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SUPPLEMENTARY MATERIAL

Opportunities and Costs

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Because of Scarcity, Everything We Do Involves Sacrifice

Dwight R. Lee

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My previous columns have been devoted to an overview of how markets work by facilitating social cooperation: providing people with the information and motivation to pursue their own advantages in ways that best create opportunities for others. My emphasis has been on the forest rather than the individual trees of economic understanding. Now I shall begin looking at some of the key concepts essential to applying economic reasoning to all human activity. I begin with opportunity cost.

Limits and Opportunities

Economics has been called the dismal science because it studies the most fundamental of all problems, scarcity. Because of scarcity we all face the dismal reality that there are limits to what we can do. No matter how productive we become, we can never accomplish and enjoy as much as we would like. The only thing we can do without limit is desire more. Because of scarcity, every time we do one thing we necessarily have to forgo doing something else desirable. So there is an opportunity cost to everything we do, and that cost is expressed in terms of the most valuable alternative that is sacrificed.

But the pervasiveness of costs suggests that the dismal reality of limits is only one side of a coin with a brighter side. The limits of scarcity create costs only when there are opportunities. Eliminate the opportunity to choose among alternatives and there are no

costs. If, for example, I am forced to live in a particular house, take a particular job, marry a particular woman, and consume a set bundle of goods, I incur no costs when I do those things. So the bright side of costs is the opportunities that create them. Expand our opportunities and the costs of everything we do increase.

Although we commonly see cost as something to avoid, in fact we are better off living in an economy where we are forced to confront the cost of everything we do. I personally might be better off if I could consume products without having to consider their costs because I could shift them to others. But any advantage I could realize would be more than offset if others could ignore the costs of their activities and shift them to me. As a result, we would all lack the information and motivation to choose wisely. Only when the costs of choices are imposed on those who make those choices can we best use the opportunities available.

This is one way of explaining the advantage of market prices. The prices people pay in the marketplace reflect the opportunity costs of their choices. You cannot generally purchase a good or service in a free market for less than others are willing to pay for it, or for less than the amount spent to make it available, which is an important part of the social cooperation that emerges out of market transactions.

Special Interests Don't Want Costs Considered

Unfortunately, many economic decisions are made not in a market setting in response to market prices, but by government in response to political considerations. This creates opportunities for the politically influential to acquire benefits paid for by the general public. Invariably, those seeking political benefits downplay the costs in the hope of justifying larger expenditures; they commonly argue that some things are so important that costs shouldn't even be considered.

Educators argue that education is too important to be considered in terms of costs; environmentalists argue that saving the earth is so imperative that environmental programs should be implemented regardless of the costs; recipients of medical research grants argue that human health trumps any crass consideration of costs; and people supported by the National Endowment for the Arts claim that the value of "art goes to the very soul of what it means to be human" and is "contaminated when compared with dollars and cents." (That's a close paraphrase of a statement on arts funding that I heard on National Public Radio.)

All these statements are best understood as attempts by organized groups to capture more public money. To consider costs has nothing to do with exaggerating the importance of money. Money provides a convenient way of expressing costs, but money is not the cost of anything. When I put down a ten-dollar bill to pay for a meal, the money may appear to be the cost, but the real cost is the opportunity cost—the subjective value I forgo by spending the money on the meal rather than spending it on the most valuable alternative.

Silly Claims

To claim that we shouldn't consider the cost of doing some things is equivalent to claiming that we should do those things without considering the alternatives. That such a transparently silly claim continues to be used in special-interest pleading illustrates the power of deception over logic in political debate. Not considering the alternatives to doing something would make sense only if it were always more valuable than anything else. But this means that we should devote all of our resources to this one thing. If it were really true that fine orchestral music, for example, was so valuable that costs shouldn't be considered, then everyone should go homeless and hungry and spend all of their time listening to orchestras in the nude. This is obviously silly, but not one bit

sillier than claiming that something is so important that it is inappropriate to consider its cost.

As soon as two or more groups claim that their program should be funded without considering costs, the relevance of costs should be obvious. Educating our youth and curing our sick cannot both be too important to consider cost, not in a world of scarcity. The cost of doing more to educate our youth is doing less to cure our sick, and vice versa. To ignore the cost of one is to treat the other as unworthy in comparison.

Of course, the reality of scarcity, and the opportunity costs that result, intrudes into the political process despite the special-interest rhetoric disparaging considerations of cost. Comparisons have to be made among competing alternatives, so opportunity costs are considered in the political process. Unfortunately, imperfections and biases in the political process prevent the opportunity cost of government action from being adequately considered. The result is what one should expect when alternatives are poorly considered. Waste occurs as decisions direct resources out of more valuable and into less valuable activities, and often into activities counterproductive to the stated objectives.

Market prices do not perfectly reflect opportunity costs, but one can appreciate how close they get by considering the perversities that arise because political decisions often ignore most of the costs of a policy. I shall consider this problem next month as a way of further illustrating the importance of opportunity costs in understanding economics.

Dwight R. Lee. Dwight R. Lee is the O'Neil Professor of Global Markets and Freedom in the Cox School of Business at Southern Methodist University.

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Gross Domestic Product

INTERNATIONAL BUSINESS

China G.D.P. Growth at Slowest Pace Since 2009, Data Shows

By NEIL GOUGH, JAN. 18, 2016

HONG KONG — China's growth slowed further last year, adding to the troubling economic picture that is unsettling investors around the world.

The Chinese economy grew at a 6.8 percent pace in the fourth quarter, according to data released on Tuesday. It was the lowest quarterly expansion since the global financial crisis in 2009.

Uncertainty about the Chinese economy — and whether the government can manage a slowdown — has been weighing heavily on global markets in recent weeks. Investors, in part, are trying to determine if China's slump will spread, dragging down the rest of the world.

The latest data is not likely to reassure investors that all is well in China, the world's second-largest economy.

The quarterly growth rate was lower than analysts expected. For the full year, China expanded at 6.9 percent, just below the government's target of 7 percent.

It is a pace that would be the envy of many developed countries. But the figure represented China's slowest expansion since 1990, when foreign investment shriveled in the year after the government's deadly crackdown on protesters in Tiananmen Square.

"Signs of growth bottoming out are nowhere to be seen," said Li-Gang Liu, the chief economist for greater China at the Australia and New Zealand Banking Groups. "Instead, we will see at least another two years of further growth slowdown."

After decades of double-digit growth, the Chinese economy is entering a new era of more muted growth. While the government's leaders have said they are comfortable with this shift, the slowdown creates a host of unexpected challenges.

China's growth is decelerating as its traditional industrial businesses struggle with excess capacity and dwindling demand. A slump in new housing construction is hurting

consumption of building materials including steel, cement and glass, even as home prices show signs of a rebound.

China's export base in lower-end manufacturing, once a powerhouse that drove growth and created jobs, has been hollowed out. Factories churning out goods like garments and furniture are losing competitiveness because of lower wages in Southeast Asia and South Asia.

Although consumer spending and more innovative private sector companies are expected to help China's economy expand in the future, analysts worry that their development will be too slow to offset the current and painful industrial slowdown.

And the government's response could add to the challenges. The government has rolled out a raft of stimulus measures to help bolster the economy. But that only threatens to leave already struggling companies even deeper in debt.

Taken collectively, China's results could spell more trouble for global growth, even as the economy in the United States shows resilience.

Separate monthly data released on Tuesday offered no sign that China's slowdown was bottoming out. In December, industrial production rose 5.9 percent from a year ago, retail sales increased 11.1 percent and investment rose 10 percent — all of which were slightly below economists' forecasts.

In a news release on Tuesday, China's state statistics agency said the growth rate last year was challenged by a "complicated international environment and increasing downward pressure on the economy." However, it added that the economy "achieved moderate but stable and sound development."

The weakness in China has reverberated around the world, as investors try to dissect what's actually happening in the country's economy. The plunge in Chinese stocks, which are now in bear territory, only clouds the outlook.

Global investors worry about what these dramatic stock swings say about the health of China's economy. But analysts note that the frequent gyrations of Chinese stocks are often unrelated to what is happening on the ground in China.

"There does seem to be a disconnection there between equities in mainland China and how the economy is actually performing," said Julian Evans-Pritchard, a China economist at Capital Economics.

He cited the example of a huge rally in the Shanghai and Shenzhen markets in the first half of last year— which gathered steam even as the economic data emerging from the mainland suggested a sharpening slowdown.

“A lot of what goes on is driven by perceptions of what policy makers are going to do in terms of market support, rather than what’s happening in the real economy,” said Mr. Evans-Pritchard.

Asian markets seemed unmoved by the G.D.P. figures, as Shanghai closed up 3.25 percent, and Japan’s Nikkei 225 index finished the day up about 0.6 percent. In Europe, the FTSE Euronext index rose nearly 2 percent at the open.

Extracted from http://www.nytimes.com/2016/01/19/business/international/china-gdp-economy.html?ref=topics

Business cycles

Printable Format for http://www.econlib.org/library/Enc/BusinessCycles.html

THE CONCISE ENCYCLOPEDIA OF ECONOMICS

Business Cycles by 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 declines, 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."

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		

Causes of Business Cycles

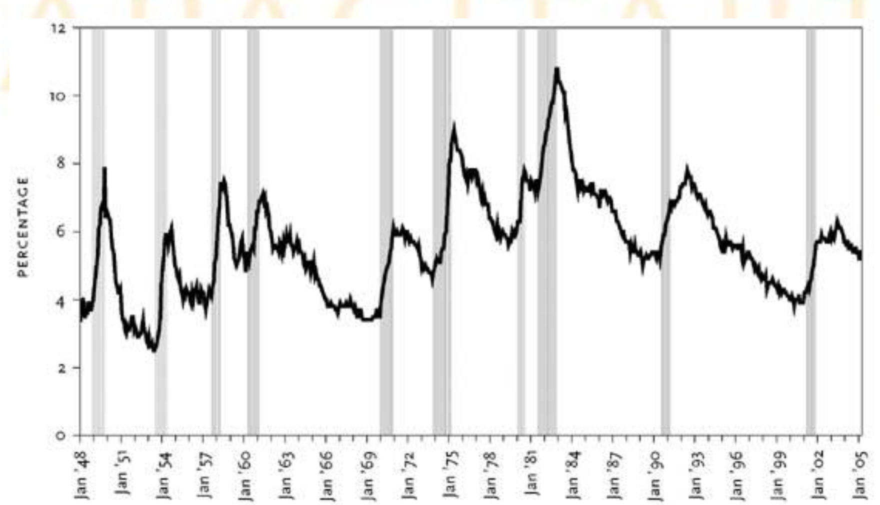
Just as there is no regularity in the timing of business cycles, there is no reason why cycles have to occur at all. The prevailing view among economists is that there is a level of economic activity, often referred to as full employment, at which the economy could stay forever. Full employment refers 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 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.

Figure 1. *Unemployment Rate and Recessions*[1]



1 *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.

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 macroeconomic 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.

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.

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.

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About the Author

Christina D. Romer is a professor of economics at the University of California, Berkeley, and co-director of the Program in Monetary Economics at the National Bureau of Economic Research.

Further Reading

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