by Ronald W. Kaiser

The Kondratieff Cycle:

Investment Strategy Tool or Fascinating Coincidence?

▶ In the 1920s the Russian economist Nicholas Kondratieff discovered a pattern of recurring 50-year megacycles in the economies of Germany, France, Great Britain, the United States and presocialist Russia. Each cycle is characterized by four distinct phases—(1) a growth period culminating in an inflationary peak, (2) a short-lived primary depression, (3) a plateau phase and (4) a long period of economic stagnation including a secondary depression.

The U.S. has experienced three complete Kondratieff cycles—from the 1780s to 1843, 1843 to 1896 and 1896 to 1940. The first phase of each cycle has lasted an average of 27 years, only to be followed by a one-year second phase—a primary depression. The third—plateau—phase, lasting four to eight years, has typically failed to regain the levels of growth that preceded the primary depression. The fourth phase—economic stagnation—has averaged 19 years and been characterized by at least one major secondary depression. On average, recessions during the stagnant phase have lasted a year longer than recessions during the growth phase.

M.I.T. professor Jay Forrester has concluded that the Kondratieff cycle can be explained by capital investment. During the growth phase, demand is imposed on the capital goods sector by both the consumer durables sector and the capital goods sector itself. At the peak, a labor shortage encourages capital intensive production, which puts even greater demands on the capital goods sector. The plateau phase fails to exploit the capacity created during the growth phase, while a relative reduction in labor costs, encouraging a shift back to greater use of labor, further diminishes the need for new capital goods. The stagnant phase is marked by a secondary depression and a rapid collapse of the capital goods sector. Accumulating physical depreciation then sets the stage for the next growth phase.

It appears that the U.S. is now in the midst of the third phase of a fourth cycle that began in 1940 and will possibly end sometime in the 1990s. Investors who consider only the economic experience of the post World War II era may find they have been reading a dangerously short history book. ▶

ECONOMISTS and money managers who consider only the experience of the post-World War II era may find they are reading a dangerously short history book. In the 1920s, Nicholas Kondratieff, a Russian economist, studied the history of wholesale prices in Western industrialized nations. He found that wholesale prices in Germany, France, Great Britain, the United States and presocialist Russia tended to peak at intervals of about 50 to 55 years.

Spurred by this finding, Kondratieff went on to discover a pattern of long-term economic cycles, called megacycles, which occurred nearly simultaneously in the five economies he studied. Each cycle is characterized by four distinct phases: (1) a long period of growth culminating in an inflationary peak, (2) a short-lived primary depression, (3) a plateau period and (4) a secondary depression (a long period of economic stagnation). These are illustrated in Figure A.

Because no one could at that time offer a sound theoretical explanation for these cycles, Kondratieff was largely ignored. We, too, were at first skeptical about the existence and influence of Kondratieff's cycles, especially in the context of contemporary economies. Economic conditions today are very different from what they were before the 1920s, one major difference being the influence of government on the economy. However, as we studied the available literature on megacycles, we became more and more

Ronald Kaiser is a founder and Executive Vice President of Bailard, Biehl & Kaiser, Inc., financial advisors, Menlo Park, California. He is co-author of Personal Money Management (Science Research Associates, 1973 and 1977).

Figure A
The Four Phases in an Idealized Kondratieff Cycle

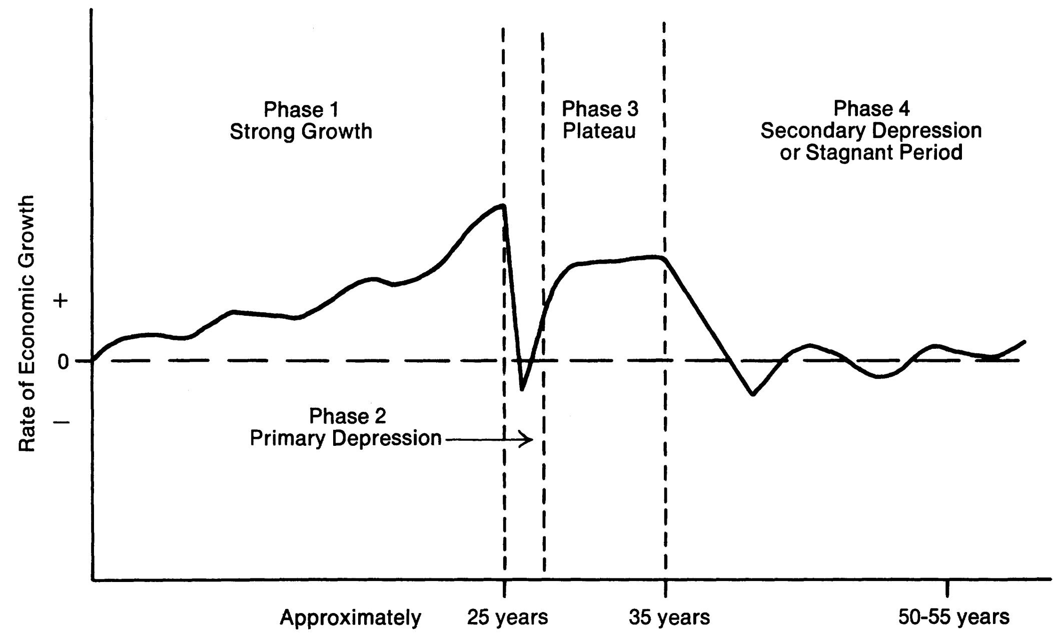
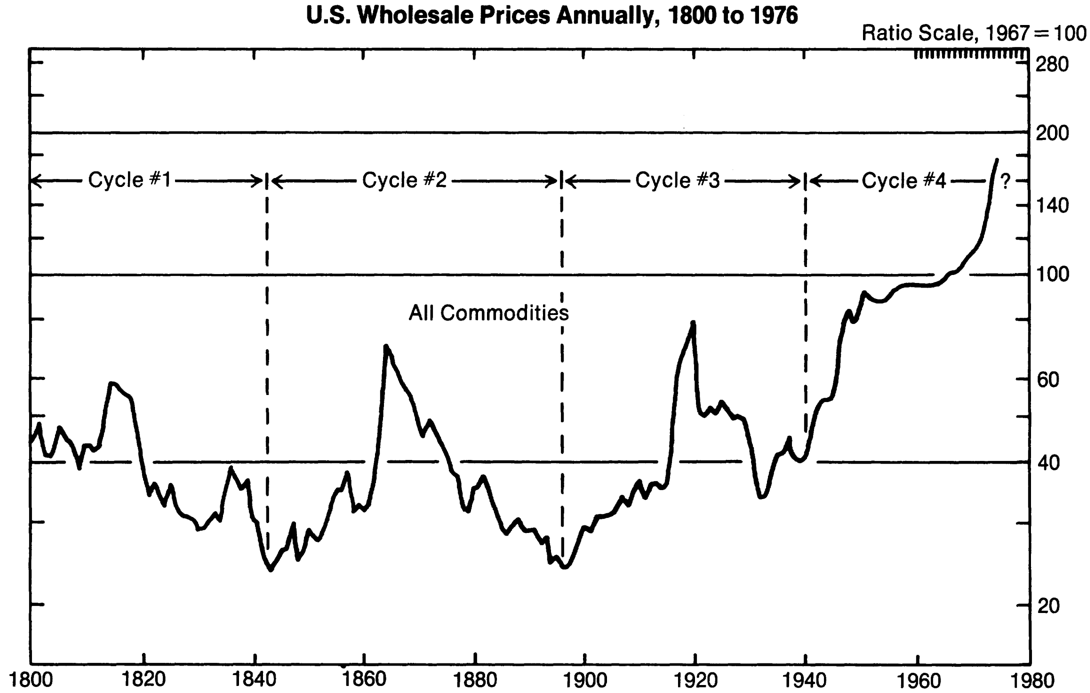


Figure B
U.S. Wholesale Prices Annually, 1800 to 1976



convinced that knowledge of these cycles can be an important aid in designing portfolio management strategies.

Four Kondratieff Cycles in the United States[1]

Figure B graphs the level of wholesale prices in the United States since 1800. In typical Kondratieff fashion, these prices have peaked every 50 to 55 years; the current peak is much higher than former ones and shows few signs of topping out. On the basis of this pattern, it appears that the U.S. has experienced three complete Kondratieff cycles—dating from the late 1780s to 1843, from 1843 to 1896 and from 1896 to 1940—and is now in the midst of the third phase of a fourth cycle spanning 1940 to 1990-95. (Because the wholesale price picture does not coincide exactly with the turning points in general economic activity, there is some dispute over the precise dates of each cycle; these discrepancies do not affect our analysis.)

Exhibit I breaks down each cycle into Kondratieff's four phases of economic activity. In the U.S., the first phase—strong economic growth—has lasted an average of 27 years and been followed by a one-year primary depression (or "deep recession," as the 1974-75 experience was euphemistically labeled, there being only nine per cent unemployment). The third—plateau—phase, lasting four to eight years, has been characterized by apparent prosperity that failed, however, to achieve the levels of growth that preceded the primary depression. The fourth phase—economic stagnation—has averaged 19 years and been characterized by at least one major secondary depression, the Great Depression of 1930 being by far the worst, with over 20 per cent unemployment for one four-year period.

1. Footnotes appear at end of article.

Exhibit II gives some relevant economic statistics for the peak and trough of each completed megacycle and for the apparent peak of the current cycle. Wholesale prices, as Figure B illustrated, closely coincide with Kondratieff cycle phases. Consumer prices and high-grade bond yields also tend to follow the phases of each megacycle; both went into a prolonged deflationary period following the peak of each of the first three megacycles. Thus far in the current cycle—if we define the inflationary peak as 1973—only long-term interest rates (Moody's AAA Corporate) have begun the characteristic decline, falling from a peak of 9.1 per cent to 7.9 per cent in 1977. However, their current rebound to near nine per cent is stronger than the similar interim recoveries in 1923 and 1929. And deflation of consumer prices has not yet occurred, although the *rate* of inflation may be declining gradually.

Common stock prices typically exhibit one major crash per megacycle. Their behavior during the third megacycle was particularly classic, in terms of megacycle phases:

Cycle Phase	*Stock Cycle*	*Dow Jones Change*
Growth Period	1896-1920	+313% (with five shorter cycles)
Primary Depression	1921-1922	− 46%
Plateau Period	1922-1929	+500% (with a 15% decline in 1923)
Secondary Depression	1929-1932	− 89%

EXHIBIT I: The Four Kondratieff Cycles in U.S. Economic History

Kondratieff Cycle Trough to Trough	Key Points in Economic Cycle: Strong Growth	Primary Depression	Plateau	Secondary Depression (Stagnant Phase)
#1 Late 1780s to 1843	Late 1780s to 1814	1815	1816-19 Era of Good Feeling	1819-43 Financial Panic of 1819 Panic of 1837
#2 1843 to 1896	1843-64	1866	1867-73 Reconstruction	1873-96 Panic of 1873-79 Railroad Prosperity of 1885-93 Depression of 1893-96
#3 1896 to 1940	1896-1920	1921	1922-29 The Roaring Twenties	1929-49 Crash of 1929 The Great Depression
#4 1940 to 1990 (?)	1940-73	1974-75	1975-? Stable Seventies?	?

The behavior of common stock prices during the first and second megacycles was less regular: The market crash in the first megacycle began 16 years (1835) after the start of the secondary depression (1819), while the crash in the second megacycle occurred 20 years early! However, in all three completed megacycles, the plateau phase has been characterized by rising stock prices.[2]

Megacycle phases have also tended to experience different levels of economic vigor. Recessions during stagnant phases typically last about a year longer than recessions during growth phases.

EXHIBIT II: U.S. Economic Statistics Marking the Peak and Subsequent Trough of Each Cycle

Kondratieff Cycle: Trough > Peak > Trough	Wholesale Prices (1967 = 100)		Consumer Prices (1967 = 100)		High-Grade Bond Yields		Common Stock Prices*
#1 1780s 1814 1843	59 (1814) 24 (1843)		38 (1814) 18 (1843)		7.7% (1816) 4.3% (1821) 4.0% (1852)	Double Trough	25 (1835) 6 (1842) Decline = 76%
#2 1843 1864 1896	67 (1864) 25 (1897)		47 (1865) 26 (1895)		6.7% (1861) 3.2% (1899)		22 (1853) 8 (1856) Decline = 64%
#3 1896 1920 1940	76 (1920) 34 (1933)		59 (1920) 39 (1933)		5.2% (1920) 2.5% (1945)		390 (1929) 41 (1932) Decline = 89%
	Index	**% Change**	**Index**	**% Change**			
#4 1940 1973 1990s (?)	1973=134.7 1974=160.1 1975=174.9 1976=183.0 1977=194.2	+15.4% +20.9% +4.2% +4.6% +6.1%	1973=133.1 1974=147.7 1975=161.2 1976=170.5 1977=181.5	+8.8% +12.2% +7.0% +4.8% +6.4%	9.1% (1974) Trough = ?		? (Was it 1973-74, or is it yet to come?)

*Obtained by splicing several indexes together, with all related to Dow Jones Industrials for index uniformity. SRC Bicentennial Chart of Investment and Economic History; Securities Research Co., Boston, Massachusetts, 1976.

EXHIBIT III: Sociopolital Events

Cycle	WARS OF EACH CYCLE: Previous Trough War	WARS OF EACH CYCLE: Peak War	OTHER PARALLELS
#1 1780s to 1843	War of Independence 1775-81	War of 1812 1812-15	1. Federalist Party accused of treason for protesting War of 1812; dies in election of 1816. U.S. has only one party for next term. 2. Westward expansion (1791-1819) culminating in overspeculation in Western land. 3. First secondary schools for women (1820s).
#2 1843 to 1896	Mexican War 1846-48	Civil War 1861-65	1. Johnson impeachment attempt (1868); no scandals. 2. Railroad overexpansion (1865-75). 3. Women's suffrage in Wyoming (1869).
#3 1896 to 1940	Spanish-American War 1898 (Phillipine Intervention, 1899-1902)	World War I 1914-18 (Mexican Intervention, 1914-17)	1. Teapot Dome scandal (1921-1923); Harding died in office before prosecution. 2. Real estate construction boom (1920s) & Florida land boom (1925). 3. National Women's Suffrage (1920).
#4 1940 to 1990 (?)	World War II 1939-45 (Korean War 1951-53)	Vietnam War 1964-72	1. Watergate scandal; Nixon forced out of office (1974). 2. Real estate boom (1970s). 3.. Equal Rights Amendment passed by Senate and sent out for ratification (1972).

The Sociopolitical Record

Exhibit III presents a brief review of U.S. history viewed in terms of Kondratieff cycles. It is startling to see how often the national mood paralleled the nation's position in the cycle. For one thing, all U.S. wars (except the Korean War, 1951-53) have coincided with either a peak or a trough. Peaks have also been characterized by political scandals, real estate booms and renewed interest in women's rights.

Two of the most furious political scandals of our nation's history—Watergate and Teapot Dome—coincided with the peaks of the third and fourth megacycles. The peak of the second cycle saw Congress' attempt to impeach President Andrew Johnson. During the peak of 1812, the Federalist Party was accused of treason for preferring to make war on France, rather than Britain, and failed to survive the next election.

Real estate booms are apparently initiated by the inflationary experience of peak years, but carry on into the plateau phase, with rental rates and real estate prices continuing to rise during the early years of otherwise deflationary price experience. We are in the midst of a real estate boom right now. The previous one, which included the Florida land boom of 1925, peaked in 1926 and climaxed with the building of the Empire State Building, a multi-year construction project completed in 1931. Prior to that era, we had the railroad overexpansion of 1865-75, which culminated in the depression of 1873-79—the worst on record to that point. The first recorded real estate boom came with the expansion westward over the Appalachians. As one eminent historian writes, "Many factors contributed to the catastrophe of 1819, but looming large among them was overspeculation in Western lands."[3]

The current feminist movement has great strength, marked especially by the much debated Equal Rights Amendment, first approved by the U.S. Senate in 1972. The adoption of the constitutional amendment providing for women's suffrage, in 1920, coincided with the third cycle's peak. The peak of the second Kondratieff cycle was marked by Susan B. Anthony's suffragette movement and Wyoming's passage of a women's suffrage bill in 1869. That same era saw the establishment of women's colleges and women's admission to formerly all-male schools—an outgrowth of Emma Willard's pioneering endeavors in the establishment of women's secondary schools, which began during the peak of the first Kondratieff cycle. One period of the women's movement did not coincide with a megacycle peak. This period was marked by the National Women's Rights Convention held in Seneca Falls, New York, in 1848, which declared that men and women were equals—an unprecedented position.

Exhibit IV presents more evidence of the correlation between sociopolitical events and megacycles: Both the amount and type of political activity (including legislation) vary with the phases of the megacycle. One might speculate that the growth phase of each megacycle is politically quiet because the country is enjoying new-found prosperity after having lived through previous trough and war. For example, as much as Harry Truman (in the growth period of the current megacycle) tried to continue with the New Deal in the form of the Fair Deal, the country would have none of it. His advocacy of national health plans, new TVA's, federal housing and the like largely failed to win Congressional acceptance.

The last decade of the growth phase, including the inflationary peak, has experienced the greatest sociopolitical activity. Perhaps this is because the long period of preceding growth results in a feeling that the country can afford to attack the perceived inequities of society. The most recent inflationary peak coincided with President Johnson's War on Poverty. Federal income taxation began during the third cycle's peak era (uniformly called the Progressive Era by historians). And the peak era of the 1860s saw such reforms as the emancipation of slaves and the establishment of tuition-free colleges.

The following plateau phase has generally been a politically quiet time, perhaps because of frustration and disillusionment with the prior decade's attempts at reform. Most political activity during the plateau phase represents labor and business attempts to deal with a less vigorous economy. Labor made itself felt in the post-Civil War plateau by forming the first national labor union, the Knights of Labor. In 1921 and 1924—the next plateau—labor acted to stem the tide of cheap foreign workers by greatly restricting immigration. Business (and labor) have also typically resorted to protective tariffs during plateau phases. The first U.S. protective tariff was passed during the initial plateau of 1816-19, and there was a substantial tariff increase in 1922. Today, we have quotas and "orderly marketing agreements."

Stagnant phases typically see the passage of measures designed (1) to salvage the dashed fortunes of the "little man"—e.g., the Land Act of 1820, Jacksonian democracy, the first Civil Service Law, the formation of the AFL and the enactment of Social Security, minimum wage laws and public housing measures; (2) to stimulate the economy—the Silver Purchase Act, the CCC and WPA and the formation of the TVA; or (3) to punish the "bad guys" popularly thought to have created the economic situation—the Sherman Anti-Trust Act, the National Labor Relations Act and the formation of the Securities and Exchange Commission.

Although there is certainly a strong correlation between U.S. sociopolitical events and the phases of U.S. Kondratieff cycles, it is difficult to say which is cause and which effect, if indeed such a relation exists at all. Nevertheless, we can summarize several hypotheses:

1. Growth phases are politically quiet because, after the difficult times of the previous trough and war, the country is preoccupied with creating wealth and is pleased with the results.

2. The peak years of cycles are typically active because not everyone benefits equally from the growing national prosperity; the have-nots make their plight known, and the haves go along with various reforms out of feelings of sympathy and guilt.

3. Plateau phases are politically quiet because people have become frustrated and disillusioned with the preceding 10 years of reform and return to looking out for

EXHIBIT IV: Major Sociopolitical Changes in the Phases of Each Cycle

Cycle	Growth Phase Excluding Last Decade	Last Decade of Growth Phase & Primary Depression	Plateau Phase	Stagnant Phase
#1 1780s to 1843	1788-1804 -Bill of Rights (1791) -Alien & Sedition acts (1798)	1805-15 -Banned importation of slaves (1807)	1816-19 -First protective tariffs (1816)	1819-43 -Land Act of 1820 -Jacksonian Democracy (1828-42) (equal suffrage for males) -Tariff of Abominations (1824) (increase) -Anti-Slavery issues (1820) -Modern Democratic Party formed (1825)
#2 1843 to 1896	1843-55 -Free vs. slave states issues -Modern Republican Party formed (1854) -Tariff reduction of 1846	1856-65 -Homestead Act (1862) -College Land Act (1862) -National Banking System (1863) -Emancipation Proclamation (1863) -Tariff of 1857 (reduced) -Tariff of 1861 (increased)	1867-73 -Knights of Labor formed (1869) -Voting rights to blacks (1870) -Women's suffrage in Wyoming (1869)	1873-96 -Silver Purchase Act (1878) -Civil Rights Act (blacks) (1875) -Interstate Commerce Act (1887) -Sherman Anti-Trust Act (1890) -First Civil Service Law (1883) -McKinley Tariff Act (1890) -Silver Purchase Act (1890) -AFL formed (1881) -Wilson Tariff Act (1894) (reduced) -Immigration restricted (1882 & 85)
#3 1896 to 1940	1896-1910 -Dingley Tariff Act (1897) (increased) -Payne-Aldrich Tariff (1909) (reduced) -Currency Act (Free Silver) (1900) -Federal Railroad Regulation (1903) -FDA created (1906) -Dept. of Commerce & Labor created (1903)	1911-21 -Workmen's Compensation Act (1916) -Break up of Standard Oil (1911) -Federal Reserve Act (1913) -Income Tax enacted (1913) -Prohibition enacted (1919) -Women's Suffrage (1920) -Immigration limited (1921) -Clayton Anti-Trust Act (1914) -FTC created (1914) -Federal Farm Loan Act (1916) -Child Labor Law (1916) -Major tariff reduction & reform (1913)	1922-29 -Immigration limited (1924) -Fortney-McCumber Tariffs (1922) (big increase)	1929-40 -CCC (1933) - WPA (1935) -Prohibition repealed (1933) -Smoot-Hawley Tariff (1930) (big increase) -FDIC created (1933) -TVA created (1934) -Nat'l Industrial Recovery Act (1933) -Social Security enacted (1935) -Nat'l Labor Relations Act (1935) -Fair Labor Standards Act (1938) -Public Housing Act (1938) -SEC formed (1934) -FHA formed (1934) -Reconstruction Finance Corp. (1932) -Norris-LaGuardia Pro-Union Act (1932)
#4 1940 to ?	1940-63 -Full Employment Act (1946) -Taft-Hartley Act (1947) (restricted unions) -Civil Rights sit-ins begin (1960) -Trade Expansion Act (1962) (to reduce tariffs) -Dept. of HEW created (1953)	1964-75 -Federal Aid to Education (1965) -Medicare enacted (1965) -Voting Rights Act (1965) -Civil Rights Act (1964) -Voting Rights to 18-year-olds (1971) -Major race riots (1965 & 67) -Equal Rights Amendment passed by Senate (1972) -Pension Reform Act (ERISA) (1974) -Dept. of HUD created (1965) -Environmental Protection Agency formed (1970) -Occupational Safety & Health Act (1972) -Nat'l Rail Passenger System (1971)	1976-? -Dept. of Energy created (1977)	
TOTAL ITEMS IN COLUMN	16	32	7	30
ITEMS PER YEAR	0.23	0.71	0.35	0.49

Note: Names of acts were revised as needed to be more descriptive. Foreign policy issues are not included.

themselves. The actions typically taken by labor and business to protect themselves during these times result from the primary depression and presage the impending stagnant period.
4. Stagnant phases are politically active because their characteristically low profitability and high unemployment put pressure on the government to do something. The "something" involves wars and legislation.
5. Various types of aggression (wars and political scandals) and expansion (women's rights) occur at the peaks of megacycles because of the frustrations generated by the high level of economic activity.
6. The final "blow offs" of inflationary peaks result in real estate booms.

What Explains These Cycles?

Because the Kondratieff cycle is regarded skeptically, few economists have made any serious attempt to build a theoretical basis for its existence. However, recent work by Jay W. Forrester, an M.I.T. professor, concludes that the capital investment cycle can explain the Kondratieff wave.[4]

Forrester's hypothesis is based on an examination of the interrelationship between the capital equipment sector of the economy (spending for new public and private plant and equipment) and the consumer durables sector (spending for automobiles, refrigerators, etc.). Thus consumers order durable goods → durable goods manufacturers order new capacity → capital equipment makers build new capacity → capital equipment makers order new capital equipment to expand their own capacity → economic growth results in more consumer orders for durable goods, and further growth ensues as the cycle repeats.

By simulating these economic relationships in a computer model, Forrester found that a 50-year fluctuation is the natural result of (1) the lag time in orders, production rates and the movement of people and capital between sectors and (2) the need to develop excess capacity in order to catch up on deferred demand. Deferred demand results from the physical deterioration of capital stock occurring during the stagnant period. Deferred demand "catch up," plus the psychological and speculative forces arising from it, produce the peak in the waves. It then takes the country from 10 to 25 years (the stagnant phase) to use up and wear out the excess capital stock and begin the cycle over again.

According to Forrester, the growth phase of the Kondratieff cycle is the result of demand imposed on the capital goods sector by both the consumer durables sector and the capital goods sector itself. The peak phase is marked by an increase in wage rates and the development of a labor shortage that encourages capital intensive production, which puts even greater demand on the capital goods sector. This sector eventually expands to a capacity greater than that needed for normal replacement and growth. Failure to exploit this capacity brings about the plateau phase of the cycle. Unemployment in the capital goods sector during this phase leads to falling wage rates, which encourage a shift back to greater use of labor, further diminishing the need for new capital goods. The stagnant phase sees a rapid collapse of the capital sector as the secondary depression begins. As demand falls, the excess capital stock slowly declines through physical depreciation, creating the conditions for the next cycle's growth phase.

Figures from our current megacycle indicate that Forrester's theory may have merit. Although post-World War II growth in the real capital stock has averaged 3.5 per cent per year, it accelerated to the four to five per cent range in the late 1960s. Since 1970, the growth rate has fallen back to two to three per cent.

Forrester also believes that government has much less ability to fine-tune the economy than it would like to believe. Although the government has been given credit for moderating business cycles since 1945, Forrester's computer model indicates that we should expect such cycles on the up-leg of the Kondratieff wave, while we should have weak expansions and protracted recessions on the down-leg, which is exactly what the experience has been.

Furthermore, the seriousness of the 1974-75 recession (primary depression) demonstrates the ineffectiveness of government and the power of the Kondratieff cycle. Forrester writes: "To the extent that monetary policy has any influence on the long wave, the principal effect may be to encourage upward overshoot at peaks with a corresponding steeper decline, as a consequence of expansionary monetary policy during the late stages of the long-wave economic boom."

As Exhibit V shows, each business cycle expansion of the recent growth phase has required proportionately greater increases in bank credit. As debt burdens increase, the Federal Reserve must increase the rate of growth in the money supply, both to service the prior debt and to provide for more growth. What this implies is that actual growth on the up-leg outruns long-term sustainable growth rates, thereby hastening the inevitable day when the level of economic activity will be insufficient to service the debt. This will trigger the bankruptcy of the most heavily levered corporations and individuals and bring about the secondary depression, or stagnant phase.

Our Hypothesis

We believe that human psychology and demographic trends, if they do not actually cause the megacycle, at least greatly reinforce the economic—especially monetary—mechanisms that move it. In particular, we suspect that each individual is deeply affected by the state of the economy during his adoles-

EXHIBIT V: New Credit Required For Each Expansion of the Recent Growth Period*

Month/Year Periods	Changes in Real GNP (Billions of 1958 Dollars)	Change in Real Bank Credit** (Billions of 1958 Dollars)	Bank Credit GNP
6/49 - 6/53	+93.9	+26.4	0.28
6/54 - 6/57	+51.1	+18.6	0.36
3/58 - 3/60	+52.7	+18.3	0.35
12/60 - 12/65	+150.7	+96.5	0.64
12/66 - 12/68	+56.4	+64.2	1.14
6/70 - 12/73	+119.2	+153.9	1.29

*Modified from data in *Bank Credit Analyst,* June 1974, p. 26.
**All commercial banks — loans plus investments.

cent and early working or business years. Thus a person's influence on the economy, whether as a businessman, laborer, consumer, banker, voter or elected representative, is a lifelong reflection of his early experience.

People who entered the labor force during the Great Depression remained very conservative, preferring to pay off home mortgages early and buying everything with cash, not credit. This made for slow but steady economic growth during the 1940s and 1950s. But these people are now, by and large, retired or in the waning years of their influence on the national economic mood. Those who have had the greatest part in creating the current economic condition are their children, who grew up in the prosperous forties and fifties.

These people became the aggressive bankers who never made a bad loan, or the people who felt the government could outspend every problem, or the businessmen who felt that the company could grow faster simply by borrowing more money, or the union member who looked upon big business as an endless source of raises, or the consumer who embraced the plastic credit card, or the home buyer who didn't mind reaching for the third mortgage because "house prices always go up." As a result of this new mentality, we find ourselves the most heavily levered Americans ever. The ratio of bank loans to deposits hit a peak in 1973 of $290 of loans for each $100 of demand (checking) deposits—up from a 1944 low of $30 per $100. At the previous megacycle peak, in 1920, the ratio was $140 per $100, which, following the modest correction of the 1921 primary depression, went on to a $150 per $100 high in 1929. There is no doubt that our confidence in the government's ability to control the economy, founded on the Keynesian ideas of the 1930s, has made us far more vulnerable to economic shock than ever before.

Demographic trends appear to reinforce the impact of generational attitudes. Although historical census data are lacking, it is commonly believed that depressions (or stagnant phases) result in deferred marriages and reduced numbers of births, whereas peak eras result in baby booms because of the economic prosperity. Thus the number and corresponding influence of individuals who have grown up during a depression are relatively less than the number and influence of individuals whose formative years have corresponded to the up-leg of the growth phase. Population remains weighted in favor of economic expansion and overexpansion of the type shown in Exhibit V until hard reality catches up.

Of course, a person's fundamental economic philosophy, formed early in life, can be modified by more recent traumatic experience. Current behavior reflects a new caution or conservatism arising out of the recent inflation and deep recession. On the other hand, older persons, with a better recollection of the 1930s, appear to be the most deeply affected; younger people are still more inclined to see the recession as incidental to ongoing prosperity and inflation.

In summary, while we cannot state definitely whether demographic and attitudinal trends cause the megacycle or merely reflect it, it seems possible that the cycle's 50 to 55-year periodicity corresponds to a two-generation cycle in which each generation, in reacting to the economic conditions created by its fathers, repeats the mistakes of its grandfathers.

Our Current Situation

The Kondratieff cycle explains some seemingly unusual events of recent years, including the worldwide inflationary peak of 1973-74, the unprecedented (post-war) severity of the 1975 recession, the buildup of liquidity and decline in long-term interest rates from 1974 to 1977 (and the likely resumption of that decline during the next recession in 1979 or 1980) and the continued failure to get back on the fast growth track of the 1960s and early 1970s. If we are indeed riding the Kondratieff wave, what are the signs that would indicate that we are now in the plateau phase, and how do these compare with our experience in the 1920s?

For one thing, there are signs that the inflationary peak may be subsiding. The 1920s saw an actual deflation. Thus far, we have seen declines generally only in farm prices and industrial raw materials (e.g., copper at $0.68, versus its $1.20 high in 1973). Long-term interest rates also appear to be declining, as one would expect from historical experience (see Exhibit II). This decline would be even greater except for one unusual source of demand for borrowed money: The federal government is borrowing enormous sums to finance its record budget deficits. Typically, plateau phases have federal budget surpluses.

Protectionism is rearing its ugly head again. Although government tries to avoid the term, we already have target prices for steel and orderly marketing agreements in color TV sets, shoes and sugar, as these

EXHIBIT VI: Farm Land Price Trends*

Year	Farm Land Price Index	Prices Received By Farmers Index	Change	Prices Paid By Farmers Index	Change
1912	22	99	+108%	101	+71%
1918	30	206		173	
1920	40	211		214	
1929	27	148	−67%	160	−49%
1933	16	70		109	
1967	100	250	+95%	341	+93%
1976	244	488	−8%	657	+5%
1977	250	451		692	

*Source: Commerce Department, *Handbook of Basic Economic Statistics,* November 1977.

excess capacity industries seek protection from foreign competition. Recent years have also seen numerous devaluations in an attempt to bolster exports (the United States, Great Britain, Mexico and Australia, for example). A *Wall Street Journal* headline of August 11, 1977, announced: "Global Commerce Spreads More Slowly As Barriers To It Spread." How different is this from the immigration quotas of 1921 and 1924, or the big tariff increase of 1922?

The economy has little need of new capital stock, whether in the private sector (as shown by the capacity index) or in the public sector. There probably isn't a medium-sized town in the country that doesn't sport a new city hall, park, police station, library or hospital. Menlo Park, a suburb of San Francisco, was so hard-pressed to find a place to spend federal job-creating funds that in 1977 it tore up perfectly good downtown sidewalks and replaced them with equally good sidewalks, modified with enough brickwork and planters so that the change could be labeled an "improvement." How can we keep up the capital spending pace of the 1960s? Yet anything less means a slower economy.

That old reliable indicator, the real estate boom, appears to be right on schedule. This boom has always been the last gasp of the inflationary peak, running its course in the plateau phase. Have you ever noticed how most of the grand old downtown hotels were built prior to 1929? Today, the Hyatt Regencies in several cities and the Bonaventure in Los Angeles are becoming the downtown architectural monuments of our cycle. Similarly, most of the big old movie theaters were built in the twenties. The entertainment monument of our era may prove to be the domed athletic stadium.

The biggest amount of current real estate activity, however, is at the man-on-the-street level. An August 16, 1977, UPI story told of 8,000 people showing up to buy 200 new homes in Orange County; "The end is not yet in sight" and "I haven't heard of anyone losing money on buying a house" were typical quotations. But prices are now surging to what is likely to become their peak. Real estate prices appear to decline about one to three years ahead of the secondary depression, with farm land prices, which are most closely tied to wholesale prices (farm product prices), leading the way. Exhibit VI illustrates how farm product prices have historically influenced farm land prices.

The mood of the nation also indicates that we are in a plateau phase. People have become self-absorbed again. There is a nostalgia for the fifties. As the August 15, 1977, issue of *Time* magazine indicated, the country has grown tired of the reformist mood of the sixties. Jerry Rubin now lives in a Manhattan high-rise with uniformed doormen. Rennie Davis now sells life insurance for John Hancock, wears a blow-dry hairdo and lives, as he says, "a sweet useful life." High school and college students today are far more interested in good grades and careers than in hard drugs and protesting. The high school prom is once again a major social event, and college fraternities and sororities are making a comeback. In general, people are concerned with their own lives, and want Washington to stop interfering with them. California's Proposition 13 reflects this anti-government mood.

In the 1920s, it was much the same. The search for enjoyment and escapism found its outlet in the fantastic acceptance of the newborn Hollywood movie industry. People told Washington to mind its own business as they flagrantly violated Prohibition. The quickest way to wealth was the most admired and sought-after. In the 1920s, this meant the great game on Wall Street; today, it includes rock music stardom, "pet rock" promotions and the soaring salaries of professional athletes.

Finally, economists and bankers, businessmen, consumers, politicians, voters and taxpayers evidence a caution and conservatism that did not exist in the late sixties and early seventies. It will be impossible to regain the robust economy of that period without the accompanying aggressive attitudes.

Implications for Investment Policy

If history repeated itself exactly, the dyed-in-the-wool follower of Kondratieff would already be looking for actual declines in the level of wholesale and consumer prices. The real estate boom would cool off within the next two years, and prices would actually decline. Then, some time between 1979 and 1983, something would trigger the rapid collapse of our currently vulnerable economy, and we would suffer through one or more prolonged recessions, passing various sorts of legislation in an attempt to solve the resulting problems, until a war some time in the 1990s would signal the beginning of another 25 to 30-year period of sustained economic growth.

So far, one might conclude that the best investment policy would be (1) to stop investing in real estate and take advantage of the current boom by selling all currently held property; (2) to sell out stock portfolios completely at the end of the plateau phase; (3) to take all those dollars from the sale of real estate and stocks and hold them in cash and AAA-rated bonds selling at a discount (thus taking advantage of the continued decline in interest rates); and (4) to wait for the secondary depression and use accumulated cash and bond resources to buy stocks and real estate cheaply. (You might ask why gold is not part of this scenario. The answer is that gold has historically declined in value in every deflationary phase of the Kondratieff cycle except the last one, when the government artificially pegged it at 69 per cent above its market value.)

But history rarely repeats itself exactly. Even if the basic cycle remains intact, its timing and its amplitude may change. History has always shown that no two cycles are exactly alike. For example, the stagnant period of the second cycle had such underlying strength from the industrial revolution then taking place that the period from 1871 to 1896 showed an average compound growth rate of 3.9 per cent in real GNP, higher than the 3.7 per cent 100-year (1871-1969) trendline rate. (However, even this period can be identified as a stagnant phase in that it experienced two very difficult, lengthy depressions and declining prices and interest rates.)

Our current megacycle differs from previous ones in the degree of government influence on the economy. Federal transfer payment programs alone (Social Security, unemployment compensation, welfare, etc.) equaled 11 per cent of GNP in 1977. Total net government outlays at all levels in the United States absorbed more than 30 per cent of our GNP, up from below 20 per cent in 1939 and under 10 per cent in 1929. While plateau phases have historically been periods of balanced budgets and accompanying deflation, as the country tried to repay its war debts, we currently have a very large budget deficit. Should it continue, it is conceivable that the stagnant phase of the current cycle will be accompanied by inflation—a new combination.

The current cycle may also turn out to be longer than earlier ones, because of our greatly increased life expectancy. This might mean that we have not yet seen the final peak, that the inflationary excesses yet to come may be greater than we have yet experienced, and that the 1975 recession was not the primary depression but only a more severe business cycle on the up-leg of the Kondratieff wave.

The incredible rate of technological change in the past 50 years could also alter expectations. The stimulus of a new technology may provide for continuous growth, rendering obsolete much of our capital stock before it can be physically used up. Such a period of growth during the stagnant phase of the cycle could parallel the experience of the industrial revolution in the late nineteenth century. On the other hand, it appears to be unlikely in the near future, since we have reduced our commitment to basic research over the past decade.[5]

With these caveats in mind, it is possible to make some recommendations for an investment policy designed on the Kondratieff megacycle. First, given the almost non-existent relation between the economic megacycle and any stock market cycle, equity investment decisions should continue to be based largely on independent considerations and the relative merits of alternative investments.

Second, although many money managers shunned corporate and municipal bonds when interest rates were rising during the 1960s, these instruments should be given more careful consideration during the years immediately after a Kondratieff peak. AAA-rated bonds, selling at a discount, offer the best insurance against a deflation or depression, so these assets should be given a relatively heavier weighting in the portfolio as one's forecast for a deflation becomes more certain. Bonds of less than AAA quality will probably not hold market value well in the event of a depression.

Finally, some real estate should be held as a hedge against the possibility of continued inflation. However, the portfolio should emphasize moderately mortgaged, long-term, stable holdings such as shopping centers and retirement mobile home parks. Properties in geographic areas that have seen excessive speculation, such as much of California, should be sold. (In 1929, according to a now retired mortgage executive who was a savings and loan branch manager at that time, single-family home prices in southern California fell 65 per cent on average.)

For the time being, however, the investor should monitor the economy and maintain a diversified portfolio biased in whatever direction he thinks appropriate. Persons who either use the Kondratieff cycle as an iron-clad philosophy or completely ignore it may end up being quite right, but they are more likely to end up looking very foolish. ■

Footnotes

1. We have relied upon federal data and other published sources, the reliability of which is obviously poor prior to the 1930s or 1940s. In many cases, indexes have been reconstructed from comparable data, and thus continuity is not perfect. However, it is the best we have to work with.
2. Although it is commonly believed that the Roaring Twenties—our last complete plateau phase—was a period of unusual prosperity, real GNP growth averaged only 3.5 per cent annually for 1923-29, compared to a four per cent real annual growth for 1947-69 and 4.2 per cent for 1896-1918. See U.S. Department of Commerce, *Historical Statistics of the United States*—Bicentennial Edition 1975, p. 224.
3. Thomas A. Bailey, *The American Pageant* (Lexington, MA: D.C. Heath & Co., 1966), p. 227.
4. Jay W. Forrester, "A New View of Business Cycle Dynamics," *The Journal of Portfolio Management*, Fall 1976, pp. 22-32.
5. "The Innovation Recession," *Time*, 2 October 1978, pp. 57-63.