

Box 1.1. Global Business Cycles

The global economy is experiencing its deepest downturn in 50 years. Many observers have argued that this downturn has all the features of a global recession. One problem with this debate, however, is that there is little empirical work on global business cycles. This box seeks to fill this gap, defining global business cycles, providing a brief description of their main features, and thus putting the current downturn in perspective.

What constitutes a global business cycle? In the 1960s, it was sufficient to answer this question by looking at cyclical fluctuations in advanced economies, the United States in particular. These countries accounted for the lion's share of world output, nearly 70 percent on a purchasing-power-parity (PPP) basis; moreover, cyclical activity in much of the rest of the world was largely dependent on conditions in advanced economies.¹ Today, with the share of advanced economies in world output down to about 55 percent on a PPP basis, the coincidence between business cycles in these countries and global business cycles can no longer be taken for granted. Indeed, in 2007, as the slowdown in economic activity in the United States and other advanced economies began, the hope was that emerging and developing economies would be somewhat insulated from these developments by the size and strength of domestic demand in their economies and by the increased importance of intraregional trade in Asia.

At the same time, however, the countries of the world are more integrated today through trade and financial flows than in the 1960s, creating greater potential for spillover and contagion effects. This increases the feedback, in both directions, between business cycle devel-

opments in advanced economies and those in emerging and developing economies, increasing the odds of synchronous movements and a global business cycle.

Dating Global Business Cycles

The two standard methods of dating peaks and troughs of business cycles in individual countries—statistical procedures and judgmental methods such as those used by the National Bureau of Economic Research (NBER) and the Center for Economic Policy Research (CEPR), for instance, for the United States and the euro area, respectively—are applied at the global level. Both methods yield the same turning points in global activity.

The statistical method is employed to date the peaks and troughs in a key indicator of global economic activity, world real GDP per capita (on the basis of PPP weights).² Annual data from 1960 to 2010 are used, with the estimates for 2009–10 based on the latest *World Economic Outlook* growth forecasts.³ A per capita measure is used to account for the heterogeneity in population growth rates across countries—in particular, emerging and developing economies tend to have faster GDP growth than industrialized economies, but they also have more rapid population growth.

The algorithm picks out four troughs in global economic activity over the past 50 years—1975, 1982, 1991, and 2009—which correspond to declines in world real GDP per capita (first figure, top panel). Notably, 1998 and 2001 are not identified as troughs, since world real GDP per

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¹With market exchange rates, the share of advanced economies in world output is about 75 percent. Chapter 4 of the April 2007 *World Economic Outlook* analyzes the evolution of the distribution of world output and studies how the impact of growth in advanced economies on developing economies' economic performance has changed over time.

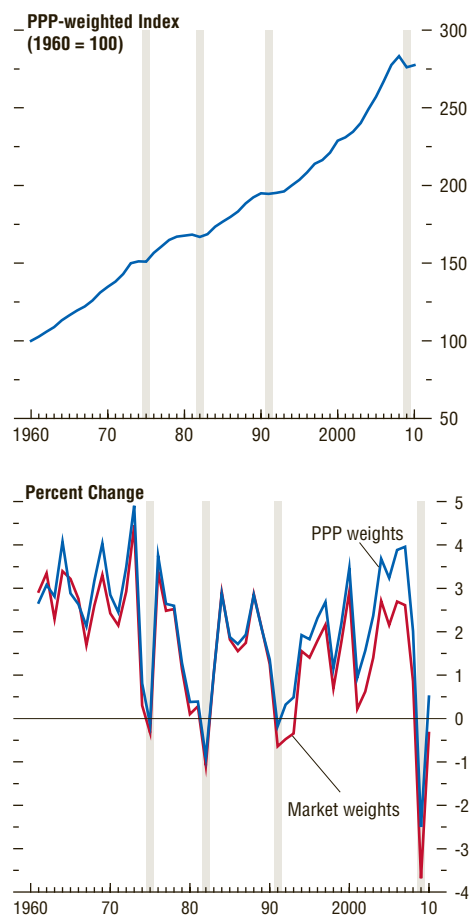
²The method determines the peaks and troughs in the level of economic activity by searching for changes over a given period of time. For annual data, it basically requires a minimum two-year duration of a cycle and a minimum one-year duration of each of the cyclical phases. A complete cycle goes from one peak to the next peak with its two phases, the recession phase (from peak to trough) and the expansion phase (from trough to peak); see Claessens, Kose, and Terrones (2008).

³The sample used to calculate this measure includes almost all the countries in the WEO database.

Box 1.1 (continued)

Real per Capita World GDP¹

(Contractions in purchasing-power-parity (PPP)-weighted global per capita GDP are shaded)



Source: IMF staff estimates.
¹Data for 2009–10 are based on the WEO forecast.

capita did not decline. In 1997–98 many emerging economies, particularly in Asia, had sharp declines in economic activity, but growth in advanced economies held up. In 2001, conversely, many advanced economies had mild recessions, but growth in major emerging markets such as China and India remained robust.⁴

⁴The analysis in Box 1.1 in the April 2002 *World Economic Outlook*, “Was It a Global Recession?” also concluded that the 2001 episode “falls somewhere short of

The use of market weights rather than PPP weights, which tilts the weights toward advanced economies, does not affect the identification of the troughs, except the one in 1991. When the market weights are used, the trough of this episode shifts to 1993 because of the downturns in many European countries during the European exchange rate mechanism (ERM) crisis of 1992–93. However, with both weights, the current projections suggest that the 2009 global recession would be by far the deepest recession in five decades (first figure, bottom panel).⁵

A Broader Assessment of Turning Points

In contrast to a statistical approach, the NBER and CEPR date business cycle peaks and troughs by looking at a broad set of macroeconomic indicators and reaching a judgment on whether a preponderance of the evidence points to a recession. The CEPR’s task is much more complex than that of the NBER because, in addition to looking at multiple indicators, it has to make a determination of whether the euro area as a whole is in recession.

This approach is applied at the global level by looking at several indicators of global activity—real GDP per capita, industrial production, trade, capital flows, oil consumption, and unemployment.⁶ The second figure shows the behavior of these indicators on average

a global recession, certainly in comparison with earlier episodes that we would have labeled as global recessions. That said, it was a close call.” See Chapter 1 of the April 2002 *World Economic Outlook* for details.

⁵By construction, the episodes of global recession the algorithm picks out correspond exactly to periods of falling world real GDP per capita. With both weights, the dates of peaks in the global business cycle are 1974, 1981, 1990, and 2008. If total (rather than per capita) real GDP is used, 2009 is the only contraction the global economy experienced since 1960.

⁶The data for unemployment are available only for a selected number of advanced economies for the full sample period. Long time series on unemployment for emerging and developing economies are difficult to obtain; moreover, the presence of large informal sectors in many of these countries lowers the usefulness of the official unemployment rate as an indicator of labor market conditions.

around the global recessions of 1975, 1982, and 1991 that were identified using the statistical approach. World industrial production and oil consumption start to slow two years before the trough and world trade and capital flows one year before. The unemployment rate registers its sharpest increase in the year of the recession. Unemployment remains high in the year after the trough, while most other indicators have recovered to close to their normal rates of growth.⁷ The current recession is following a pattern similar to that observed in past recessions, though the contractions in most indicators are much sharper this time.

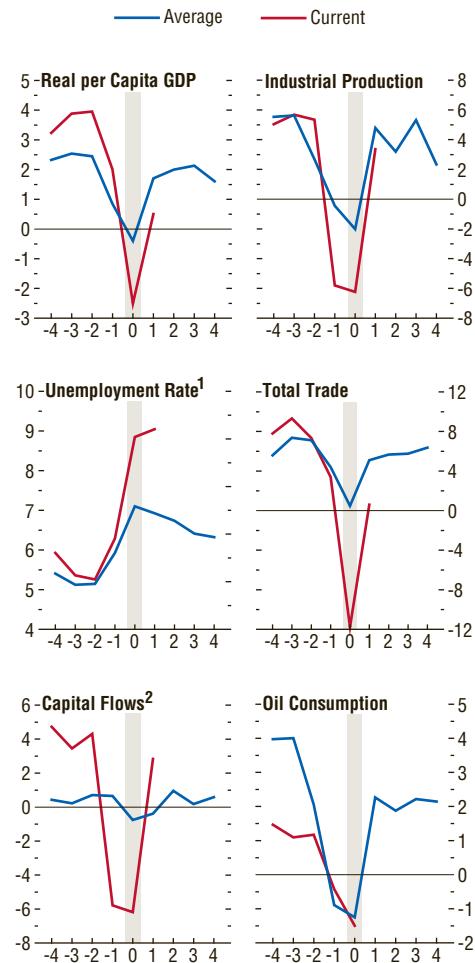
Although the four global recessions share similar qualitative features, there are some important quantitative differences among them. The table shows percent changes in the selected indicators of global activity over the course of the recessions. There are sharper declines in almost all indicators in 1975 and 1982 than in 1991; in 1991, in fact, world trade grew strongly despite the recession. Capital flows registered declines in 1982 and 1991, but those changes are much smaller than the massive contraction during the ongoing episode. Unemployment is expected to increase by about 2.5 percentage points during the current recession, which would be larger than in earlier recessions.

The severity of the 2009 recession is also indicated by the forecast decline in per capita consumption, which is much greater than that observed in 1982 and contrasts with the increase in consumption during the two other global recessions. Per capita investment declined in all global recessions, but the projected decline

⁷During the years 1998 and 2001, the behavior of these global indicators was mixed, supporting the inference from the statistical method that these episodes did not display the features of a global recession. The statistical method is also used to identify the cyclical turning points in quarterly series of global industrial production. The results are broadly consistent with those from the annual series of GDP but they also indicate a trough in industrial production over the period 2000:Q4–2001:Q4.

Selected Variables around World Recessions

(Annual percent change unless otherwise noted; years on x-axis; trough in output at t = 0)



Source: IMF staff calculations.

¹Unemployment rate in percent. Comprises data in the advanced economies only.

²Capital flows refer to the two year rolling window average of the ratio of inflows plus outflows to GDP.

in the present recession easily exceeds that observed in previous episodes.

Synchronicity of National Recessions

The third figure shows yearly fluctuations in the GDP-weighted fraction of countries that have experienced a recession, defined here as

Box 1.1 (concluded)**Global Recessions: Selected Indicators of Economic Activity***(Percent change, unless otherwise indicated)*

Variable	1975	1982	1991	Projected 2009	Average (1975, 1982, 1991)
Output					
Per capita output (PPP ¹ weighted)	-0.13	-0.89	-0.18	-2.50	-0.40
Per capita output (market weighted)	-0.33	-1.08	-1.45	-3.68	-0.95
Other macroeconomic indicators					
Industrial production	-1.60	-4.33	-0.09	-6.23	-2.01
Total trade	-1.87	-0.69	4.01	-11.75	0.48
Capital flows ²	0.56	-0.76	-2.07	-6.18	-0.76
Oil consumption	-0.90	-2.87	0.01	-1.50	-1.25
Unemployment ³	1.19	1.61	0.72	2.56	1.18
Components of output					
Per capita					
consumption	0.41	-0.18	0.62	-1.11	0.28
Per capita investment	-2.04	-4.72	-0.15	-8.74	-2.30

Note: The 1991 recession lasted until 1993, using market weights; all other recessions lasted one year.

¹PPP = purchasing power parity.

²Refers to change in the two-year rolling window average of the ratio of inflows plus outflows to GDP.

³Refers to percentage point change in the rate of unemployment.

a decline in real GDP per capita.⁸ Not surprisingly, the percentage of countries experiencing recession goes up sharply during the four global recessions. Although the 1975 recession was driven largely by declines in industrialized economies, emerging and developing economies played a role in the other three episodes. In 1982, recessions in many Latin American economies contributed to the decline in global activity, whereas in 1991 declines in the transition economies played an important role. The 1991 recession was a multiyear episode in which the U.S. recession in 1990–91 was followed by recessions among European countries during the ERM crisis.

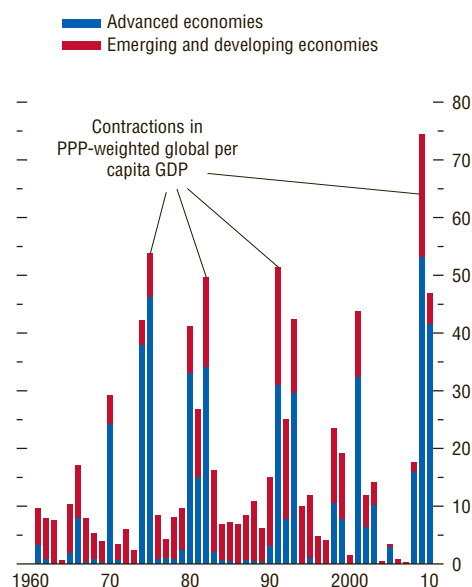
The period 2006–07 stands out as one in which the number of countries in recession was at a historical low. However, it is being followed by a sharp reversal in fortune. In 2009, almost all the

⁸Countries are weighted by their PPP weights; hence, the countries that are larger in economic size receive a greater weight in this figure.

advanced economies are expected to be in recession. The degree of synchronicity of the current recession is the highest to date over the past 50 years. Although it is clearly driven by declines in activity in the advanced economies, recessions in a number of emerging and developing economies are contributing to its depth and synchronicity.

To summarize, the 2009 forecasts of economic activity, if realized, would qualify this year as the most severe global recession during the postwar period. Most indicators are expected to register sharper declines than in previous episodes of global recession. In addition to its severity, this global recession also qualifies as the most synchronized, as virtually all the advanced economies and many emerging and developing economies are in recession.

Countries Experiencing Recessions¹ (Purchasing-power-parity (PPP)-weighted percent of countries)



Source: IMF staff estimates.

¹Data for 2009–10 are based on the WEO forecast.