

Synchronization of Recessions

One of the most distinguishing features of the 2009 global recession was its unprecedented reach, with almost all advanced economies and a significant number of emerging market and developing economies experiencing synchronized contractions in activity. How synchronized are national recessions around global recessions? Are highly synchronized recessions associated with deeper downturns and weaker recoveries? And what happens to financial markets during highly synchronized recessions?

GLOBALIZATION AND SYNCHRONIZATION

Globalization, which is often associated with rising trade and financial linkages, has gathered momentum over the past three decades. These linkages have become increasingly more forceful in transmitting economic shocks across borders. Indeed, an often repeated view in the media in recent years is that globalization has changed the nature of global business cycles. However, the economic literature is inconclusive about the role globalization plays in the synchronization of national business cycles, as we discuss

in a FOCUS box at the end of this chapter. Against this backdrop, the latest global recession has led to intensive discussions about the severity and duration of synchronized recessions.

The proportion of countries in recession rose sharply during the four global recessions.

SYNCHRONIZATION DURING GLOBAL RECESSIONS

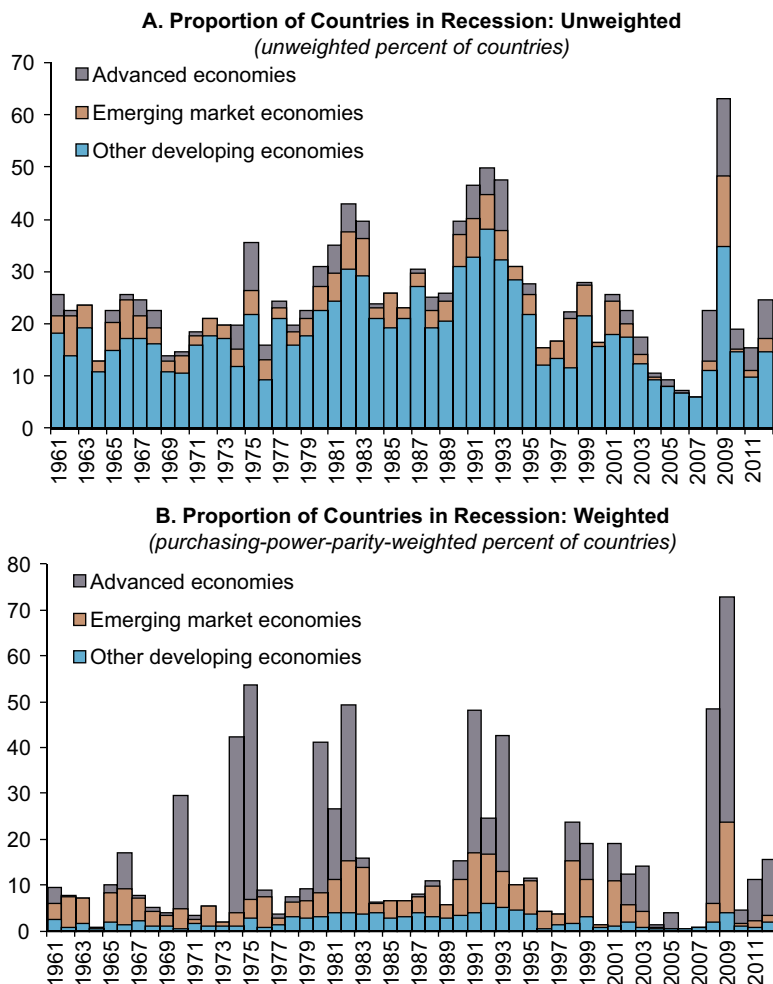
Not surprisingly, the proportion of countries in recession rose sharply during the four global recessions. We measure the extent of synchronization by the proportion of countries in recession in each year (Figure 7.1, panel A). This metric suggests that the proportion of countries in recession reached a local peak during each global recession. Interestingly, this proportion has increased over time: it was close to 40 percent in the 1975 episode and about 65 percent in the 2009 global recession. The proportion of countries in recession started picking up ahead of the recession year. During the 1998 and 2001 global downturns, that proportion was relatively low at about 20–25 percent.

We also consider a measure that tracks yearly fluctuations in the GDP-weighted fraction of countries that experienced a decline in real GDP. Since countries are weighted by their purchasing power parity, those that are larger

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Global recessions have become increasingly synchronized.

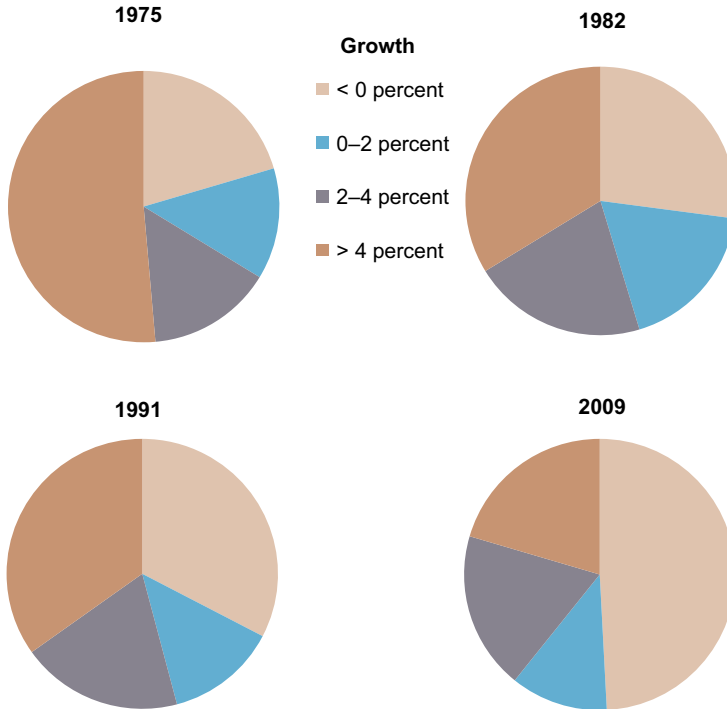
FIGURE 7.1
Synchronization of Recessions



Note: Panel A shows the proportion of countries in recession, defined as a contraction in GDP (unweighted). Panel B shows the purchasing-power-parity-weighted proportion of countries in recession, defined as a contraction in GDP. Data are in annual frequency and include 163 countries. Global recession years are 1975, 1982, 1991, and 2009.

in economic size receive a greater weight with this measure (Figure 7.1, panel B). The weighted fraction of countries in recession was about 50 percent in the first three global recessions, but rose to more than 75 percent in the latest episode.

In addition, we study the growth distribution of economies during global recessions and recoveries (Figures 7.2 and 7.3). The 2009 global recession stands out as the most painful; more than 60 percent of countries grew by less than 2 percent a year.¹ The distributions of average growth during the recoveries (the first three years after a recession) suggest that the recoveries after the

FIGURE 7.2**Global Recessions: Distribution of Output Growth** (*percent of countries*)

Note: Each chart represents the fraction of countries with various annual growth rates during the respective global recession years. The sample includes 163 countries.

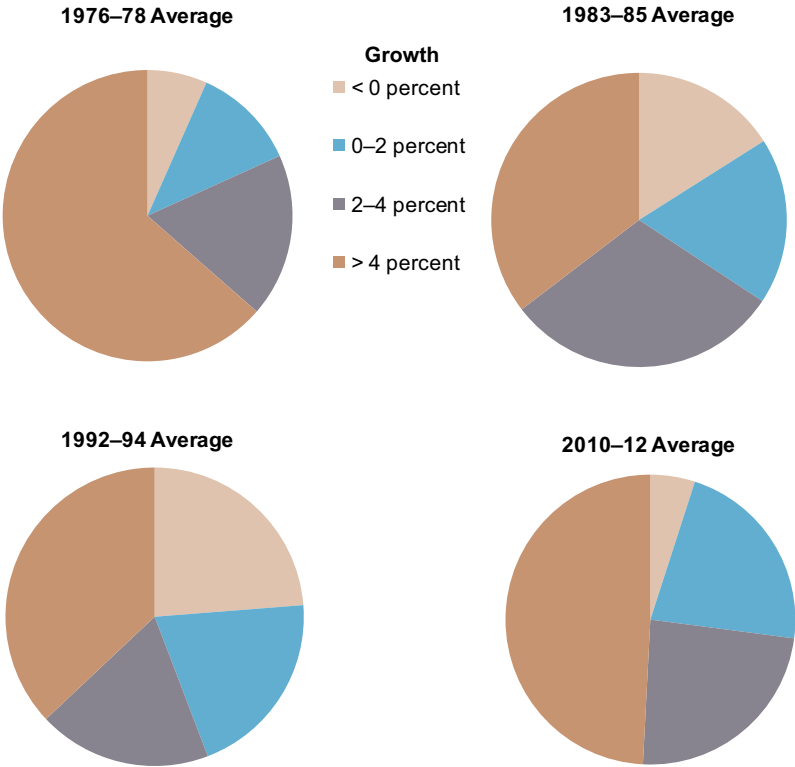
1975 and 2009 episodes were associated with better cross-sectional growth outcomes.

Declines in output in advanced economies largely drove the 1975 recession, but emerging market and developing economies played a role in the other episodes. In 1982, recessions in many Latin American countries contributed to the decline in global activity, whereas in 1991 declines in the eastern European transition economies worsened the performance of the world economy. The 1991 recession was a multiyear episode in which the 1990–91 U.S. recession was followed by recessions among European countries during the European Exchange Rate Mechanism crisis. In both the 1982 and 1991 episodes, the number of countries in recession remained high in the aftermath of the global recession.

The 2006–07 period stands out for the historically low number of countries in recession. However, this was followed by a sharp reversal of fortune. In 2009, almost all advanced economies and roughly half the emerging market and developing economies were in recession. The degree of

In 2009, almost all advanced economies and roughly half the emerging market and developing economies were in recession, reflecting the depth of the global financial crisis and much stronger international trade and financial linkages.

FIGURE 7.3
Global Recoveries: Distribution of Output Growth (*percent of countries*)

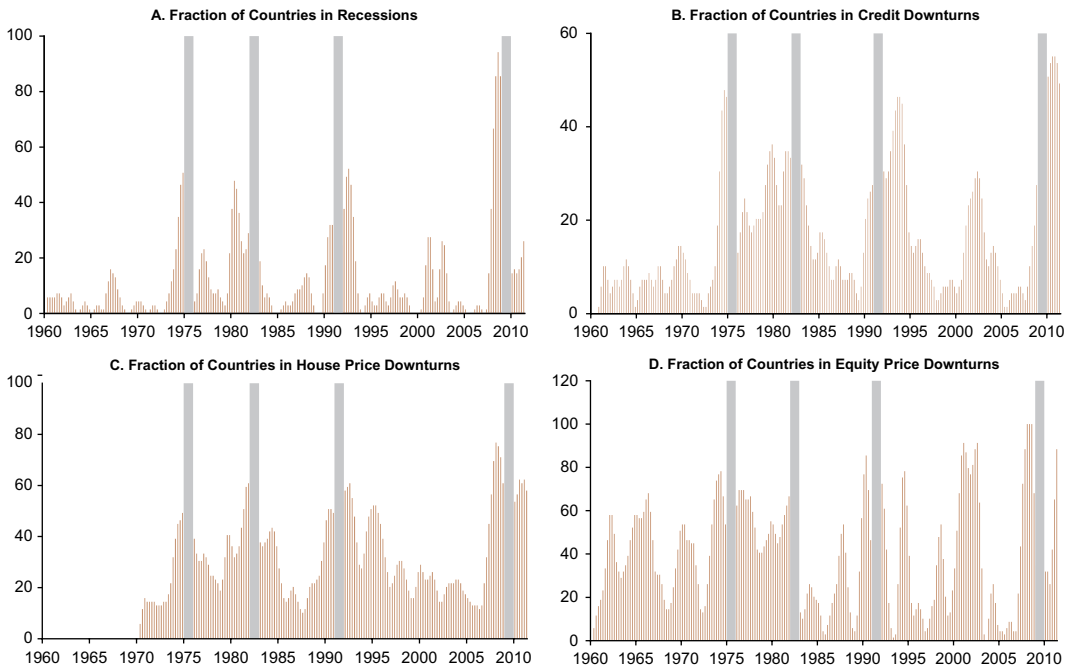


Note: Each chart represents the fraction of countries with various annual growth rates during the respective global recovery years. The sample includes 163 countries.

synchronicity of this recession was the highest during the past 50 years, possibly reflecting the depth of the global financial crisis and much stronger international trade and financial linkages.² Even though the 2009 global recession was clearly driven by sharp declines in activity in advanced economies as a result of the global financial crisis, recessions in a number of emerging market and developing economies also contributed to its depth and synchronicity.

**WHEN SYNCHRONIZED, RECESSIONS ARE DEEPER
AND RECOVERIES ARE WEAKER**

Are highly synchronized recessions different from others? Yes, for at least three reasons. First, it is not possible to rely on external demand for growth during synchronized recessions with a number of countries simultaneously suffering from weak demand. Second, the major advanced economies typically contract during synchronized global recessions, which can affect expectations about future global growth and further depress consumption and investment.

FIGURE 7.4**Synchronization of Recessions and Financial Downturns (in percent)**

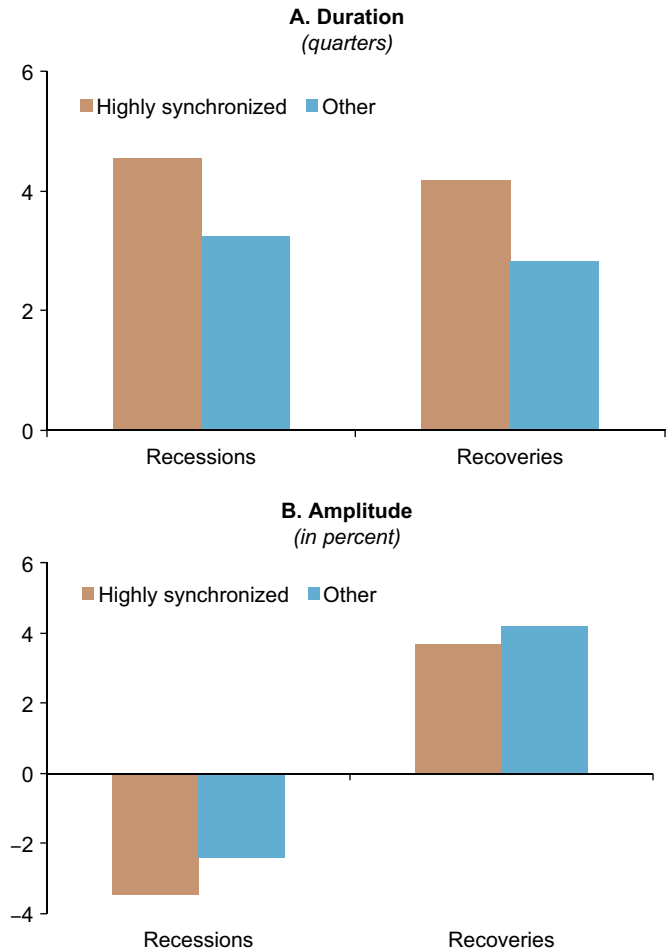
Note: Each bar represents the share of countries experiencing recessions or financial downturns. The figures include complete as well as ongoing episodes. The sample contains the quarterly data for advanced economies. Global recession years (1975, 1982, 1991, and 2009) are shaded in gray.

Third, synchronized recessions often coincide with severe disruptions in financial markets. Credit conditions tighten and asset prices drop, weakening the balance sheets of households, corporations, financial institutions, and sovereigns. This, in turn, hurts consumption and investment and causes output to decline sharply.

To analyze whether synchronized recessions are different, we use quarterly data for a core set of advanced economies. This data set provides a sharper picture of the duration and amplitude of recessions. Highly synchronized recessions are defined as those in which 10 or more of the 21 advanced economies in our sample are simultaneously in recession.³ As expected, highly synchronized recessions in advanced economies are also closely aligned with the global recessions (Figure 7.4). Highly synchronized recessions are longer and deeper than others: the average duration of a highly synchronized recession is 40 percent and its amplitude is 45 percent greater than those of other recessions (Figure 7.5).

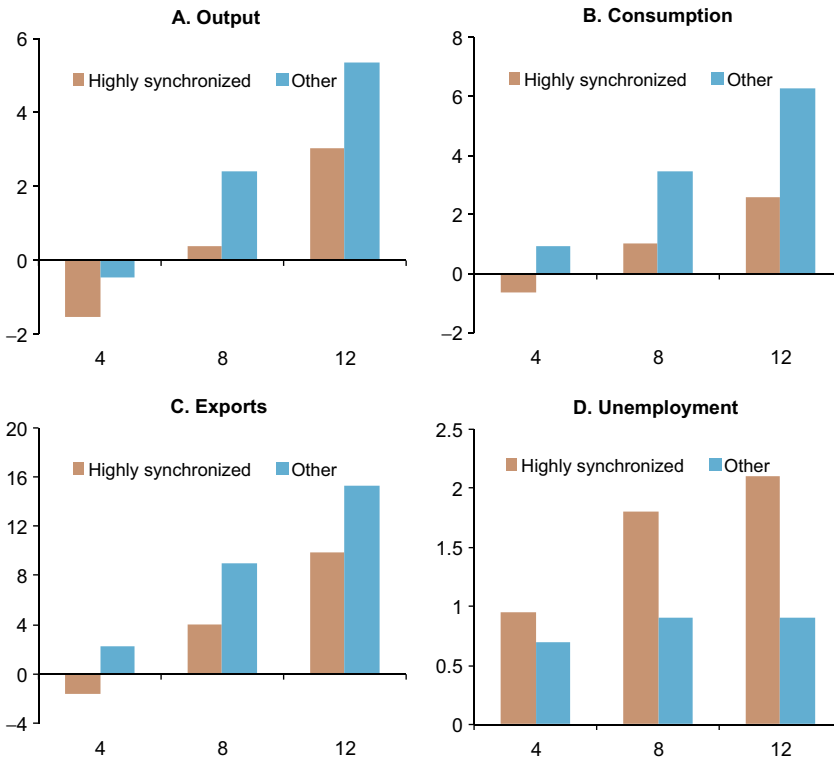
Recoveries from synchronous recessions are very slow on average, with output taking 50 percent longer to attain its previous peak than recoveries after other recessions (Figure 7.6). In highly synchronized recessions, it is

FIGURE 7.5
Highly Synchronized Recessions: Duration and Amplitude

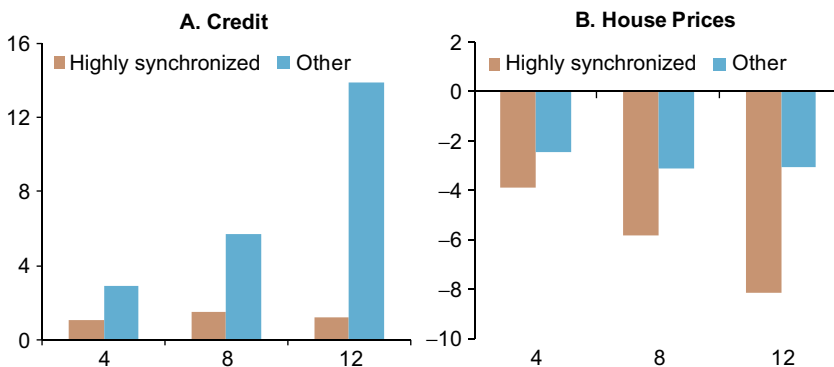


Note: The duration of a recession is the number of quarters from peak to trough. The duration of a recovery is the number of quarters it takes output to reach the level of the previous peak starting from the trough. The amplitude of a recession is the change in output from peak to trough, whereas the amplitude of a recovery is the change in output in four quarters following the trough. Duration refers to the average of all episodes, and amplitude is the median of all episodes. Highly synchronized recessions are defined as those during which 10 or more of the 21 advanced economies in the sample are in recession at the same time.

difficult for an aggregate recovery to be driven by a turnaround in net exports. Private consumption stagnates, investment growth declines, and the rate of unemployment remains high for an extended period. Exports are typically more sluggish, and financial markets struggle after highly synchronized recessions (Figure 7.7). Credit growth also stays weak, unlike during other recoveries when credit and investment growth often recovers rapidly.⁴

FIGURE 7.6**Highly Synchronized Recessions: Activity Variables (in percent)**

Note: All figures except unemployment show the median cumulative change in the respective variable after the indicated number of quarters from the time of the peak of output. The unemployment figure shows the median difference in the unemployment rate from the level of the unemployment rate at the peak of output. Highly synchronized recessions are defined as those during which 10 or more of the 21 advanced economies in the sample are in recession at the same time.

FIGURE 7.7**Highly Synchronized Recessions: Financial Variables (in percent)**

Note: These figures show the median total change of the respective variable after the indicated number of quarters (horizontal axis) from the time of the peak of output. Highly synchronized recessions are defined as those during which 10 or more of the 21 advanced economies in the sample are in recession at the same time.

SYNCHRONIZATION OF FINANCIAL DOWNTURNS

Economists have long studied the interactions between different types of cycles and that research has had important policy implications. For example, extensive study of the linkages between business cycles and inflation cycles has led economists to warn of the risks of higher inflation if monetary policy is lax and an economy is producing more goods and services than its potential. Conversely, economists warn of deflation if monetary policy is tight and the level of economic activity is less than its potential.

The recent global financial crisis has shifted attention away from the previous focus on the linkages between business cycles and inflation cycles and toward the effects and policy implications of cycles in financial markets. A number of advanced economies experienced booms in credit availability, housing, and equity prices during the upturn in the financial cycle prior to the crisis, with the global economy putting in its best performance of the past four decades. At the same time, however, risks were building, and the subsequent downturn of the cycle was dramatic, with severe credit crunches and asset price busts leading to the deepest global recession since the Great Depression of the 1930s.

Indeed, global recessions, especially the last three episodes, coincided with financial disruptions and crises in a number of countries ([Figure 7.4](#), [Appendix D](#)).⁵ This is also evident in the fact that the proportion of countries experiencing recessions around the world is highly correlated with the fraction of those going through credit contractions or downturns in housing markets ([Figure 7.4](#)).⁶

In particular, synchronized credit contractions are closely associated with global recessions. House price declines are also highly synchronized across countries, especially during periods of global recessions. Equity prices exhibit the highest degree of synchronization, reflecting the extensive integration of financial markets. However, the popular saying that “Wall Street has predicted nine of the last five recessions” resonates here, as the proportion of countries experiencing bear equity markets frequently exceeds the proportion of countries in a recession.⁷

What are the implications of this coincidence of financial cycles across countries? Synchronized downturns have more adverse implications than other downturns. For example, in highly synchronized downturns, equity prices drop by about 40 percent, compared with 18 percent for other downturns.

When one financial variable experiences a synchronized downturn, other financial aggregates also perform worse. House prices drop much more during synchronized credit downturns, while credit grows less during synchronized housing downturns. It is well known that globally synchronized downturns tend to result in much larger declines in equity prices, and our findings extend this observation to other financial market segments.⁸

FROM SYNCHRONIZATION TO CRISES

Given the highly synchronized nature of the four global recessions, it is no surprise that these were periods of collapse for the world economy. The 2009 global recession was a true collapse with an unprecedented degree of synchronization. This was one of the main explanations for its depth and the weakness of the ensuing recovery. A number of studies also argue that the 2007–08 global financial crisis played a major role in shaping the recession and recovery. We study this issue next.

FOCUS

LINKAGES BETWEEN GLOBALIZATION AND SYNCHRONIZATION

There is no consistent theoretical prediction across different models about how globalization affects the degree to which business cycles are synchronized.⁹ The effects of trade and financial integration depend, in different models, on the level of development, the nature of shocks, and the pattern of specialization.

Trade Linkages

International trade linkages generate both demand- and supply-side spillovers across countries, which can increase the degree of business cycle synchronization. For example, on the demand side, an investment or consumption boom in one country can increase demand for imports, boosting economies abroad. On the supply side, a positive shock to output in tradable goods leads to lower prices; hence, imported inputs for other countries become cheaper.

However, both classical and “new” trade theories imply that increased trade linkages lead to increased specialization. How does this affect the degree of synchronization? The answer depends on the nature of specialization (intra- versus interindustry) and the types of shocks (common versus country specific). If stronger trade linkages are associated with increased interindustry specialization across countries, then the impact of increased trade depends on the nature of shocks. If industry-specific shocks are more important in driving business cycles, then the degree of international business cycle synchronization should decrease (Krugman 1993). If common shocks, which might be associated with changes in demand and/or supply conditions, are more dominant than industry-specific shocks, then this would lead to a higher degree of business cycle synchronization (Frankel and Rose 1998).

Financial Linkages

The effects of financial integration on cross-country correlations of output growth are also ambiguous in theory. Financial integration could reduce cross-country output correlations by stimulating the specialization of production through the reallocation of capital in a manner consistent with the comparative advantage of countries. However, financial linkages could result in a higher degree of business cycle synchronization by generating large demand-side effects as the changes in equity prices affect the dynamics of wealth. Furthermore, contagion effects transmitted through financial linkages could also increase cross-country spillovers of macroeconomic fluctuations (Claessens and Forbes 2001; Forbes 2013).

Recent empirical studies are unable to provide a concrete explanation for the impact of stronger global linkages on the synchronization of business cycles. Some employ cross-country or cross-region panel regressions to assess the role of global linkages in explaining the degree of the synchronization of business cycles in advanced economies (Kose and Yi 2006). While Imbs (2004) finds that the extent of financial linkages, sectoral similarity, and the volume of intra-industry trade all have a positive impact on business cycle correlations, Baxter and Kouparitsas (2005) and Otto, Voss, and Willard (2001) document that international trade is the most important transmission channel for business cycle fluctuations.

Kose, Prasad, and Terrones (2003a) find that both trade and financial linkages have a positive impact on cross-country output and consumption correlations. Imbs (2006) reports that financial linkages lead to higher output and consumption correlations in advanced economies. This effect appears to be much smaller for developing economies (Kose, Prasad, and Terrones 2003a). Jansen and Stokman (2004) find that countries with stronger foreign direct investment linkages had more correlated business cycles in the second half of the 1990s. Kalemli-Ozcan, Papaioannou, and Peydró (2013) report a strong negative effect of banking integration on the degree of output synchronization during tranquil times.

In sum, there is empirical evidence suggesting that both trade and financial linkages tend to increase the degree of business cycle synchronization. However, the impact of such linkages on synchronization is also influenced by the composition of trade and financial flows, the nature of shocks, and country-specific features.