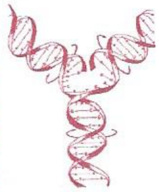
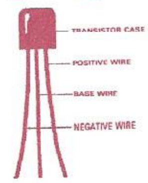
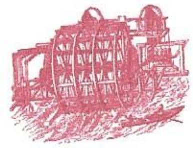




great economists and their times



1730

1990

iNtroductioN

The word "economics" is derived from oikonomikos, which means skilled in household management. Although the word is very old, the discipline of economics as we understand it today is a relatively recent development. Modern economic thought emerged in the 17th and 18th centuries as the western world began its transformation from an agrarian to an industrial society.

Despite the enormous differences between then and now, the economic problems with which society struggles remain the same:

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

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

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

Mercantilists

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

Physiocrats

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

Classical School

The Classical School of economic theory began with the publication in 1776 of Adam Smith's monumental work, The

"Wealth of Nations". The book identified land, labor, and capital as the three factors of production and the major contributors to a nation's wealth. In Smith's view, the ideal economy is a self-regulating market system that automatically satisfies the economic needs of the populace. He described the market mechanism as an "invisible hand" that leads all individuals, in pursuit of their own self-interests, to produce the greatest benefit for society as a whole. Smith incorporated some of the Physiocrats' ideas, including laissez-faire, into his own economic theories, but rejected the idea that only agriculture was productive.

While Adam Smith emphasized the production of income, David Ricardo focused on the distribution of income among landowners, workers, and capitalists. Ricardo saw a conflict between landowners on the one hand and labor and capital on the other. He posited that the growth of population and capital, pressing against a fixed supply of land, pushes up rents and holds down wages and profits.

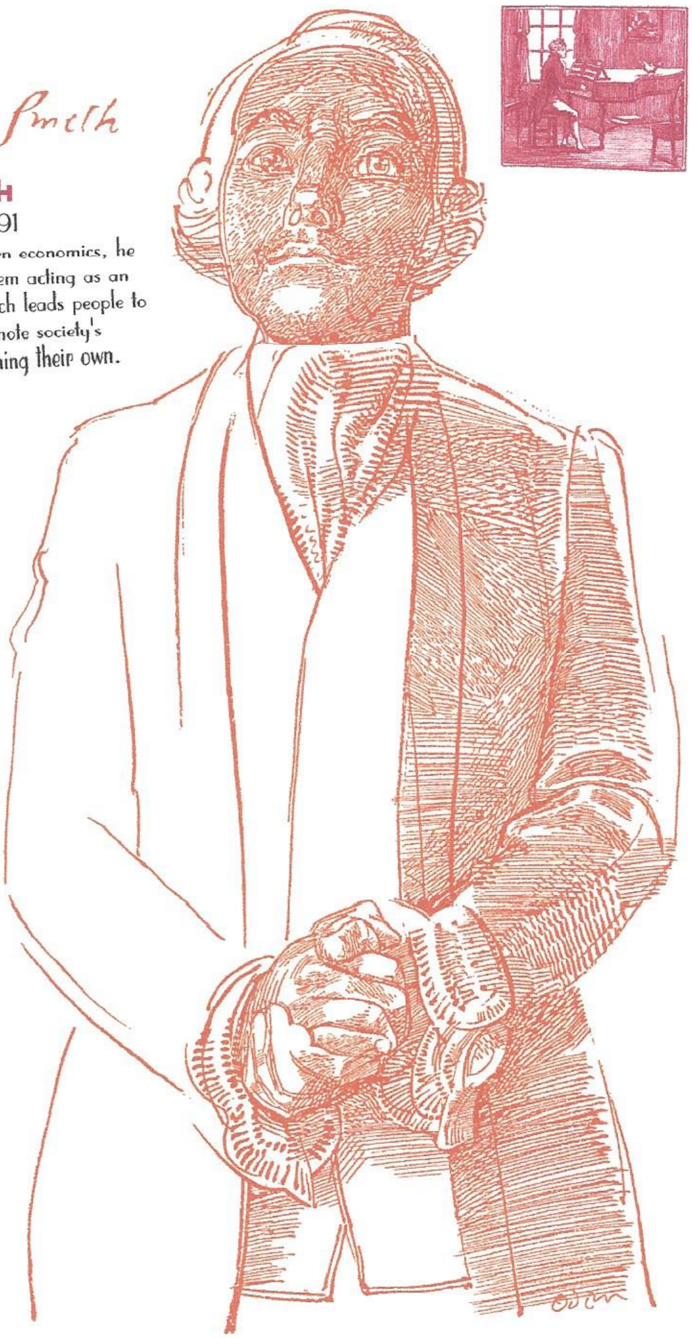
Thomas Robert Malthus used the idea of diminishing returns to explain low living standards. Population, he argued, tended to increase geometrically, outstripping the production of food, which increased arithmetically. The force of a rapidly growing population against a limited amount of land meant diminishing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

Adam Smith

ADAM SMITH

Scotland, 1723/1791

The father of modern economics, he saw the market system acting as an "invisible hand" which leads people to unintentionally promote society's interests while pursuing their own.



1730
Decade opens with Peace in Europe

Benjamin Franklin begins *Poor Richard's Almanack* in Philadelphia, Pennsylvania

John Kay patents flying shuttle, a major landmark in textile mass production, leading to textile mills in England

Voltaire writes *Lettres sur les Anglais* championing democratic government

David Hume creates empiricist philosophy in his *Treatise on Human Nature*

War of Jenkins' Ear begins when England declares war on Spain

1740
War of the Austrian Succession breaks out among major European powers

War of Jenkins' Ear spreads to Florida and Georgia

Johann Sebastian Bach issues second volume of The Well-Tempered Clavier

The Treaty of Aix-la-Chapelle ends War of the Austrian Succession. Major powers again at peace in Europe

David Hartley writes *Observations on Man*, arguing that one's moral sense is derived from an association of ideas

1750
Interest on Britain's national debt falls from 10% to 3%

Denis Diderot and Jean d'Alembert begin publishing *Encyclopedia*

Ben Franklin flies kite with key proving that lightning is like an electric spark

Samuel Johnson publishes *Dictionary of the English Language*.

Economist Francois Quesnay founds the Physiocrats, who advocate laissez-faire economic policies

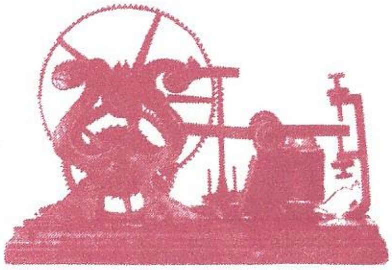
Claude-Adrien Helvetius publishes *De'l'esprit*, arguing that self-interest is the primary motive of human conduct

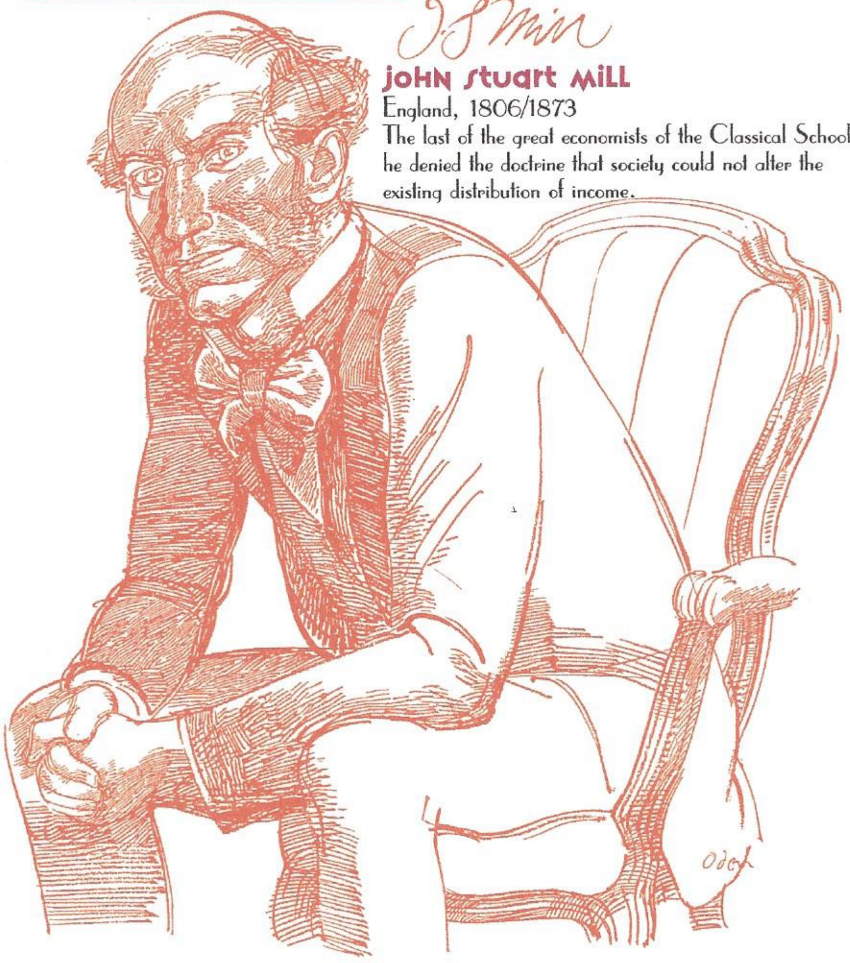
1760
Seven Years' War ends with the Treaty of Paris and the Treaty of Hubertusberg

J. J. Rousseau publishes *The Social Contract*, arguing that government must rest on the consent of the governed

Joseph Priestley issues an *Essay on First Principles of Government*, anticipating Jeremy Bentham's ideal of greatest happiness for the greatest number

Boycott of imports begins in Boston to oppose tax on lead, paint, paper and tea





JOHN STUART MILL
England, 1806/1873
The last of the great economists of the Classical School, he denied the doctrine that society could not alter the existing distribution of income.

1810 (continued)

British invade USA and burn Washington, DC, in War of 1812. Treaty of Ghent ends war

Wellington defeats Napoleon at Waterloo. Napoleonic Wars end with the Congress of Vienna deciding the future map of Europe

David Ricardo publishes *Principles of Political Economy and Taxation*

1820

Thomas Robert Malthus publishes *Principles of Political Economy*

Michael Faraday develops primitive electric motor

The Monroe Doctrine expresses USA's opposition to extension of European influence in the Western hemisphere

Erie Canal is opened for shipping

Webster publishes *American Dictionary of the English Language*

Western Australia colonized by British

The Workingman's Party formed in New York

1830

The Baltimore and Ohio becomes first railroad in USA

Louis Jacques Daguerre invents the first practical photographic process

Cyrus McCormick patents a mechanical reaper

Samuel Colt patents his revolver

Samuel Morse develops telegraph and Morse Code for sending and receiving messages

Isaac Pitman develops a system of shorthand writing

Victoria becomes Queen of England

1840

John Stuart Mill publishes *Principles of Political Economy*

Potato crop failure in Europe causes an estimated 2.5 million to starve

Gold is discovered in California

Factory Act in Britain limits the working day of women and children to 10 hours

Series of republican revolutions in Europe end in failure and repression

Karl Marx and Friedrich Engels publish *Communist Manifesto*

John Deere invents plow with a steel mold-board

Amelia Bloomer introduces trousers for women called Bloomers their contributions to production. This principle was sometimes used to justify the existing distribution of income: that people earned exactly what they or their property contributed to production.

Marxist School

The Marxist School challenged the foundations of Classical theory. Writing during the mid-19th century, Karl Marx saw capitalism as an evolutionary phase in economic development. He believed that capitalism would ultimately destroy itself and be succeeded by a world without private property.

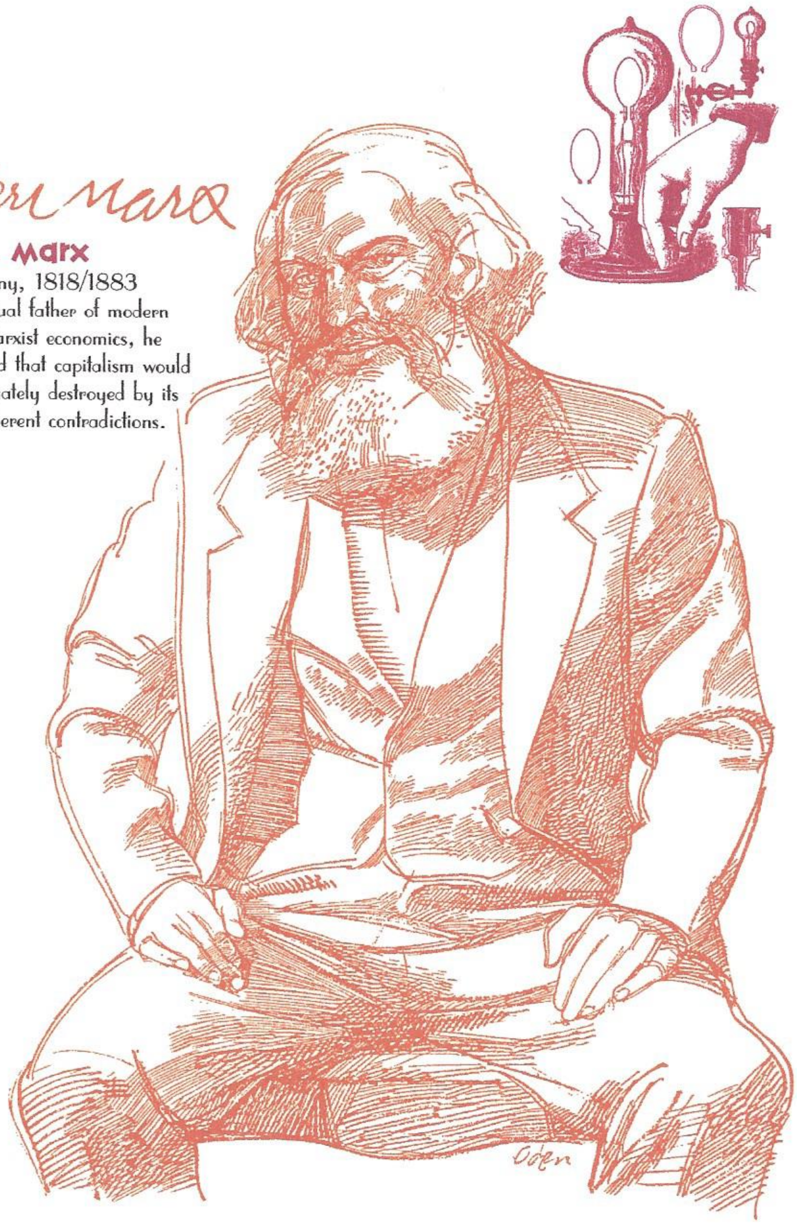
An advocate of a labor theory of value, Marx believed that all production belongs to labor because workers produce all value within society. He believed that the market system allows capitalists, the owners of machinery and factories, to exploit workers by denying them a fair share of what they produce. Marx predicted that capitalism would produce growing misery for workers as competition for profit led capitalists to adopt labor-saving machinery, creating a "reserve army of the unemployed" who would eventually rise up and seize the means of production.

Karl Marx

karl marx

Germany, 1818/1883

Intellectual father of modern day Marxist economics, he predicted that capitalism would be ultimately destroyed by its own inherent contradictions.



1850
Old-Age insurance introduced in France

Harriet Beecher Stowe publishes *Uncle Tom's Cabin*

Elisha Otis demonstrates safety elevator at New York Fair of 1854

Florence Nightingale pioneers modern nursing during the Crimean War

Henry Bessemer revolutionizes steel industry with new converter process

Charles Darwin publishes *On the Origin of the Species by means of Natural Selection*

First oil well in USA is drilled in Titusville, Pennsylvania

1860
Civil War begins at Fort Sumter, South Carolina

Issuance of Greenbacks to help finance the Civil War marks the beginning of modern currency in USA

Etienne Lenoir invents internal combustion engine in France

National Banking Act establishes a system of federally-chartered banks in the USA

Civil War ends when South surrenders at Appomattox Courthouse, Virginia

Karl Marx begins writing *Das Kapital*

Alfred Nobel invents dynamite

Union Pacific and Central Pacific railroads meet in Utah

1870
The Standard Oil Company is founded by John D. Rockefeller

City of Chicago destroyed by fire

Germany adopts the mark as its currency

Financial panic in Europe spreads to USA, causing withdrawal of foreign capital

Alexander Graham Bell invents telephone

Thomas Alva Edison invents the phonograph and electric light bulb

1880
American Federation of Trades and Labor is founded

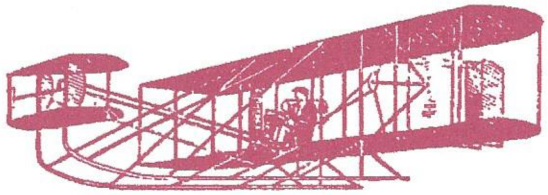
William LeBaron Jenney builds first skyscraper in Chicago, Illinois

France presents the Statue of Liberty to the USA

Louis Pasteur successfully uses vaccination against rabies

Institutionalist School

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



Alfred Marshall

ALFRED MARSHALL

England, 1842/1924

He demonstrated the tremendous theoretical power of demand and supply curves, and bequeathed to economics the critical distinction between the short run and the long run.

Leon Walras

LEON WALRAS

France, 1834/1910

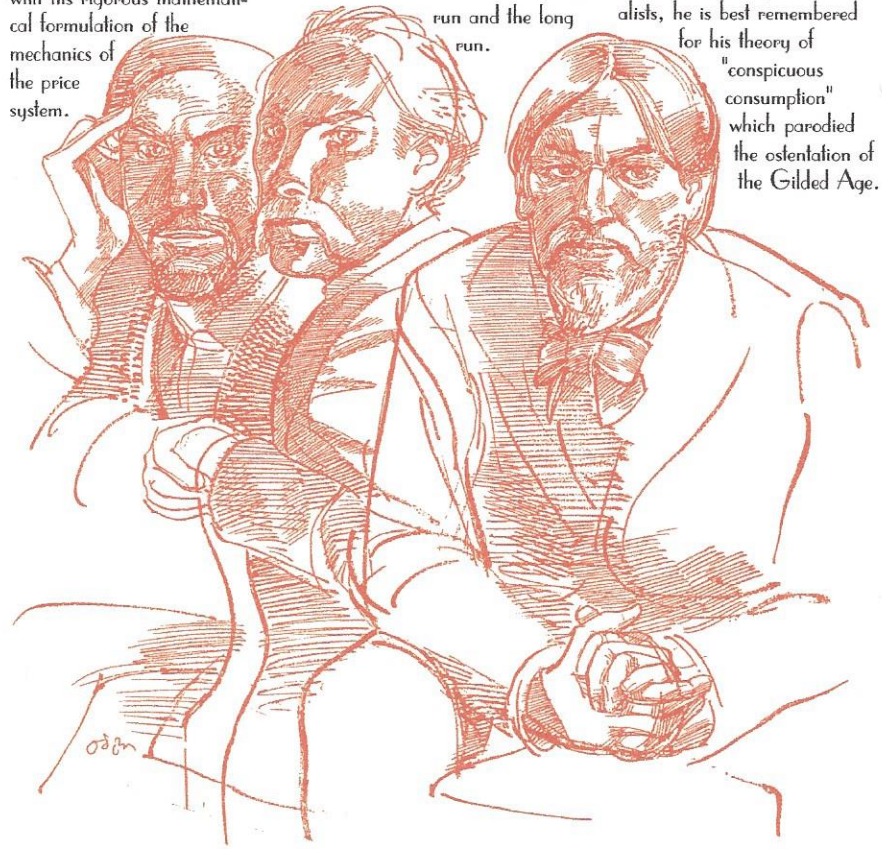
He revolutionized economics with his rigorous mathematical formulation of the mechanics of the price system.

Thorstein Veblen

THORSTEIN VEBLEN

United States, 1857/1929

One of the leading Institutionalists, he is best remembered for his theory of "conspicuous consumption" which parodied the ostentation of the Gilded Age.



1880 (continued)
Heinrich Hertz identifies radio waves

Gottlieb Daimler builds first automobile

Eiffel Tower is built in Paris for World Exposition of 1889

1890
Labor unrest erupts in USA when workers strike the Carnegie Steel Company

Alfred Marshall publishes *Principles of Economics*

The Sierra Club is founded by John Muir

Sigmund Freud establishes psychoanalysis with publishing of *Studien uber Hysterie*

Wilhelm Conrad Rontgen discovers X-rays

U.S. Congress enacts Income Tax Act, but Supreme Court declares it unconstitutional

Henry Ford produces his first automobile

1900
Guglielmo Marconi transmits messages across Atlantic with wireless telegraph

Orville and Wilbur Wright make first heavier-than-air machine flight

Albert Einstein publishes *Theory of Relativity*

Earthquake and fire destroy much of San Francisco

Financial panic in 1907 begins with the fall of the stock market and causes many banks to close

Gold Standard Act enacted in USA

Payne-Aldrich Tariff Act raises tariffs on imports into USA

1910
Marie Curie discovers radium

Federal Reserve Act creates central bank for the USA

Assassination of Austria's Archduke Francis Ferdinand brings about World War I

Gilbert Lewis develops electron theory of valency explaining structure of atoms

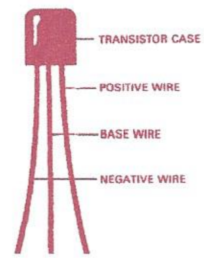
Revolution overthrows monarchy in Russia

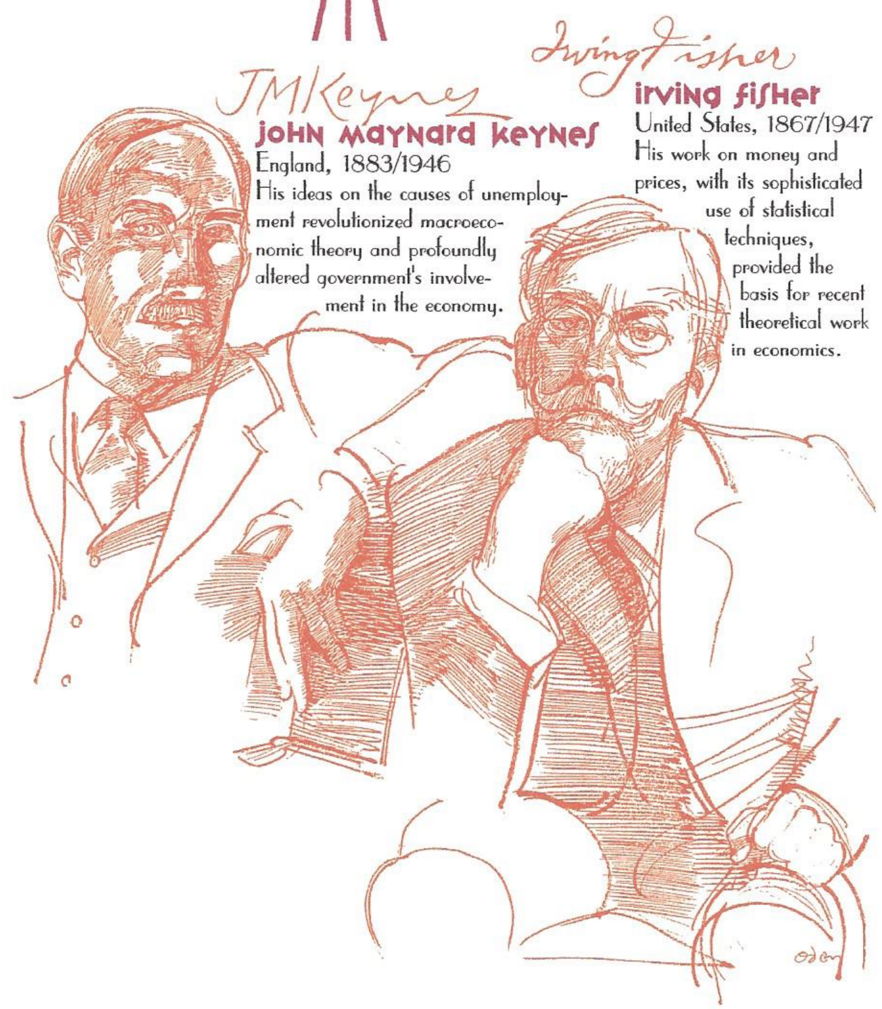
Paris Peace Conference redraws map of Europe after World War I and establishes the League of Nations

KEYNESIAN SCHOOL

Reacting to the severity of the worldwide depression, John Maynard Keynes in 1936 broke from the Classical tradition with the publication of the *"General Theory of Employment, Interest, and Money"*. The Classical view assumed that in a recession, wages and prices would decline to restore full employment. Keynes held that the opposite was true. Falling prices and wages, by depressing people's incomes, would prevent a revival of spending. He insisted that direct government intervention was necessary to increase total spending.

Keynes' arguments proved the modern rationale for the use of government spending and taxing to stabilize the economy. Government would spend and decrease taxes when private spending was insufficient and threatened a recession; it would reduce spending and increase taxes when private spending was too great and threatened inflation. His analytic framework, focusing on the factors that determine total spending, remains the core of modern macroeconomic analysis.





john maynard keynes
England, 1883/1946
His ideas on the causes of unemployment revolutionized macroeconomic theory and profoundly altered government's involvement in the economy.

irving fisher
United States, 1867/1947
His work on money and prices, with its sophisticated use of statistical techniques, provided the basis for recent theoretical work in economics.

1920

Women in USA receive the right to vote

Prohibition begins in the USA as sale of all alcoholic beverages becomes illegal

Germany suffers financial collapse as hyperinflation destroys value of mark

U.S. Steel Company abolishes twelve-hour work day and seven-day work week

Alexander Fleming discovers penicillin

Charles Lindbergh makes first solo airplane flight across the Atlantic

Collapse of stock market ushers in decade of economic hardship

1930

Worldwide Depression worsens, fostering the rise of political extremists

Hawley-Smoot Tariff Bill sets highest duties in US history, hurting world trade

James Chadwick discovers the neutron; Carl Anderson discovers the positron

U.S. repeals Prohibition

President Franklin Roosevelt begins New Deal government spending programs

Adolf Hitler becomes Chancellor of Germany

Wallace Carothers produces Polymer 66, or nylon

Germany invades Poland, starting World War II

1940

Japanese bomb Pearl Harbor and USA enters war against Japan, Germany and Italy

By 1944 war rages throughout the world

"D Day" offensive by USA, Britain and allies changes course of war in Europe

Germany surrenders in May 1945

USA drops atomic bombs on Hiroshima and Nagasaki; Japanese surrender

The United Nations is formed

John Bardeen, Walter Brattain, and William Shockley invent the transistor

Communists gain power in China

1950

Cold War between USA and Russia develops as Russia builds an atomic bomb

Korean War breaks out as North Korea invades south Korea, war ends in 1953

SUMMARY

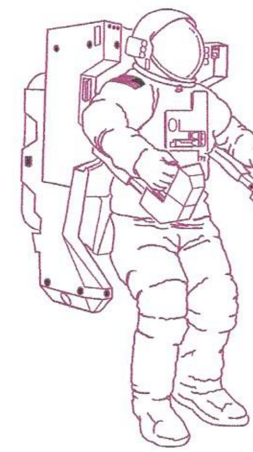
Economic theories are constantly changing. Keynesian theory, with its emphasis on activist government policies to promote high employment, dominated economic policymaking in the early post-war period. But, starting in the late 1960s, troubling inflation and lagging productivity prodded economists to look for new solutions. From this search, new theories emerged:

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

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

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

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




UNIVAC

1950 (continued)

Electricity produced by atomic power in USA

James Watson and Francis H. C. Crick describe the "double helix" structure of DNA

UNIVAC is first mass-produced computer

Jonas Salk develops anti-polio vaccine

Russia launches Sputnik l, the Earth's first spacecraft

U.S. Supreme Court orders desegregation of public schools

1960

Russia launches first man into space

President Kennedy establishes Peace Corps to assist underdeveloped countries

Rachel Carson writes *Silent Spring* marking concern with environmental pollution

Martin Luther King leads massive civil rights demonstration in Washington, D.C.

President Kennedy is assassinated in Dallas, Texas

Vietnam War intensifies as USA begins massive military buildup; anti-war movement begins on college campuses

Israel defeats Arab forces in Six-Day War

USA lands astronauts on the moon

1970

Equal Rights Amendment to US Constitution passes Congress but fails to be ratified by the necessary number of states

President Nixon resigns in the wake of the Watergate scandal

Following Israeli-Arab War in 1973, oil-producing countries double oil prices causing energy crisis and economic hardship

Vietnam War ends as South Vietnam surrenders and USA evacuates troops

Egypt and Israel sign historic peace accord

1980

Personal computers change the way businesses do business

Environmental issues become a major concern for most Americans

AIDS, a disease destroying the human immune system, becomes pandemic

U.S. sees rise of the largest federal budget deficit in history

Free market emphasized; deregulation of airlines and S&L's; stock market boom

The information in this publication was taken from **the world of economics**, a unique exhibition on economics and the U.S. economy located in the lobbies of the Federal Reserve Bank of San Francisco and its Los Angeles Branch.

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