How Much Decoupling? How Much Converging?

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Business cycles may well be converging among industrial and emerging market economies, but the two groups appear to be decoupling from each other

THE global economic landscape has changed dramatically in recent decades. One driving force has been rising economic integration as global trade and financial linkages have multiplied. In the past two decades alone, the total volume of international trade has more than tripled, and the volume of cross-border financial flows has increased more than ninefold.

The second major force has been the rising prominence of emerging market economies. Although the United States remains the world's largest and most influential economy, the emerging markets have come into their own over the past decade. Based on new data that adjust for differences in the purchasing power of national currencies, the emerging markets as a group account for nearly 40 percent of total world output, up from 25 percent two decades ago. With their increasing economic clout and faster growth than in the major industrial economies, the emerging markets have become major contributors to world growth. Remarkably, in 2007, China's contribution to global GDP growth, measured at market exchange rates, was by itself

larger than that of the United States. The emerging markets together accounted for the bulk of global growth over 2000–07 (see Chart 1).

These dramatic changes in the world economic order have prompted questions about the relevance of the conventional wisdom that when the U.S. economy sneezes, the rest of the world catches a cold. Indeed, a fierce debate is raging about whether global business cycles are *converging* or whether emerging markets have managed to *decouple* from fluctuations in U.S. business cycles. The conventional wisdom is coming into question because emerging market growth has continued to be strong despite relatively tepid growth in the United States and a number of industrial countries (see Chart 2). Some observers have even argued that the United States and other industrial countries have themselves become more dependent on demand from the fast-growing emerging markets.

There is no doubt that financial markets around the world are closely tied together, and shocks in one part of the global financial system can and often do have large and immediate effects on other parts of the system. But whether the increasing spillovers of financial market shocks really translate into tighter business cycle linkages—that is, spillovers in terms of real macroeconomic variables, such as GDP—remains an open question. The jury is still out on whether deeper and more interlinked financial markets reduce vulnerabilities on the real side of the world economy or simply serve as a mechanism for magnifying shocks and intensifying their effects. From the point of view of international macroeconomic and financial stability, this question is of considerable importance. It also has implications for policymakers as they try to calibrate their policy responses to shocks emanating from other countries.

What should we expect? On the one hand, the closer economic linkages among the emerging markets and industrial countries should tie their business cycles more closely together. On the other hand, the fact that emerging markets have themselves become engines of global growth suggests that developments in the United States and other industrial countries should have smaller spillover effects because growth in the emerging markets partly insulates the world business cycle from downturns (and booms) in the industrial countries. These are both plausible stories, so the issue can be settled only by examining the data.

With the U.S. economy on the verge of (or perhaps already in) a recession, this debate has taken on a sharp edge. Concerns about possible international spillover are reverberating, heightened by the rapid spillover of shocks across world financial markets, as seen in the global implications of the difficulties in U.S. mortgage markets.

In this article, we adopt a novel approach to tackle the question of whether international business cycle fluctuations have experienced greater convergence or decoupling. And we come up with an unexpected and surprising answer. While our study is based on historical data (1960–2005), the analysis reveals some intriguing patterns in the data that are relevant to the present debate.

Measuring business cycles

The conventional approach to measuring business cycles is to look at fluctuations of national output, or GDP, around a steady trend rate of growth. Of course, even this underlying trend rate of an economy's growth can change over time, making it difficult to pin down turning points of business cycles. Moreover, output is only one indicator of economic activity.

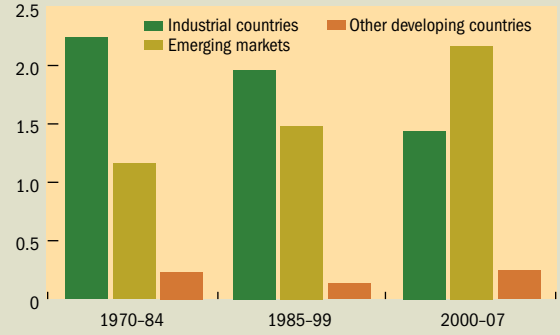
There is a long tradition of using a larger set of macroeconomic variables to discern the turning points of national business cycles. Indeed, the official arbiter of U.S. business cycles—the National Bureau of Economic Research's Business Cycles Dating Committee—looks not just at GDP but also at

Chart 1

Growing economic clout

Emerging markets have become drivers of global growth.

(contributions to global growth, at PPP exchange rates; period averages, percent)[1]



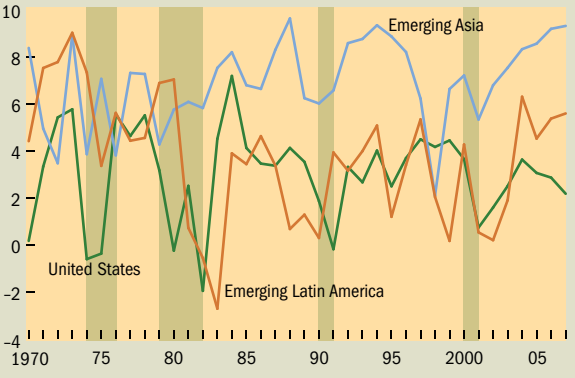
Sources: IMF, World Economic Outlook database, and staff estimates.
[1]PPP = purchasing power parity.

Chart 2

New conventional wisdom?

Emerging markets used to catch a cold when the United States sneezed, but things appear to be changing in recent years.

(real GDP growth; annual percent change)[1]



Sources: IMF, World Economic Outlook database, and staff estimates.
[1]Periods of U.S. recessions are shaded.

industrial production, employment, income, and wholesale-retail sales to determine the state of U.S. business cycles.

We adopt a similar approach in that our methodology allows us to simultaneously analyze fluctuations in three key macroeconomic variables for each country: output, consumption, and investment. This helps us obtain more precise and robust estimates of global and national business cycles.

"The most striking result is that the relative importance of global factors has waned over time for fluctuations in both industrial countries and emerging markets."

Even if one can pin down business cycles conclusively, there is an ancillary question about whether those fluctuations are accounted for domestic factors (for example, monetary or fiscal policy) or external factors. External factors could be global shocks, such as large changes in oil prices, or they could emanate from a large country, such as the United States, and spill over to other countries. How can one disentangle these different sources of business cycle fluctuations?

We implement a relatively new econometric methodology for separating out the factors driving national business cycles into global, group-specific, and country-specific factors. This methodology is able to capture spillovers of business cycle fluctuations across countries without making any strong assumptions about the size, direction, or time pattern of the spillovers. The global factor represents fluctuations that are common to all countries and all three variables in each country. The group-specific factor captures fluctuations that are common to a particular group of countries. The country-specific factor accounts for the fluctuations that are common across all three variables in a given country but that are specific to that country.

We implement this methodology on a data set that is more comprehensive than that used in most previous studies of international business cycles. Our data set contains 106 countries, which together account for more than 90 percent of world output, and covers the period 1960–2005. We divide our sample of countries into three groups—23 industrial economies, 24 emerging market economies, and 59 other (low-income) developing economies. The emerging markets are those in the Morgan Stanley Emerging Markets Index, although we do not include the transition economies (which had poor data availability until the 1990s) and include Hong Kong SAR, Singapore, and Venezuela. The distinction between the two groups of non-industrial countries, which are often lumped together, turns out to be important for our analysis.

What matters for business cycles?

We first explore the relative importance of different factors for business cycle fluctuations over the period 1960–2005. Rather than showing the results separately for each country, we show the averages for each country group or, when we look at a specific variable, the average across all countries for that variable.

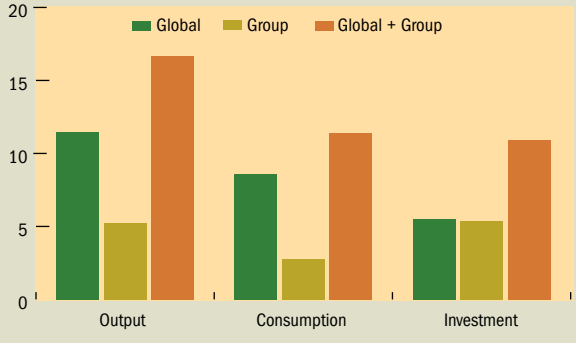
The common factors—the global factor and the respective group-specific factors—account for a significant share of world business cycle fluctuations (see Chart 3). Together, they account for about 17 percent of output fluctuations, on average. This figure may seem low but is quite remarkable given the large and diverse group of countries in our analysis, and given that we are measuring common fluctuations in three macroeconomic variables. The importance of com-

Chart 3

Common factors at play

Common factors account for a sizable fraction of business cycle fluctuations, confirming the existence of a world business cycle.

(average share of business cycle fluctuations, percent)



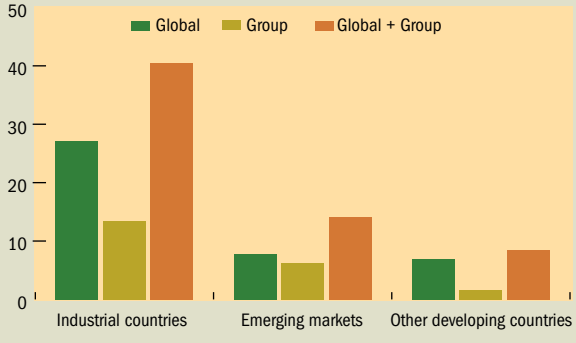
Source: Kose, Otrok, and Prasad (2008).

Chart 4

Integration matters

The global factor matters most for explaining output growth in industrial countries.

(average share of fluctuations in output growth, percent)



Source: Kose, Otrok, and Prasad (2008).

mon factors in explaining national business cycles implies that there is indeed a "world business cycle."

Interestingly, the share of output fluctuations explained by the common factors is greater than the corresponding share of consumption fluctuations. This is an unexpected finding because, according to standard economic theory, globalization should allow countries to diversify their income sources and allow their consumption growth rates to be more closely correlated than their GDP growth rates. That is, consumption fluctuations should be driven more by common factors than are output fluctuations. However, our result is consistent with other recent evidence that financial globalization has not yet enabled emerging markets and other developing countries to attain better risk-sharing outcomes.

The average share of fluctuations in output growth explained by the global factor is largest for industrial countries (see Chart 4). This is as expected because the group of industrial economies is the most integrated with world trade and finance. Global factors are less important, on average, for emerging market business cycles and matter very little for fluctuations in other developing countries.

Changing patterns

Has the relative importance of different factors shifted in response to rising global integration over the past two decades? To examine this issue, we split the sample into two periods: 1960–84 and 1985–2005. Global integration, in terms of both trade and financial flows, really took off in the mid-1980s, when a number of countries intensified their efforts to liberalize cross-border flows of goods and capital. For example, over the past two decades, the share of countries that have lifted restrictions (such as tariffs and quotas) on trade has increased from 20 percent to nearly 70 percent in our sample. The share of those that have lifted controls on cross-border capital flows has jumped from 30 percent to 80 percent. These developments have led to a dramatic increase in global trade and financial flows, both in absolute terms and relative to world income since the mid-1980s, making this a reasonable cutoff point for dividing the sample into two periods: pre-globalization and globalization.

Recall that the convergence hypothesis suggests that the importance of the global factor should be rising over time, whereas the decoupling hypothesis predicts that it should be declining. What do we find? The most striking result is that the relative importance of global factors has waned over time for fluctuations in both industrial countries and emerging markets (see Chart 5). For industrial countries, the average contribution of the global factor falls dramatically, from 28 percent to 9 percent. The decline is also large for emerging market economies: from 13 percent to 4 percent. By contrast, group-specific factors have become more important in both of these groups, almost exactly offsetting the decline in the global factor's importance. The relative contributions of the group-specific factor rise from 17 percent to 31 percent for industrial countries and from 3 percent to 9 percent for emerging markets. Thus, there has been a convergence of business cycles within the groups of industrial countries and emerging markets but a decoupling of business cycles between the two groups.

A useful measure of the extent of business cycle synchronization around the world is the sum of the variance shares of the global and group-specific factors. The overall importance of these two common factors has remained quite stable for all three groups of countries. In other words, international business cycle synchronicity has not changed, but the level at which cycles are synchronous has shifted from the global level to the level of specific country groups.

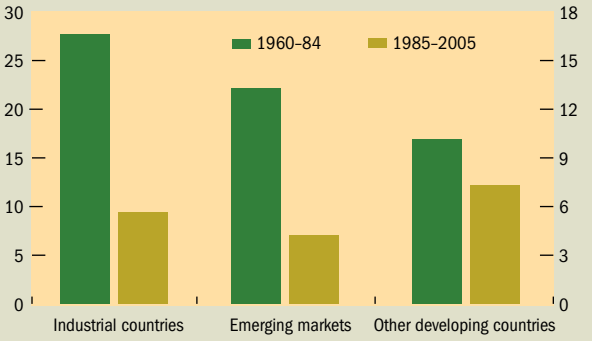
We obtained similar results when we looked at consumption and investment fluctuations. We also examined the sensitivity of our results to ensure, for instance, that our results are not driven only by episodes of crisis or by a small group of countries (such as those in Asia). We also made sure that the results are not sensitive to whether we shifted the year in which we divided our sample into pre-globalization and globalization periods.

Chart 5

A mixed bag

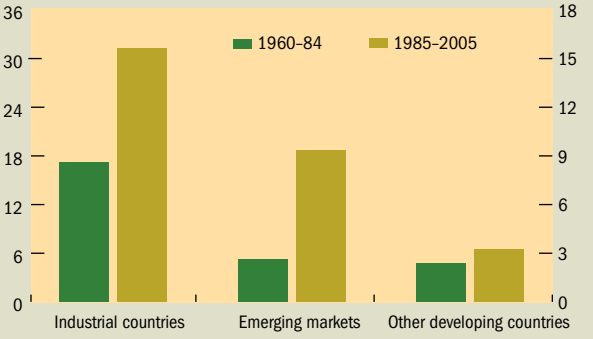
The global factor has become less important in explaining fluctuations in business cycles . . .

(average output variance explained by global factor, percent)



. . . but factors specific to each group of countries have become more important.

(average output variance explained by group-specific factors, percent)



Source: Kose, Otrok, and Prasad (2008).
Note: Variance shares for industrial countries are on the left scale, and those for emerging markets and other developing countries are on the right one.

Finally, rather than look only at averages for groups of countries, we looked at individual country results. The results discussed above are even more persuasive at the country level—the relative importance of the global factor declines and that of the respective group-specific factor increases for a majority of the industrial and emerging market economies. For example, among industrial countries, the variance contribution of the global factor drops from the first period to the second for 16 countries, remains unchanged for 6 others, and increases for only 1 country. The picture is reversed for the relative importance of the group-specific factor, which goes up for 13 countries and declines for 2. These patterns are quite similar when we look at emerging markets as well, with the relative importance of the global factor declining for 12 countries and going up for only 2 of them. The relative importance of the group-specific factor, by contrast, rises for 14 emerging markets and declines for none of them.

Shedding light on the results

To begin with, there were a number of large global shocks during 1960–84: the two oil shocks and the synchronized disinflationary episode of the 1980s. But from the mid-1980s onward (globalization period), there have been fewer large common shocks, and their role in explaining international business cycle fluctuations has declined.

In addition, linkages within groups have strengthened. First, integration within the groups of industrial countries and emerging markets has outpaced broader integration. In particular, the share of intragroup trade has nearly doubled in the total trade of emerging markets over the past two decades. There has been a concomitant decline in the share of emerging markets' trade accounted for by their trade with industrial countries. In fact, emerging markets' trade with the group of industrial countries as a share of the emerging markets' total trade has declined from 70 percent to 50 percent. Second, financial linkages among countries within each group have also been getting stronger over time.

Moreover, patterns of diversification of production and trade have evolved in a manner that has resulted in a greater degree of similarity of sectoral structures of output across countries within each group. With these changes, group-specific shocks have become more important in explaining national business cycles in emerging markets and industrial countries. Not surprisingly, the importance of the global and group-specific factors in explaining business cycles in other developing countries, the group least exposed to the forces of globalization, has barely changed over time.

Tie-in to current financial crisis

What are the implications of these results for the debate about whether there has been a global convergence or decoupling of national business cycles? Our findings suggest the need for a nuanced approach to this debate. Contrary to the convergence hypothesis, rising trade and financial integration are not necessarily associated with global convergence of business cycles, as evidenced by the decline in the importance of the global factor. But there is indeed some evidence of convergence at a different level. Greater economic integration among industrial countries and among emerging market economies has been associated with the emergence of group-specific cycles.

"The turmoil in global financial markets in the past half year has clearly shown that, in an age of closely linked financial markets, a prolonged period of financial decoupling is highly unlikely."

In short, there has been a convergence of business cycles among industrial economies and among emerging market economies over time, but there has also been a concomitant divergence, or decoupling, of business cycles between these two groups of countries.

Our findings should not be interpreted as a blanket endorsement of the decoupling hypothesis in the context of recent discussions about the possible spillover effects of a U.S. recession. First, our results are based on a large set of industrial countries, not just on the United States. Second, past episodes of business cycles suggest that a deep and protracted U.S. recession could have much larger spillovers than a mild and short one. Although the secular changes we document here indicate that emerging markets as a group are becoming an independent driver of global growth, their decoupling potential would still depend on the duration and severity of a U.S. downturn.

Moreover, our analysis includes linkages through real macroeconomic aggregates, but does not account for financial ones. In other words, these findings do not speak to the possibility of financial decoupling (or lack thereof). The turmoil in global financial markets in the past half year has clearly shown that, in an age of closely linked financial markets, a prolonged period of financial decoupling is highly unlikely. ■

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This article is based on the authors' forthcoming IMF Working Paper, "Global Business Cycles: Convergence or Decoupling?"