desperate people accept work for less. But this would produce a deficit of demand as the people's power to purchase products lagged. There would be a excess in unsold products, production would reduce, profits decline until capital accumulation halts in an economic depression. When the excess clears, the economy again starts to boom before the next cyclical bust begin. With every boom and bust, with every capitalist crisis, thought Marx, tension and conflict between the increasingly polarized classes of capitalists and workers heightens.

Ultimately, Marx envisaged a revolution and the creation of a classless society, led by a Communist party

**10. Marginalism, mathematical economics etc.**

American economist **John Bates Clark** (1847-1938)promoted the “marginalist revolution”, publishing *The Distribution of Wealth* (1899), which proposed Clark's Law of Capitalism: "Given competition and homogeneous factors of production labor and capital, the repartition of the social product will be according to the productivity of the last physical input of units of labor and capital", also expressed as "What a social class gets is, under natural law, what it contributes to the general output of industry."

In 1838 French mathematician **Antoine Augustin Cournot** (1801-1877) published *Researches on the Mathematical Principles of the Theory of Wealth*, which introduced functions and probability into economics, deriving the first equation for supply and demand as a function of price and publishing the first supply-demand curves, founding modern economic analysis. In it he proposed the Cournot “Duopoly Model of Competition”, where firms decide the amount of output they will produce.

In 1883 French mathematician Joseph Louis Francois Bertrand (1822-1900) reworked it using prices instead of quantities, proposing the Bertrand Model of Competition.

In 1881 Irish economist **Francis Edgeworth** (1845-1926) published *Mathematical Psychics: An Essay on the Application of Mathematics to the Moral Sciences*, which introduced *indifference curves* and the generalized *utility function*, along with Edgeworth's Limit Theorem, extending the Bertrand Model to handle capacity constraints, and proposing Edgeworth’s Paradox for when there is no limit to what the firms can sell.

Italian economist **Vilfredo Pareto** (1848–1923) was best known for developing the concept of an economy that would permit maximizing the utility level of each individual given the possible utility level of others from production and exchange. Such a result came to be called “Pareto Efficiency”. 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** (1842–1924) wrote the main alternative textbook to John Stuart Mill of the day, *Principles of Economics* (1890).Alfred Marshall is also credited with an attempt to put economics on a more mathematical footing. The first professor of economics at the University of Cambridge, his work abandoned the term "political economy" for his favourite "economics".

He viewed math as a way to simplify economic reasoning. Coming after the marginal revolution, Marshall concentrated on integration the classical labor 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 Curve”, which treats the intersection of the supply and demand curves as the equilibrium of price in a competitive market. Over the long run, he argued the costs of production and the price of goods and services tend towards the lowest point consistent with continued production.

**11. The Austrian School of Economics**

While economics at the end of the nineteenth century and the beginning of the twentieth was dominated increasingly by mathematical analysis, the followers of **Carl Menger** (1840-1921) and his disciples Eugen von Böhm-Bawerk (1851–1914) and **Friedrich von Wieser** (1851–1926) ( who named the term "marginal utility") followed a different route, advocating the use of deductive logic instead. This group became known as the Austrian School of Economics. Thorstein Veblen in *The Preconceptions of Economic Science* (1900) contrasted neoclassical marginalists in the tradition of Alfred Marshall with the philosophies of the Austrian School.

**Joseph Alois Schumpeter** (1883–1950) was an Austrian School economist and political scientist best 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 synthesized the theories about business cycles, suggesting that they 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 a central figure in the Austrian School. In his 1949 magnum opus on economics, *Human Action*, Mises introduced Praxeology, "the science of human action", as a more general conceptual foundation of the social sciences. Praxeology views economics as a series of voluntary trades that increase the satisfaction of the involved parties.

In 1920 Mises argued that socialism suffers from an unsolvable economic calculation problem, which according to him could only be solved through free market price mechanisms, launching the economic calculation debate with socialist economists.

Mises' criticisms of socialism had a large influence on the economic thinking of Austrian School economist **Friedrich Hayek** (1899–1992), who, while initially sympathetic, 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 belittled 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 later 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 unspoken knowledge to each other, to solve the economic calculation problem. Along with his socialist Swedish contemporary and opponent Gunnar Myrdal (1898–1987), Hayek was awarded the Nobel Prize in Economics in 1974.

**12. And some other important thinkers**

**Thorstein Veblen** (1857–1929), is one of the best-known early critics of the "American Way". In *The Theory of the Leisure Class* (1899) he disrespects materialistic culture and wealthy people who obviously consumed their riches as a way of demonstrating success.

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 prevented because businesses pursue pure profit.

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.

In 1919, along with Charles A. Beard, James Harvey Robinson, and John Dewey he helped found the New School for Social Research, known today as The New School.

In 1905 German sociologist-economist **Max Weber** (1864-1920) published *The Protestant Ethic and the Spirit of Capitalism*, which claimed that it was the Protestant work ethic rather than atheistic dialectical materialism that drove the development of capitalism, causing a change in the debate and becoming one of the most important sociological works of the 20th century.

**13.Economic Thought Between the World Wars**

After World War I, Europe and the Soviet Union lay in ruins, and the British Empire was nearing its end, leaving the United States as the preeminent global economic power.

Before World War II, American economists had played a minor role. During this time “institutional economists” had been largely critical of the "American Way" of life, especially during Wall Street Crash of 1929.

**Institutional economics, John R. Commons, Walton H. Hamilton**

In 1919 Yale economist Walton H. Hamilton created the term "institutional economics". In 1934 John R. Commons (1862–1945 published *Institutional Economics* (1934), based on the concept that the economy is a web of relationships between people with diverging interests, including monopolies, large corporations, labor disputes, and fluctuating business cycles. They do however have an interest in resolving these disputes. Government 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.

**Arthur Cecil Pigou** (1877–1959) In 1920 Alfred Marshall's student Arthur Cecil Pigou (1877–1959) published *Wealth and Welfare*, which insisted on the possibility of market failures, claiming that markets are inefficient in the case of economic externalities, and the state must interfere to prevent them.

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 wages from adjusting automatically. This was to be the focus of attack from Keynes.

**John Maynard Keynes and Keynesianism**

John Maynard Keynes (1883–1946) began his career as a lecturer before working for the British government during the Great War, rising to be the British government's financial representative at the Versailles Conference, where he profoundly disagreed with the decisions made.

His observations were laid out in his book *The Economic Consequences of the Peace* (1919). He resigned from the conference, using extensive economic data provided by the conference records to argue 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.

Keynes's dark forecasts matched the world's experience through the Great Depression which began in 1929, and the descent into World War II in 1939. With the defeat of Fascism, the Bretton Woods Conference was held in July 1944 to establish a new economic order, in which Keynes was again to play a leading role.

Keynes published his most important work, *The General Theory of Employment, Interest and Money* in 1936. The Great Depression had started 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 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”, “marginal efficiency of capital”,” “liquidity preference”, and “multiplier effect” as variables which determine the level of the economy's output, employment, and price levels. Much of this terminology was invented by Keynes especially for his General Theory.

Keynes argued that if savings were being withdrawn from investment in financial markets, total spending falls, leading 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. 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.

Keynes believed in the 1930s, conditions necessitated public sector action. Keynes said “deficit spending” would stimulus economic activity. This he had advocated in an open letter to U.S. President Franklin D. Roosevelt in the New York Times (1933). Keynes also believed in a more egalitarian distribution of income, and taxation.

His ideas had already shaped a new global economic order, and all Western governments followed the Keynesian economics program of deficit spending to avert crises and maintain full employment.

**Joan Robinson** (1903–1983). One of Keynes's pupils at Cambridge, who contributed to the notion that competition is rarely perfect in a market.

In *The Production Function and the Theory of Capital* (1953) while neo- classicists stress that a competitive market forces producers to minimize 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. If the price of the final products determines the price of capital, also 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, 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** (1898–1983) came to England from Fascist Italy in the 1920s, and became a member of the Cambridge Circus. 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 trade-offs, collective bargaining, labor 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 simple market adjustments.

**14. Other schools**

**Market socialism**

In response to the Economic Calculation Problem proposed by the Austrian School of Economics that disputes the efficiency of a state-run economy, the theory of Market Socialism was developed in the late 1920s and 1930s by economists Fred M. Taylor (1855-1932), Oskar R. Lange (1904-1965), Abba Lerner (1903–82) et al., combining Marxian economics with neoclassical economics after discarding the labor theory of value.

**The Stockholm School of Economics**

In the 1930s the Stockholm School of Economics was founded by Eli Heckscher (1879-1952), Bertil Ohlin (1899-1977), Gunnar Myrdal (1898–1987) et al. based on the works of John Maynard Keynes and Knut Wicksell (1851-1926), advising the founders of the Swedish socialist welfare state.

In 1933 Ohlin and Heckscher proposed the “Heckscher-Ohlin Model” of International Trade, which claims that countries will export products that use their abundant and cheap factors of production and import products that use their scarce factors of production.

**Econometrics**

In the 1930s Norwegian economist Ragnar Frisch (1895–1973) and Dutch economist Jan Tinbergen (1903–1994) pioneered “econometrics”, receiving the Nobel Prize in Economics in 1969.

In 1936 Russian-American economist Wassily Leontief (1905–1999) proposed the Input-Output Model of economics, which uses linear algebra and is ideally suited to computers, receiving the 1973 Nobel Economics Prize.

After World War II, Lawrence Klein (1920–) pioneered the use of computers in econometric modelling, receiving the 1980 Nobel Economics Prize.

**Corporate Governance**

Adolf Augustus Berle, Jr. (1895–1971) with Gardiner Means was a foundational figure of modern corporate governance.

The Great Depression was a time of significant disturbance in the world economy. One of the most original contributions to understanding what went wrong came from Harvard University lawyer Adolf Berle (1895–1971), In his book with American economist Gardiner C. Means (1896-1988) *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 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. Berle argued that the unaccountable directors of companies were therefore apt to direct the fruits of enterprise profits into their own pockets, as well as manage in their own interests.

**Industrial Organization Economics**

In 1933 American economist Edward Chamberlin (1899-1967) published *The Theory of Monopolistic Competition*. The same year British economist Joan Robinson (1903-1983) published *The Economics of Imperfect Competition*. Together they founded “Industrial Organization Economics”. Chamberlin also founded “Experimental Economics”.

**Value Investing**

In 1934 after learning the lessons from the 1929 Stock Market Crash, Columbia University economists Benjamin Graham (1894–1976) and David Dodd (1895–1988) published *Security Analysis*, promoting “value investing”, which became the bible for investors. In 1949 Graham published *The Intelligent Investor*, which billionaire investor Warren Buffett later called "the best book about investing ever written".

**Linear Programming**

In 1939 Russian economist Leonid Kantorovich (1912-1986) developed Linear Programming for the optimal allocation of resources, receiving the 1975 Nobel Economics Prize.

**Game Theory**

In 1944 Hungarian-American mathematician John von Neumann (1903-1957) and Austrian School economist Oskar Morgenstern (1902-1977) published *Theory of Games and Economic Behavior*, founding Game Theory, which was widely adopted by economists.

**15. Post-World War Economic Thought: The Globalization Era**

The globalization era began with the end of World War II and the rise of the U.S. as the world's leading economic power, along with the United Nations. To prevent another global depression, the victorious U.S. forgave Germany its war debts and used its surpluses to rebuild Europe and encourage reindustrialization of Germany and Japan.

**John Kenneth Galbraith and The Affluent Society**

John Kenneth Galbraith (1908–2006) began his career as a "new dealer", in the administration of Franklin Delano Roosevelt during the Great Depression.

After World War II, became one of the standard bearers for pro-active government and liberal-democrat politics. In *The Affluent Society* (1958), Galbraith argued that voters reaching a certain material wealth begin to vote against the common good. He also 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.

In *The New Industrial State* Galbraith argued that economic decisions are planned by a private-bureaucracy, a techno structure 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 through increases in interest rates.

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, Neoclassical synthesis, and Positive economics**

Paul Samuelson (1915–2009) wrote the best-selling economics texts.

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.

Paul Samuelson published *Foundations of Economic Analysis* in 1947. Samuelson started with two assumptions. First, people and firms will act to maximize their self-interested goals. Second, markets tend towards an equilibrium of prices, where demand matches supply.

His introductory textbook *Economics* was influential and widely adopted. Paul Samuelson was awarded the new Nobel Prize in Economics in 1970 for his merging of mathematics and political economy.

**Kenneth Arrow** , American economist (1921- ) 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.

**Milton Friedman and Capitalism and Freedom**

Milton Friedman (1912–2006) of the Chicago School of Economics is one of the most influential economists of the late 20th century, receiving the Nobel Prize in Economics in 1976. He is known for *A Monetary History of the United States* (1963), in which he argued that the Great Depression was caused by the policies of the Federal Reserve.

Friedman argues that 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

Friedman was also known for his work on the consumption function, the *Permanent Income Hypothesis* (1957), contended that rational consumers would spend a proportional amount of what they perceived to be their permanent income. 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 labor market.

**Development Economics**

In 1954 economist Sir Arthur Lewis (1915–1991) proposed the Dual Sector Model of Development Economics, which claims that capitalism expands by making use of an unlimited supply of labor from the backward non-capitalist "subsistence sector" until it reaches the “Lewisian” breaking point where wages begin to rise, receiving the 1979 Nobel Economics Prize.

In 1955 Russian-born American economist Simon Kuznets (1901–1985) published an article revealing an inverted “u-shaped” relation between income inequality and economic growth, meaning that economic growth increases income inequality between rich and poor in poor countries, but decreases it in wealthy countries. In 1971 he received the Nobel Economics Prize.

**Neoclassical Growth Model**

In 1956 American economist Robert Solow (1924-) and Australian economist Trevor Swan (1918–89) proposed the Solow-Swan Neoclassical Growth Model, based on productivity, capital accumulation, population growth, and technological progress. In 1956 Swan also proposed the Swan Diagram of the internal-external balance. In 1987 Solow was awarded the Nobel Economics Prize.

**Walt Whitman Rostow and the Five Stages of Economic Development**

In 1960 American economist Walt Whitman Rostow (1916-2003) published The Stages of Economic Growth: A Non-Communist Manifesto, proposing the “Rostovian Takeoff Model of Economic Growth”, with five stages: traditional society, preconditions for take-off, take-off, drive to maturity, and age of high mass consumption.

**Public choice theory, and Constitutional economics**

In 1962 American economists James M. Buchanan (1919-2013) and Gordon Tullock (1922-) published *The Calculus of Consent*, which revived Public Choice Theory by differentiating politics (the rules of the game) from public policy (the strategies to adopt within the rules), founding Constitutional Economics, the economic analysis of constitutional law. Buchanan was awarded the 1986 Nobel Economics Prize.

**The Impossible Trinity**

In 1962-3 Scottish economist Marcus Fleming (1911–76) and Canadian economist Robert Mundell (1932-) published the *Mundell-Fleming Model of the Economy*, proposing the Impossible Trinity of fixed exchange rate, free capital movement, and an independent monetary policy, only two of which can be maintained simultaneously. Mundell received the 1999 Nobel Economics Prize.

**Information Economics**

George Akerlof (1940–) and Joseph E. Stiglitz (1943–) has both been successful as an economist and a popular author. In 1970 George Akerlof published the paper *The Market for Lemons*, founding the theory of Information Economics, receiving the 2001 Nobel Economics Prize. Joseph E. Stiglitz (1943-) also received the Nobel Economics Prize in 2001 for his work in Information Economics. He has served as chairman of President Clinton's Council of Economic Advisers, 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. *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."*

**New Trade Theory**

In 1979 American economist Paul Krugman (1953-) published a paper founding “New Trade Theory”, which attempts to explain the role of increasing returns to scale and network effects in international trade. His textbook *International Economics* (2007) appears on many undergraduate reading lists. He was awarded the Nobel Prize in Economics in 2008.

**New Neoclassical Synthesis**

In the early 1970s American Chicago School economist Robert E. Lucas, Jr. (1937-) founded New Classical Macroeconomics based on Milton Friedman's monetarist critique of Keynesian macroeconomics, and the idea of rational expectations, opposing the idea that government intervention can or should stabilize the economy. *The Policy-Ineffectiveness Proposition* (1975) of Thomas J. Sargent (1943-) and Neil Wallace (1939-), which seemed to contest basic assumption of Keynesian economics was also adopted. The Lucas aggregate supply function states that economic output is a function of money or price "surprise." Lucas was awarded the 1995 Nobel Economics Prize.

**New Keynesian Macroeconomics**

In 1985 George Akerlof (1940-) and his economist wife Janet Yellen (1946-) published on costs arguments showing that, under imperfect competition, small deviations from rationality generate significant (in welfare terms) price stickiness.

In 1975 American economists Sidney Weintraub (1914-1983) and Henry Wallich (1914-1988) published *A Tax-Based Incomes Policy*, promoting Tax-Based Incomes Policy (TIP), using the income tax mechanism to implement an anti-inflationary incomes policy. In 1978 Weintraub and American economist Paul Davidson (1930-) founded the *Journal of Post Keynesian Economics*.

**Development economics**

Indian economist Amartya Sen (1933-) is a leading development and welfare economist who expressed considerable scepticism about the validity of neoclassical assumptions, and was highly critical of rational expectations theory, devoting his work to Development Economics and human rights. He was awarded the Nobel Prize in Economics in 1998.

Daron Acemoğlu (1967-) In 2001 Turkish economist Daron Acemoğlu (1967-) et al. published The *Colonial Origins of Comparative Development*, arguing that Europeans set up growth-inducing institutions in areas where the environment was favourable for their settlement, while in unfavourable environments such as central Africa they set up extractive institutions instead.

In 2001 American economist William Easterly (1957-) published The *Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics*, criticizing foreign aid for failing to insure sustainable growth. In 2006 he published *The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good*, a reply to Jeffrey Sachs' 2005 book *The End of Poverty*, dividing foreign aid providers into top-down Planners and bottom-up Searchers, claiming that the latter have the best chance for success.

In 2011 Turkish economist Dani Rodrik (1957- ) published *The Globalization Paradox*, arguing that only two of the triad of hyper globalization, national sovereignty, and democratic politics can be sustained, and that globalization should be the first to be relaxed.

In 2011 after successfully predicting the Great Recession, Istanbul-born American economist Nouriel Roubini (1958-) published *A G-Zero World*, which claimed that "Old models of understanding global dynamics are struggling" to keep up with rapid changes:

*"We are now living in a G-Zero world, one in which no single country or bloc of countries has the political and economic leverage—or the will—to drive a truly international agenda. The result will be intensified conflict on the international stage over vitally important issues, such as international macroeconomic coordination, financial regulatory reform, trade policy, and climate change. This new order has far-reaching implications for the global economy, as companies around the world sit on enormous stockpiles of cash, waiting for the current era of political and economic uncertainty to pass. Many of them can expect an extended wait."*

**Terminology**

**affluent society** A society in which the material benefits of prosperity are widely available.

**aggregate demand**  In macroeconomics, aggregate demand (AD) is the total demand

for final goods and services in the economy at a given time and price level.It specifies the amounts of goods and services that will be purchased at all possible price levels. This is the demand for the gross domestic product of a country. It is often called effective demand.

**alienation** 1. the act of alienating; the state of being alienated. 2. Law. a transfer of the title to property by one person to another; conveyance. 3. the state of being withdrawn from the objective world.

**anarchism** The doctrine associated with Godwin, Bakunin, Proudhon, and others, that human communities can and should flourish without government. Voluntary cooperation should replace the coercive machinery of the state; government itself corrupts the natural sentiments of people. Anarchists may differ about the nature of the revolution that should destroy state power, but historically have tended to be associated with advocating violent opposition to the state. This makes them sound to be allies of the left, but the libertarian aspects of the doctrine also chime in with the right.

**Cambridge Circus** The Cambridge Circus or Keynes's Circus was a group of young Cambridge economists closely associated with John Maynard Keynes. The group consisted of Richard Kahn, James Meade, Joan Robinson, Austin Robinson, and Piero Sraffa.[

**circular flow** In economics, the terms circular flow of income or circular flow refer to a simple economic model which describes the reciprocal circulation of income between producers and consumers. In the circular flow model, the inter-dependent entities of producer and consumer are referred to as "firms" and "households" respectively and provide each other with factors in order to facilitate the flow of income

**common good** In the popular meaning, the common good describes a specific "good" that is shared and beneficial for all (or most) members of a given community. This is also how the common good is broadly defined in philosophy, ethics, and political science

**comparative advantage** refers to the ability of a party to produce a particular good or service at a lower marginal and opportunity cost over another. Even if one country is more efficient in the production of all goods (absolute advantage in all goods) than the other, both countries will still gain by trading with each other, as long as they have different relative efficiencies.

**constitutional economics** is a research area in economics and constitutionalism that has been described as extending beyond the definition of "the economic analysis of constitutional law" in explaining the choice "of alternative sets of legal-institutional-constitutional rules that constrain the choices and activities of economic and political agents." Constitutional economics studies the "compatibility of effective economic decisions with the existing constitutional framework and the limitations or the favorable conditions created by that framework.

**corporate governance** refers to the system by which corporations are directed and controlled. The governance structure specifies the distribution of rights and responsibilities among different participants in the corporation. Discussions focuses on the impact of a corporate governance system on economic efficiency, with a strong emphasis on shareholders' welfare.

**creative destruction** is a term in economics which has since the 1950s become most readily identified with Joseph Schumpeter, who adapted it from the work of Karl Marx and popularized it as a theory of economic innovation and the business cycle. The term is derived from Marxist economic theory, where it refers to the linked processes of the accumulation and annihilation of wealth under capitalism. At its most basic, "creative destruction" describes the way in which capitalist economic development arises out of the destruction of some prior economic order.

**credit theory of money** also called debt theories of money) are concerned with the relationship between credit and money. Proponents of these theories, such as Alfred Mitchell-Innes, sometimes emphasize that credit and debt are the same thing, seen from different points of view. Proponents assert that the essential nature of money is credit (debt), at least in eras where money is not backed by a commodity such as gold. Two common strands of thought within these theories are the idea that money originated as a unit of account for debt, and the position that money creation involves the simultaneous creation of money and debt.

**deficit spending** is the amount by which spending exceeds revenue over a particular period of time, also called simply deficit, or budget deficit; the opposite of budget surplus. The term may be applied to the budget of a government, private company, or individual.

**deflation** is a decrease in the general price level of goods and services. Deflation occurs when the inflation rate falls below 0% (a negative inflation rate). This should not be confused with disinflation, a slow-down in the inflation rate (i.e., when inflation declines to lower levels) Inflation reduces the real value of money over time; conversely, deflation increases the real value of money – the currency of a national or regional economy. This allows one to buy more goods with the same amount of money over time. Economists generally believe that deflation is a problem in a modern economy because it increases the real value of debt, and may aggravate recessions and lead to a deflationary spiral

**Edgeworth’s Paradox** describes a situation in which two players cannot reach a state of equilibrium with pure strategies, i.e. each charging a stable price.

Suppose two companies, A and B, sell an identical commodity product, and that customers choose the product solely on the basis of price. The situation of both companies charging zero-profit prices is not an equilibrium, since either company can raise its price and generate profits.

**equilibrium** is when supply and demand are in balance. At the equilibrium price, the quantity that buyers are willing to buy exactly matches the quantity that sellers are willing to sell. So everybody is satisfied, unlike when there is disequilibrium. General equilibrium is when supply and demand are balanced simultaneously in all the markets in an economy.

**exchange value** in political economy and especially Marxian economics, exchange value refers to one of four major attributes of a commodity. The other three aspects are use value, value and price.

**experimental economics** is the application of experimental methods to study economic questions. Data collected in experiments are used to estimate effect size, test the validity of economic theories, and illuminate market mechanisms. Economic experiments usually use cash to motivate subjects, in order to mimic real-world incentives. Experiments are used to help understand how and why markets and other exchange systems function as they do.

**factors of production** In economics, factors of production are the inputs to the production process. Finished goods are the output. Input determines the quantity of output i.e. output depends upon input. Input is the starting point and output is the end point of production process and such input-output relationship is called a production function. There are three basic factors of production: land, labor, capital. All three of these are required in combination at a time to produce a commodity. In economics, production means creation or an addition of utility. Factors of production (or productive 'inputs' or 'resources') are any commodities or services used to produce goods or services. Factors of production may also refer specifically to the primary factors, which are stocks including land, labor (the ability to work), and capital goods applied to production. Materials and energy are considered secondary factors in classical economics because they are obtained from land, labor and capital.

**fiscal policy** in economics and political science, fiscal policy is the use of government revenue collection (taxation) and expenditure (spending) to influence the economy.[1] The two main instruments of fiscal policy are changes in the level and composition of taxation and government spending in various sectors. These changes can affect the following macroeconomic variables in an economy:

**game theory** is a technique for analyzing how people, firms and governments should behave in strategic situations (in which they must interact with each other), and in deciding what to do must take into account what others are likely to do and how others might respond to what they do. For instance, competition between two firms can be analysed as a game in which firms play to achieve a long-term competitive advantage (perhaps even a monopoly). The theory helps each firm to develop its optimal strategy for, say, pricing its products and deciding how much to produce; it can help the firm to anticipate in advance what its competitor will do and shows how best to respond if the competitor does something unexpected. It is particularly useful for understanding behaviour in monopolistic competition.

**great depression** severe worldwide economic depression in the decade preceding World War II. The timing of the Great Depression varied across nations, but in most countries it started in 1930 and lasted until the late 1930s or middle 1940s. It was the longest, most widespread, and deepest depression of the 20th century. In the 21st century, the Great Depression is commonly used as an example of how far the world's economy can decline. The depression originated in the U.S., after the fall in stock prices that began around September 4, 1929, and became worldwide news with the stock market crash of October 29, 1929 (known as Black Tuesday). The Great Depression had devastating effects in countries rich and poor. Personal income, tax revenue, profits and prices dropped, while international trade plunged by more than 50%. Unemployment in the U.S. rose to 25%, and in some countries rose as high as 33%. Cities all around the world were hit hard, especially those dependent on heavy industry. Construction was virtually halted in many countries. Farming and rural areas suffered as crop prices fell by approximately 60%. Facing plummeting demand with few alternate sources of jobs, areas dependent on primary sector industries such as cash cropping, mining and logging suffered the most. Some economies started to recover by the mid-1930s. In many countries, the negative effects of the Great Depression lasted until the end of World War II.

**Heckscher-Ohlin Model** is a general equilibrium mathematical model of international trade, developed by Eli Heckscher and Bertil Ohlin at the Stockholm School of Economics. It builds on David Ricardo's theory of comparative advantage by predicting patterns of commerce and production based on the factor endowments of a trading region. The model essentially says that countries will export products that use their abundant and cheap factor(s) of production and import products that use the countries' scarce factor(s)

**impossible trinity** (also known as the Trilemma) is a trilemma in international economics which states that it is impossible to have all three of the following at the same time: 1. A fixed exchange rate 2. Free capital movement (absence of capital controls) 3. An independent monetary policy. It is a hypothesis based on the findings from empirical studies where governments which have tried to simultaneously pursue all three goals have failed.

**Industrial Revolution** is the transition to new manufacturing processes in the period from about 1760 to sometime between 1820 and 1840. This transition included going from hand production methods to machines, new chemical manufacturing and iron production processes, improved efficiency of water power, the increasing use of steam power and the development of machine tools. It also included the change from wood and other bio-fuels to coal. It began in Great Britain and within a few decades had spread to Western Europe and the United States. The Industrial Revolution marks a major turning point in history; almost every aspect of daily life was influenced in some way. In particular, average income and population began to exhibit unprecedented sustained growth.

**information economics** or the “economics of information” is a branch of microeconomic theory that studies how information and information systems affect an economy and economic decisions. Information has special characteristics. It is easy to create but hard to trust. It is easy to spread but hard to control. It influences many decisions. These special characteristics (as compared with other types of goods) complicate many standard economic theories. In recent decades, there have been influential advances in the study of information asymmetries and their implications for contract theory, including market failure as a possibility. Information economics is formally related to game theory as to different types of games that may apply, including games with perfect information, complete information, and incomplete information.

**indifference curve** In microeconomic theory, an indifference curve is a graph showing different bundles of goods between which a consumer is indifferent. That is, at each point on the curve, the consumer has no preference for one bundle over another. One can equivalently refer to each point on the indifference curve as rendering the same level of utility (satisfaction) for the consumer. In other words an indifference curve is the locus of various points showing different combinations of two goods providing equal utility to the consumer. Utility is then a device to represent preferences rather than something from which preferences come. The main use of indifference curves is in the representation of potentially observable demand patterns for individual consumers over commodity bundles.

**industrial organization economics** is a field that builds on the theory of the firm by examining the structure of (and, therefore, the boundaries between) firms and markets. Industrial organization adds real-world complications to the perfectly competitive model, complications such as transaction costs, limited information, and barriers to entry of new firms that may be associated with imperfect competition. It analyzes determinants of firm and market organization and behavior as between competition and monopoly, including government actions.

**input-output model** is a quantitative economic technique that represents the interdependencies between different branches of a national economy or different regional economies. Wassily Leontief (1905–1999) is credited with developing this type of analysis and took the Nobel Prize in Economics for his development of this model.The International Input-Output Association is dedicated to advancing knowledge in the field of input–output study, which includes "improvements in basic data, theoretical insights and modelling, and applications, both traditional and novel, of input-output techniques.

**institutional economics** focuses on understanding the role of the evolutionary process and the role of institutions in shaping economic behaviour. Institutional economics emphasizes a broader study of institutions and views markets as a result of the complex interaction of these various institutions (e.g. individuals, firms, states, social norms). The earlier tradition ontinues today as a leading heterodox approach to economics. A significant variant is the new institutional economics from the later 20th century, which integrates later developments of neoclassical economics into the analysis. Behavioral economics is another hallmark of institutional economics based on what is known about psychology and cognitive science, rather than simple assumptions of economic behavior.

**invisible hand** Adam Smith's term for the ability of the free market to allocate factors of production, goods and services to their most valuable use. If everybody acts from self-interest, spurred on by the profit motive, then the economy will work more efficiently, and more productively, than it would do were economic activity directed instead by some sort of central planner. Smith recognised that the invisible hand was not infallible, however, and that some governmentaction might be needed, such as to impose antitrust laws, enforce property rights, and to provide policing and national defence.

**just price** is a theory of ethics in economics that attempts to set standards of fairness in transactions. With intellectual roots in ancient Greek philosophy, it was advanced by Thomas Aquinas based on an argument against usury, which in his time referred to the making of any rate of interest on loans.

**labor theory of value** argue the value of a commodity is only related to the labor needed to produce or obtain that commodity and not to other factors of production (except as those elements can be regarded as embodied labour.) Presently the concept is most often associated with Marxian economics, although it appears as a foundation to earlier classical economic theorists such as Adam Smith and David Ricardo and later also in anarchist economics.

**limit theorem** is an economic theorem that examines a range of possible outcomes which may result from free market exchange or barter between groups of people. It shows that while the precise location of the final settlement (the ultimate division of goods) between the parties is indeterminate, there is a range of potential outcomes which shrinks as the number of traders increases.

**linear programming** is a method to achieve the best outcome (such as maximum profit or lowest cost) in a mathematical model whose requirements are represented by linear relationships. Linear programming is a special case of mathematical programming (mathematical optimization).

**liquidity preference** is the the proportion of their assets that firmsand individuals choose to hold in varying degrees of liquidity. The more cash they have, the greater is their desire for liquidity.

**marginal utility** of a good or service is the gain from an increase or loss from a decrease in the consumption of that good or service. Economists sometimes speak of a law of diminishing marginal utility, meaning that the first unit of consumption of a good or service yields more utility than the second and subsequent units, with a continuing reduction for greater amounts

**market socialism** is a type of economic system where the means of production are either publicly owned or socially owned as cooperatives and operated in a market economy. This differs from non-market socialism in that a market exists for allocating capital goods and the means of production. Market socialism has been used to refer to reformed economic systems in Marxist-Leninist states, most notably in reference to the contemporary economy of the People's Republic of China. In this system, a free price system is used for the allocation of capital goods within the state and private sectors, and the state utilizes indirect macroeconomic market mechanisms

**mathematical economics** is the application of mathematical methods to represent theories and analyze problems in economics. By convention, the applied methods refer to those beyond simple geometry, such as differential and integral calculus, difference and differential equations, matrix algebra, mathematical programming, and other computational methods

**mercantilism** is a national economic policy that says that a nation benefits by accumulating monetary reserves through a positive balance of trade, especially of finished goods. Mercantilism dominated Western European economic policy and discourse from the 16th to late-18th centuries Mercantilist policies have included: Building a network of overseas colonies;Forbidding colonies to trade with other nations; Banning the export of gold and silver, even for payments; Forbidding trade to be carried in foreign ships; Export subsidies; Promoting manufacturing with research or direct subsidies; Limiting wages; Maximizing the use of domestic resources; Restricting domestic consumption with non-tariff barriers to trade.

**Metallism** is the economic principle that money derives its value from the purchasing power of the commodity upon which it is based. The currency in a metallist monetary system may be made from the commodity itself (commodity money) .

**mutualism** a politically neutral movement that aims at creating and promoting mutual organizations, insurances, and other funds

**normative economics** as opposed to positive economics, is a part of economics that expresses value or normative judgments about economic fairness, or what the outcome of the economy or goals of public policy ought to be.

**opportunity cost** is the value of the best alternative forgone, in a situation in which a choice needs to be made between several mutually exclusive alternatives given limited resources. Assuming the best choice is made, it is the "cost" incurred by not enjoying the benefit that would be had by taking the second best choice available

**Pareto Efficiency** or Pareto optimality, is a state of allocation of resources in which it is impossible to make any one individual better off without making at least one individual worse off.

**positive economics** (as opposed to normative economics) is the branch of economics that concerns the description and explanation of economic phenomena.[1] It focuses on facts and cause-and-effect behavioral relationships and includes the development and testing of economics theories.

**propensity to consume** is an empirical metric that quantifies induced consumption, the concept that the increase in personal consumer spending (consumption) occurs with an increase in disposable income (income after taxes and transfers). The proportion of the disposable income which individuals desire to spend on consumption is known as propensity to consume.

**protectionism** is the economic policy of restraining trade between states through methods such as tariffs on imported goods, restrictive quotas, and a variety of other government regulations designed to allow (according to proponents) fair competition between imports and goods and service produced domestically.

**public choice theory** is the use of economic tools to deal with traditional problems of political science. Its content includes the study of political behavior. In political science, it is the subset of positive political theory that models voters, politicians, and bureaucrats as mainly self-interested. In particular, it studies such agents and their interactions in the social system either as such or under alternative constitutional rules.

**quantity theory of money** is the theory that money supply has a direct, proportional relationship with the price level. For example, if the currency in circulation increased, there would be a proportional increase in the price of goods

**rational expectations theory** is a hypothesis in economics which states that agents' predictions of the future value of economically relevant variables are not systematically wrong in that all errors are random.

**recession** is a business cycle contraction, It is a general slowdown in economic activity. Macroeconomic indicators such as GDP(Gross Domestic Product), employment, investment spending, capacity utilization, household income, business profits, and inflation fall, while bankruptcies and the unemployment rate rise.

**Say's Law** or the law of market, is an economic principle of classical economics named after the French businessman and economist Jean-Baptiste Say (1767–1832), who stated that "products are paid for with products"[1] and "a glut can take place only when there are too many means of production applied to one kind of product and not enough to another".

**social choice theory** or “social choice” is a theoretical framework for analysis of combining individual opinions, preferences, interests, or welfares to reach a collective decision or social welfare in some sense.

**Solow-Swan growth model** also known as exogenous growth model is a simple economic model of long-run economic growth set within the framework of neoclassical economics. It attempts to explain long-run economic growth by looking at productivity, capital accumulation, population growth, and technological progress.

**specialization** is in several ways 1. departmentalization, refers to the process of grouping activities into departments 2. Division of labour, the specialization of cooperative labour in specific, circumscribed tasks and roles 3. Flexible Specialization, the name given to the dominant system of economic production, consumption and associated socio-economic phenomena, in most industrialized countries since the late 20th century

4. Specialization (functional), the separation of tasks within a system

**surplus value** refers roughly to the new value created by workers that is in excess of their own labour-cost and which is therefore available to be appropriated by the capitalist, according to Marx; it allows then for profit and in so doing is the basis of capital accumulation.

**under-consumption theory** recessions and stagnation arise due to inadequate consumer demand relative to the amount produced. The theory formed the basis for the development of Keynesian economics and the theory of aggregate demand after the 1930s.

**use value** is the utility of consuming a good; the want-satisfying power of a good or service in classical political economy. In Marx's critique of political economy, any product has a labor-value and a use-value, and if it is traded as a commodity in markets, it additionally has an exchange value, most often expressed as a money-price.

**utilitarianism** is a theory in normative ethics holding that the proper course of action is the one that maximizes utility, usually defined as maximizing happiness and reducing suffering.

**wage fund** is an expression that comes from early economic theory that seeks to show that the amount of money a worker earns in wages, paid to them from a fixed amount of funds available to employers each year (capital), is determined by the relationship of wages and capital to any changes in population.