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 LIBERTY FUND Indianapolis

ing Compagnie share prices at nine thousand livres and exchanging its notes for Compagnie stock. Within a few months, France's money supply was effectively doubled since Banque Royale notes were considered legal tender. A period of hyperinflation ensued, followed by the company's stopgap deflationary efforts of reducing the fixed price of Compagnie shares to five thousand livres. Confidence in the company dissolved, and John Law was eventually removed from power.

This brief account shows how each company's rise and fall is traceable to events that were likely to change how investors fundamentally valued South Sea and Compagnie shares, contrary to what a bubble hypothesis would suggest. These companies were essentially performing large-scale financial experiments based on prospects for long-term growth. They ultimately failed, but they could well have shown enough promise to convince even the most incredulous investors of their potential for success. It would be difficult to characterize what may have been rational behavior *ex ante* as evidence of bubble formation. Indeed, John Law's operations with the Banque Royale essentially attempted to expand French commerce by expanding France's money supply. This monetary policy is one that an entire generation of Keynesian economists promoted more than two hundred years after the Mississippi and South Sea "bubbles." Yet few economists, even those highly dismissive of Keynesian economics, are willing to call Keynesians irrational.

The Modern Bubble Debate

The jury is still out on whether or not bubbles can persist in modern asset markets. Debates continue among economists even on the existence of irrational or rational bubbles. And there is often confusion in trying to distinguish irrational bubbles from rational bubbles that might be generated by investors' rational but flawed perceptions of market fundamentals. Most modern efforts focus on developing sophisticated statistical methods to detect bubbles, but none has enjoyed a consensus of support among economists.

About the Author

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Business Cycles

Christina D. Romer

The United States and all other modern industrial economies experience significant swings in economic activity. In some years, most industries are booming and unemployment is low; in other years, most industries are operating well below capacity and unemployment is high. Periods of economic prosperity are typically called expansions or booms; periods of economic decline are called recessions or depressions. The combination of expansions and recessions, the ebb and flow of economic activity, is called the business cycle.

Business cycles as we know them today were codified and analyzed by Arthur Burns and Wesley Mitchell in their 1946 book *Measuring Business Cycles*. One of Burns and Mitchell's key insights was that many economic indicators move together. During an expansion, not only does output rise, but also employment rises and unemployment falls. New construction also typically increases, and inflation may rise if the expansion is particularly brisk. Conversely, during a recession, the output of goods and services de-

clines, employment falls, and unemployment rises; new construction also declines. In the era before World War II, prices also typically fell during a recession (i.e., inflation was negative); since the 1950s prices have continued to rise during downturns, though more slowly than during expansions (i.e., the rate of inflation falls). Burns and Mitchell defined a recession as a period when a broad range of economic indicators falls for a sustained period, roughly at least half a year.

Business cycles are dated according to when the direction of economic activity changes. The peak of the cycle refers to the last month before several key economic indicators—such as employment, output, and retail sales—begin to fall. The trough of the cycle refers to the last month before the same economic indicators begin to rise. Because key economic indicators often change direction at slightly different times, the dating of peaks and troughs is necessarily somewhat subjective. The National Bureau of Economic Research (NBER) is an independent research institution that dates the peaks and troughs of U.S. business cycles. Table 1 shows the NBER monthly dates for peaks and troughs of U.S. business cycles since 1890. Recent research has shown that the NBER's reference dates for the period before World War I are not truly comparable with those for the modern era because they were determined using different methods and data. Figure 1 shows the unemployment rate since 1948, with periods that the NBER classifies as recessions shaded in gray. Clearly, a key feature of recessions is that they are times of rising unemployment.

In many ways, the term "business cycle" is misleading. "Cycle" seems to imply that there is some regularity in the

timing and duration of upswings and downswings in economic activity. Most economists, however, do not think there is. As Figure 1 shows, expansions and recessions occur at irregular intervals and last for varying lengths of time. For example, there were three recessions between 1973 and 1982, but, then the 1982 trough was followed by eight years of uninterrupted expansion. The 1980 recession lasted just six months, while the 1981 recession lasted sixteen months. For describing the swings in economic activity, therefore, many modern economists prefer the term "short-run economic fluctuations" to "business cycle."

Causes of Business Cycles

Just as there is no regularity in the timing of business cycles, there is no reason why cycles have to occur at all. The prevailing view among economists is that there is a level of economic activity, often referred to as full employment, at which the economy could stay forever. Full employment refers to a level of production in which all the inputs to the production process are being used, but not so intensively that they wear out, break down, or insist on higher wages and more vacations. When the economy is at full employment, inflation tends to remain constant; only if output moves above or below normal does the rate of inflation systematically tend to rise or fall. If nothing disturbs the economy, the full-employment level of output, which naturally tends to grow as the population increases and new technologies are discovered, can be maintained forever. There is no reason why a time of full employment has to give way to either an inflationary boom or a recession.

Business cycles do occur, however, because disturbances to the economy of one sort or another push the economy above or below full employment. Inflationary booms can be generated by surges in private or public spending. For example, if the government spends a lot to fight a war but does not raise taxes, the increased demand will cause not only an increase in the output of war matériel, but also an increase in the take-home pay of defense workers. The output of all the goods and services that these workers want to buy with their wages will also increase, and total production may surge above its normal, comfortable level. Similarly, a wave of optimism that causes consumers to spend more than usual and firms to build new factories may cause the economy to expand more rapidly than normal. Recessions or depressions can be caused by these same forces working in reverse. A substantial cut in government spending or a wave of pessimism among consumers and firms may cause the output of all types of goods to fall.

Another possible cause of recessions and booms is monetary policy. The Federal Reserve System strongly influences the size and growth rate of the money stock, and

Table 1 Business Cycle Peaks and Troughs in the United States, 1890–2004

Peak	Trough	Peak	Trough
July 1890	May 1891	May 1937	June 1938
Jan. 1893	June 1894	Feb. 1945	Oct. 1945
Dec. 1895	June 1897	Nov. 1948	Oct. 1949
June 1899	Dec. 1900	July 1953	May 1954
Sep. 1902	Aug. 1904	Aug. 1957	Apr. 1958
May 1907	June 1908	Apr. 1960	Feb. 1961
Jan. 1910	Jan. 1912	Dec. 1969	Nov. 1970
Jan. 1913	Dec. 1914	Nov. 1973	Mar. 1975
Aug. 1918	Mar. 1919	Jan. 1980	July 1980
Jan. 1920	July 1921	July 1981	Nov. 1982
May 1923	July 1924	July 1990	Mar. 1991
Oct. 1926	Nov. 1927	Mar. 2001	Nov. 2001
Aug. 1929	Mar. 1933		

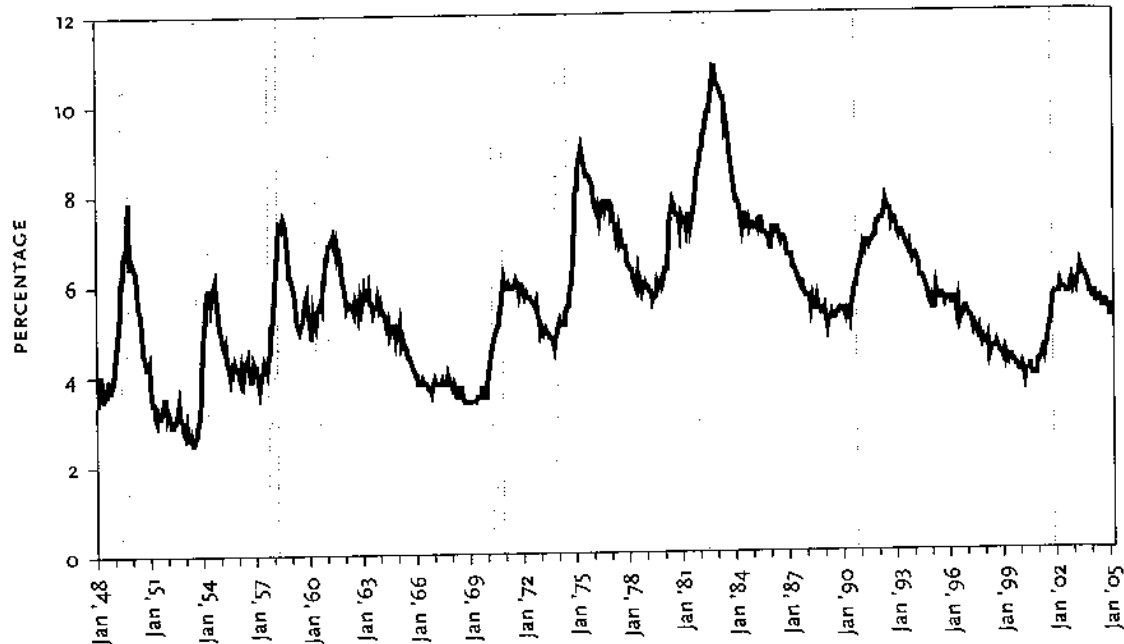


Figure 1 Unemployment Rate and Recessions
Source: The data are from the Bureau of Labor Statistics.

Note: The series graphed is the seasonally adjusted civilian unemployment rate for those age sixteen and over. The shaded areas indicate recessions.

thus the level of interest rates in the economy. Interest rates, in turn, are a crucial determinant of how much firms and consumers want to spend. A firm faced with high interest rates may decide to postpone building a new factory because the cost of borrowing is so high. Conversely, a consumer may be lured into buying a new home if interest rates are low and mortgage payments are therefore more affordable. Thus, by raising or lowering interest rates, the Federal Reserve is able to generate recessions or booms.

This description of what causes business cycles reflects the Keynesian or new Keynesian view that cycles are the result of nominal rigidities. Only when prices and inflationary expectations are not fully flexible can fluctuations in overall demand cause large swings in real output. An alternative view, referred to as the new classical framework, holds that modern industrial economies are quite flexible. As a result, a change in spending does not necessarily affect real output and employment. For example, in the new classical view a change in the stock of money will change only prices; it will have no effect on real interest rates and thus on people's willingness to invest. In this alternative framework, business cycles are largely the result of disturbances in productivity and tastes, not of changes in aggregate demand.

The empirical evidence is strongly on the side of the

view that deviations from full employment are often the result of spending shocks. Monetary policy, in particular, appears to have played a crucial role in causing business cycles in the United States since World War II. For example, the severe recessions of both the early 1970s and the early 1980s were directly attributable to decisions by the Federal Reserve to raise interest rates. On the expansionary side, the inflationary booms of the mid-1960s and the late 1970s were both at least partly due to monetary ease and low interest rates. The role of money in causing business cycles is even stronger if one considers the era before World War II. Many of the worst prewar depressions, including the recessions of 1908, 1921, and the Great Depression of the 1930s, were to a large extent the result of monetary contraction and high real interest rates. In this earlier era, however, most monetary swings were engendered not by deliberate monetary policy but by financial panics, policy mistakes, and international monetary developments.

Historical Record of Business Cycles

Table 2 shows the peak-to-trough decline in industrial production, a broad monthly measure of manufacturing and mining activity, in each recession since 1890. The industrial production series used was constructed to be comparable over time. Many other conventional macroeco-

Table 2 Peak-to-Trough Decline in Industrial Production

Year of NBER Peak	% Decline	Year of NBER Peak	% Decline
1890	-5.3	1937	-32.5
1893	-17.3	1945	-35.5
1895	-10.8	1948	-10.1
1899	-10.0	1953	-9.5
1902	-9.5	1957	-13.6
1907	-20.1	1960	-8.6
1910	-9.1	1969	-7.0
1913	-12.1	1973	-13.1
1918	-6.2	1980	-6.6
1920	-32.5	1981	-9.4
1923	-18.0	1990	-4.1
1926	-6.0	2001	-6.2
1929	-53.6		

Source: The industrial production data for 1919–2004 are from the Board of Governors of the Federal Reserve System. The series before 1919 is an adjusted and smoothed version of the Miron-Romer index of industrial production. This series is described in the appendix to "Remeasuring Business Cycles" by Christina D. Romer.

Note: The peak-to-trough decline is calculated using the actual peaks and troughs in the industrial production series. These turning points often differ from the NBER dates by a few months, and occasionally by as much as a year.

conomic indicators, such as the unemployment rate and real GDP, are not consistent over time. The prewar versions of these series were constructed using methods and data sources that tended to exaggerate cyclical swings. As a result, these conventional indicators yield misleading estimates of the degree to which business cycles have moderated over time.

The empirical record on the duration and severity of recessions over time reflects the evolution of economic policy. The recessions of the pre-World War I era were relatively frequent and quite variable in size. This is consistent with the fact that before World War I, the government had little influence on the economy. Prewar recessions stemmed from a wide range of private-sector-induced fluctuations in spending, such as investment busts and financial panics, that were left to run their course. As a result, recessions occurred frequently, and some were large and some were small.

After World War I the government became much more involved in managing the economy. Government spending

and taxes as a fraction of GDP rose substantially in the 1920s and 1930s, and the Federal Reserve was established in 1914. Table 2 makes clear that the period between the two world wars was one of extreme volatility. The declines in industrial production in the recessions of 1920, 1929, and 1937 were larger than in any recessions in the pre-World War I and post-World War II periods. A key factor in these extreme fluctuations was the replacement, by the 1920s, of some of the private-sector institutions that had helped the U.S. economy weather prewar fluctuations with government institutions that were not yet fully functional. The history of the interwar era is perhaps best described as a painful learning period for the Federal Reserve. The downturn of the mid-1940s obviously reflects the effect of World War II. The war generated an incredible boom in economic activity, as production surged in response to massive government spending. The end of wartime spending led to an equally spectacular drop in industrial production as the economy returned to more normal levels of labor and capital utilization.

Recessions in the early postwar era were of roughly the same average severity as those before World War I, although they were somewhat less frequent than in the earlier period and were more consistently of moderate size. The decreasing frequency of downturns reflects progress in economic policymaking. The Great Depression brought about large strides in the understanding of the economy and the capacity of government to moderate cycles. The Employment Act of 1946 mandated that the government use the tools at its disposal to stabilize output and employment. And indeed, economic policy since World War II has almost certainly counteracted some shocks and hence prevented some recessions. In the early postwar era, however, policymakers tended to carry expansionary policy too far, and in the process caused inflation to rise. As a result, policymakers, particularly the Federal Reserve, felt compelled to adopt contractionary policies that led to moderate recessions in order to bring inflation down. This boom-bust cycle was a common feature of the 1950s, 1960s, and 1970s.

Recessions in the United States have become noticeably less frequent and severe since the mid-1980s. The nearly decade-long expansions of the 1980s and 1990s were interrupted by only very mild recessions in 1990 and 2001. Economists attribute this moderation of cycles to a number of factors, including the increasing importance of services (a traditionally stable sector of the economy) and a decline in adverse shocks, such as oil price increases and fluctuations in consumer and investor sentiment. Most economists believe that improvements in monetary policy, particularly the end of overexpansion followed by deliberate contraction, have been a significant factor as well.

In addition to reductions in the frequency and severity of downturns over time, the effects of recessions on individuals in the United States and other industrialized countries almost surely have been lessened in recent decades. The advent of unemployment insurance and other social welfare programs means that recessions no longer wreak the havoc on individuals' standards of living that they once did.

About the Author

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Campaign Finance

Jeffrey Milyo

Conventional wisdom holds that money plays a central and nefarious role in American politics. Underlying this belief are two fundamental assumptions: (1) elective offices are effectively sold to the highest bidder, and (2) campaign contributions are the functional equivalent of bribes. Campaign finance regulations are thus an attempt to hinder the operation of this political marketplace. Of course, the scope of such regulation is itself limited by the constitutional protection of political speech, association, and the right to petition. Nevertheless, many Americans are willing to sacrifice their, and others', free-speech rights in an attempt to limit the influence of moneyed interests in politics.

One might think that the existence of a political marketplace would produce efficient policy outcomes, even if at the cost of the democratic ideals of equal representation and participation. However, PUBLIC CHOICE economists have shown that if favors are bought and sold, those who buy them often gain much per person, but their gains are

more than offset by the smaller losses per person sustained by the large number of losers. So a political marketplace does not ensure efficient policies. Interestingly, though, scholarly research on the economics of campaign finance suggests that the political marketplace analogy is not a fair description of American democracy.

Electoral Effects of Campaign Spending

Every two years, public-interest groups and media pundits lament the fact that winning candidates typically far outspend their rivals. They infer from this that campaign spending drives electoral results. Most systematic studies, however, find no effect of marginal campaign spending on the electoral success of candidates.¹

How can this be so? The best explanation to date is that competent candidates are adept at both convincing contributors to give money and convincing voters to give their vote. Consequently, the finding that campaign spending and electoral success are highly correlated exaggerates the importance of money to a candidate's chances of winning. To gauge the causal relationship between campaign spending and electoral success, it is necessary to isolate the effects of increases in campaign spending that are unrelated to a candidate's direct appeal to voters. For example, wealthy candidates are able to spend more money on their campaigns for reasons that have little to do with their popularity among voters. Consider the experience of Senator Jon Corzine (D-N.J.), who defeated a weak Republican opponent to gain election to the Senate in 2000. Corzine spent sixty million dollars, mostly from his personal fortune, on his Senate campaign. Many observers pointed to this episode as an example of how a wealthy individual can buy elective office. Despite his record spending, however, Corzine's vote total ran behind that of the average House Democrat in New Jersey and behind the Democratic nominee for president, Al Gore, even though Gore did very little campaigning in strongly Democratic New Jersey. There is even some evidence that Corzine's wealth was a liability, given that many yard signs urged his Republican opponent to "make him spend it all!"

A more systematic analysis of the electoral fortunes of wealthy candidates found no significant association between electoral or fund-raising success and personal wealth.² Related findings abound. For example, large cam-

1. Steven Levitt, "Using Repeat Challengers to Estimate the Effects of Campaign Spending on Electoral Outcomes in the U.S. House," *Journal of Political Economy* 102 (1994): 777-798.

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