

DISCUSSION

Richard N. Cooper*

This paper by Michael Bergman, Michael Bordo, and Lars Jonung presents a number of statistics on annual fluctuations in economic activity drawn from 13 countries over the period 1873 to 1995. It first transforms the raw estimates on GDP, its various components, money supply, and consumer price indices by calculating the cyclic component around trends, using a Baxter-King band-pass filter. It then calculates, under four different monetary regimes covering the periods 1876 to 1913, 1920 to 1938, 1948 to 1972, and 1973 to 1995, variances and correlation coefficients for the transformed data, both within and between countries. Several generalizations emerge from these calculations, generalizations that are comfortably confirming of the conventional wisdom about business cycles. These generalizations are usefully summarized in the concluding section of the paper, and need not be repeated here. Rather, I will offer some remarks on the tasks the authors performed and their conclusion that “the cyclical pattern . . . appears to remain surprisingly stable across time, regimes, and countries” and then on the broader question of international origins and transmission of the business cycle.

As a backdrop to my comments on the authors’ calculations, I provide Tables 1 and 2, which show the years in which economic activity (as measured by real GDP) actually turned down in nine countries during the periods 1873 to 1913 and 1957 to 1994. The data are taken from Angus Maddison (1995, Table B-10).

Table 1, covering the gold standard era, shows only nine years (1882, 1887, 1898–99, 1905–07, 1911–12) of 41 in which at least one country of the nine did not experience a downturn. Second, only in 1908 did as many as

*Maurits C. Boas Professor of International Economics, Harvard University.

Table 1
Downturns in Real GDP, 1873 to 1913

	USA	Canada	UK	Germany	Netherlands	Belgium	France	Italy	Sweden
1873					X		X		
1874	X							X	
1875		X				X			X
1876		X		X	X		X	X	
1877				X					X
1878		X					X		X
1879			X	X	X		X		X
1880				X					
1881					X			X	
1882									
1883								X	
1884					X		X		
1885		X	X				X		X
1886									X
1887									
1888	X				X			X	
1889								X	
1890					X				
1891				X				X	
1892		X	X					X	
1893	X	X			X				
1894	X							X	
1895		X					X		
1896	X	X							
1897							X	X	
1898									
1899									
1900			X		X		X		
1901				X	X		X		X
1902							X	X	X
1903			X						
1904	X				X				
1905									
1906									
1907									
1908	X	X	X		X		X		X
1909									X
1910							X	X	
1911									
1912									
1913							X		

Source: Angus Maddison, 1995, *Monitoring the World Economy 1820–1992*. Table B-10, "GDP Indices for 17 Advanced Capitalist Countries," pp. 148–51. Organisation for Economic Cooperation and Development, Paris.

six countries experience a downturn, while five turned down in 1876 and again in 1879. Third, Belgium experienced only one downturn during the entire 41-year period, while France experienced 14 downturns and Italy and the Netherlands each experienced 12.

These observations on the untransformed data suggest several conclusions. First, most downturns are domestic in origin and are not powerfully transmitted to the other important trading nations. In particular, downturns in the world's leading trading country, Britain, are not notably reflected (as downturns) in its industrial trading partners, either contemporaneously or with a lag, with the possible exceptions of 1879, 1892–93, 1908, and, arguably, 1900–01.

Second, someone especially interested in international transmission would concentrate on 1876, which affected the Continental countries (and, oddly, Canada), on 1879, and on 1908, which affected mainly the maritime nations.

Third, the single downturn for Belgium is not believable, given the 12 downturns in the Netherlands and 14 in France. (Belgium did not experience exceptional growth during this period, its rate of 2.0 percent a year being the slowest after France, the United Kingdom, and Sweden.) That raises the question—a general one—about how good the annual real GDP data are for any of the countries in the pre-1914 period. Most of them, to be sure, reflect painstaking work by economic historians, but often on the basis of fragmentary data, much drawn from censuses taken much less frequently than annually, so that annual data involve heavy imputation from relatively few annual time series, or interpolations. In either case, an analysis of annual fluctuations of such data should be suspect.

Table 2 records downturns in real GDP in the nine countries for the period 1957 to 1994 (the decade 1948–1956 is blank except for the United Kingdom and Belgium in 1952 and the United States and Canada in 1954). Two points are noteworthy about Table 2, especially in contrast to Table 1. First, over the 48 years there have been few recessions (defined as a decline in real GDP from one calendar year to another) since the 1940s, with the United Kingdom at a maximum of seven and Sweden with six, three of which were contiguous (that is, one long recession). Second, the recessions for most countries have been concentrated in the years 1958, 1975, 1981–82, and 1993, suggesting strong international transmission. In particular, all the recessions in the United States, the world's leading economy and trading nation, were accompanied by recessions elsewhere. Of course, two (1975, 1981) and arguably three (1991) of the recessions were associated with major price shocks from the world petroleum market, with their simultaneous price-increasing and contractionary effects. "Stagflation" resulted from the inflationary impulse from the world's single most important commodity input, from the initial contrac-

Table 2
Downturns in Real GDP, 1957 to 1994

	USA	Canada	UK	Germany	Netherlands	Belgium	France	Italy	Sweden
1957									
1958	X		X		X	X			
1959									
1960									
1961									
1962									
1963									
1964									
1965									
1966									
1967				X					
1968									
1969									
1970									
1971									
1972									
1973									
1974	X		X						
1975	X		X	X	X	X	X	X	
1976									
1977									X
1978									
1979									
1980			X						
1981			X		X	X			X
1982	X	X		X	X				
1983									
1984									
1985									
1986									X
1987									
1988									
1989									
1990		X							
1991	X	X	X						X
1992			X						X
1993				X		X	X	X	X
1994									

Source: See Table 1.

tionary impact of the price increase, and from the anti-inflationary policy reactions in the major countries.

The authors are careful to point out that their correlations do not imply causation. Indeed, my impression is that it was agreed long ago that the causal dynamics of business cycles could not be discerned by inspecting annual data, however carefully. Quarterly and preferably monthly data are needed. And inventories, excluded from consideration, historically have played a crucial role in both booms and busts.

The data in the paper are de-trended, but we are not told how the trends are calculated. Implicitly recessions are defined as downward deviations from trend, whether or not GDP actually declined—that is, to include what is sometimes called a growth recession. The authors persuade themselves that their technique is satisfactory since for the United States it tracks the recessions as carefully and judgmentally defined by the NBER. But in fact the filtered data correctly date only 15 of the 26 recessions since 1885, that is, less than 60 percent. I do not consider that a good fit. Moreover, it is hardly surprising that cycles are pervasive with a technique that searches for periodicity of two to eight years around long-term trends.

Whether recessions should be defined as downward deviations from some (which?) trend or as absolute downturns, as in Tables 1 and 2, depends on the underlying purpose of the analysis. For studying the internal causal dynamics of business cycles, at least sharp upward or downward deviations from trend probably offer useful information although, as noted above, quarterly or monthly data are necessary for such analysis. From the point of view of human welfare and hence policy, however, more often than not there is a major difference between a downward deviation from a rapidly rising GDP and an absolute downturn. The latter implies unutilized capital and labor, hence wasted resources, and the hardships that may accompany lost income. Downward deviation from a rising trend need not imply any of these, and often does not. So what is the justification here for transforming the data, to isolate their cyclical components?

I turn now to some broader observations on the changes in industrial economies that have occurred over the past century and a quarter. The most dramatic by far, in my judgment, is the reduction in the fraction of the labor force required for food production. In 1880 this was around one-half in the United States, France, and Germany, and over half in Italy (but already down to 13 percent in Britain). By 1995 it was below 5 percent in almost all the countries covered (7 percent in Italy and Finland, 2.8 percent in the United States). The share of agricultural income dropped by almost as much. The share of manufacturing employment first rose dramatically over this period, then has declined sharply since the 1960s. It is difficult to believe that changes of these magnitudes have not affected the dynamics of the business cycle significantly.

Another major secular change concerns the role of women in paid employment. Women on farms work hard and long, in ways that may not be measured in GDP. Increased female participation in paid employment implies that measured GDP has grown more rapidly than the real output of goods and services. Since much of the unmeasured production undoubtedly was directly consumed, the ratio of measured consumption to measured production is understated in earlier decades; and the variability of measured consumption perhaps exaggerates true variability in earlier years.

A third secular change concerns growth in the importance of government expenditure. This was typically 5 percent of GDP around 1900 (10 percent in France). By 1995 it was around 20 percent of GDP in most industrial countries, and over 40 percent if transfer payments are added to government purchases of goods and services (somewhat lower in the United States and Japan). Insofar as such expenditures and transfers are not subject to the forces of the business cycle or, as in the case of unemployment compensation, may be countercyclical, business cycles should have lower variability, all else equal, in the late twentieth century than in the late nineteenth century. On the other hand, sharp changes in government expenditure, as in the several dramatic increases and declines in defense spending that took place in the United States over the period 1949 to 1995, could be a source of greater variability than was the case in the nineteenth century. Some cross-country comparisons of large movements in government expenditures might be fruitful.

A relatively unchanged economic cycle that survived these dramatic secular changes in modern economies would be robust indeed. If it exists, might it be an endogenous consequence of lags between perceived new demand for investment and sales from the product of that investment?

Finally, the world has experienced from time to time major investment-enhancing technological innovations, such as the introduction of electricity, automobiles, and civil aircraft, each of which required large investments in infrastructure as well as in products. These innovations were introduced in quantity into different countries at markedly different times, and that would provide another potential source for inter-country differences in cyclical timing.

In sum, I find the Bergman, Bordo, and Jonung results interesting but not compelling. My taste runs to more detailed and precise examination of the common and interlinked factors in those time periods where there seems to be some direct connection between downturns (or exceptional booms) in different countries.