

Taking the Plunge Without Getting Hurt

An IMF study suggests that opening up to the global economy could help developing countries cope with the adverse effects of volatility on growth

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AS A GROWING number of developing countries weigh whether to further integrate with the global economy through closer trade and financial linkages, they must cope with the prospect that greater openness often leads to greater volatility—witness the emerging market financial crises of the 1980s and 1990s. And they must grapple with fears that greater volatility will lead to lower growth. But are these fears justified?

The reality is that economists have yet to fully come to grips with the complex relationship between macroeconomic volatility and economic growth. During the 1980s, it was generally accepted that the impact of volatility on economic growth and welfare was at most minor and that, therefore, volatility was hardly anything to be feared. However, research in the 1990s (by, for example, Garey and Valerie Ramey) reached a strikingly different conclusion—that macroeconomic volatility may actually reduce long-term growth. This was an important result since it implied that policies and economic shocks that increased volatility could hurt economic welfare in the long run by reducing growth.

With the recent financial crises, however, economists have noticed that while the affected countries faced episodes of high output volatility, they actually posted much better than average growth rates during the period of globalization than other developing economies. Does this mean that in a period of rising globalization, the negative relationship between growth and volatility has changed? To shed light on this question, we examined the dynamics of growth and volatility in a large sample of industrial and developing countries over the past four decades. Our findings suggest that the answer depends subtly on the degree and nature of a country's linkages with the global economy, as well as a few other factors, including the country's stage of development.

Analyzing globalization

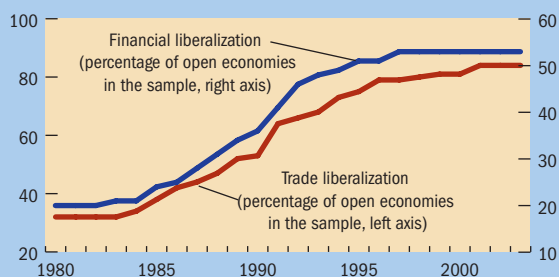
The recent wave of globalization started in earnest in the 1980s. Global trade linkages had already begun to increase significantly in the 1970s, but it was in the 1980s that most developing countries undertook substantial trade liberalization and trade expansion became a more universal phenomenon. The mid-1980s also represent a turning point in the process of financial globalization. A number of industrial and developing economies reduced restrictions on capital flows across their borders, resulting in a sharp increase in international capital flows from industrial countries to developing economies.

To analyze these trends, we compiled a data set comprising 85 countries—21 industrial and 64 developing. Between 1985 and 2000, the share of countries in our data set that had

Chart 1

Expanding globalization

Many countries have liberalized their trade and financial regimes over the past two decades.



Source: Kose, Prasad, and Terrones, 2004.



Unloading containers in Shanghai.

liberalized their trade regimes increased from 30 percent to almost 85 percent. The share of countries with open financial accounts rose from 20 percent to about 55 percent over this period (see Chart 1). Spurred by these liberalizations, the volume of international trade has registered a dramatic increase, with the ratio of world exports and imports to world GDP rising from 75 percent in the mid-1980s to over 150 percent by the end of the 1990s. Private capital flows from industrialized to developing economies have also increased dramatically since the mid-1980s, with the bulk of these flows going to emerging market economies (23 of which are in our data set).

Tracking growth and volatility

How have these trends in globalization affected the growth-volatility relationship? Although economic theory suggests that globalization should have a positive impact on growth, it does not provide strong predictions about its impact on volatility or on the relationship between growth and volatility. Hence, this is essentially an empirical question.

To assess whether globalization has had an effect, we first examine the average relationship between growth and volatility over the last four decades. We use per capita GDP as the measure of output and use annual growth rates in our analysis. To capture macroeconomic volatility, we use a traditional measure—the standard deviation of per capita output growth.

Chart 2 shows that there is a negative relationship between growth and volatility during the period 1960–2000. Interestingly, when we break this relationship down by country groups (see Chart 3), it is far from uniform. The relationship in fact appears positive for industrial economies, indicating that, for economies at an advanced stage of development, volatility is not necessarily associated with lower

growth. Even among developing economies, the relationship is hardly uniform. For emerging markets, the relationship looks positive while it is negative for other developing economies that have not participated as much in the process of globalization.

Since the emerging markets are the ones that have undergone the most significant degree of globalization, it is of interest to examine how trade and financial integration have affected the relationship between growth and volatility over time for this group. For each of these countries, we determined

“Exposure to higher volatility is not by itself a good reason for developing economies to avoid globalization.”

a particular date for trade and financial liberalization respectively, based on country-specific historical descriptions of liberalization episodes. Although most of these dates cluster around the mid-1980s, there is enough diversity across countries to justify using liberalization dates specific to each country.

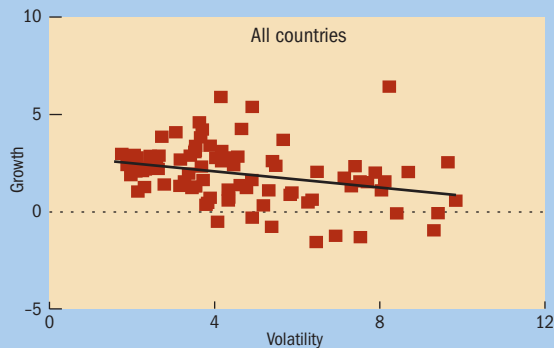
Chart 4 (top row) shows that, for the emerging markets, the relationship between growth and volatility is negative before trade liberalization and positive after. In other words, there is suggestive evidence from these economies that trade integration changes the sign of this relationship. Chart 4 (bottom row) shows a similar, although less strong, result

Chart 2

Negative correlation?

When taking all countries in the sample together, there is a negative association between growth and volatility.

Growth and volatility
(simple correlation, 1960–2000)



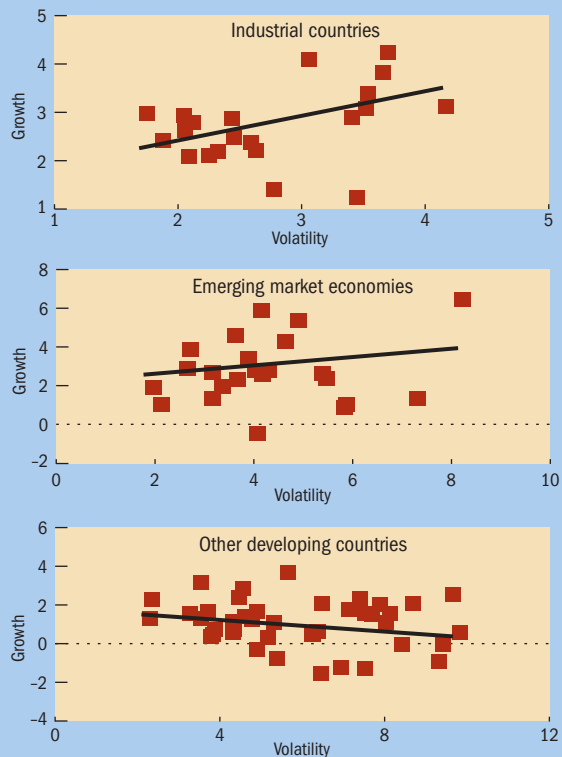
Source: Kose, Prasad, and Terrones, 2004.

Chart 3

Or positive?

But when countries are split into different groups, the relationship between growth and volatility appears positive for both industrial and emerging market economies.

Growth and volatility
(simple correlation, 1960–2000)



Source: Kose, Prasad, and Terrones, 2004.

when one compares the relationship before and after financial liberalization.

Our descriptive analysis so far has suggested two important themes in analyzing the growth-volatility relationship. One is that the level of development appears to matter, as the sign of the relationship varies across different groups of countries. The second is that trade and financial integration affect the nature of this relationship. However, our descriptive analysis has not established whether the differences across countries and over time in the growth-volatility relationship are robust or significant in a statistical sense. In addition, there could be other factors that affect growth and volatility independently as well as the relationship between these two variables. Hence, we now examine the growth-volatility association using a more formal statistical framework.

Effects of trade and financial integration

We employ a regression model to analyze how a country's long-term growth is influenced by volatility as well as a number of other variables that have been found to influence growth—such as a country's initial income level, the national investment rate, population growth, and the fraction of the population that has at least a primary-level education. We also include measures of trade and financial integration—in both cases, first whether or not liberalization has taken place, and second, a de facto measure of openness (the ratio of a country's total external trade to GDP and the ratio of gross capital flows for a given country to its GDP).

When we include all of these other potential determinants of growth in the regressions, we find on average that volatility is still negatively associated with growth. Consistent with the results from recent research by other authors, we also find that trade integration clearly has a positive effect on growth. However, the effect of financial integration is less obvious.

The major question of interest to us is whether trade and financial integration directly affect the growth-volatility relationship. To get at this issue, we consider the roles played by some "interaction" variables that allow us to measure how changes in each measure of integration affect this relationship. We find that these interaction terms generally have a positive relationship with growth. In other words, although the basic relationship between volatility and growth is negative, higher levels of trade and financial integration make this relationship much weaker, that is, much smaller in absolute terms. The implication of these findings is that economies that are more globalized have the ability to withstand higher levels of volatility without adverse effects on growth.

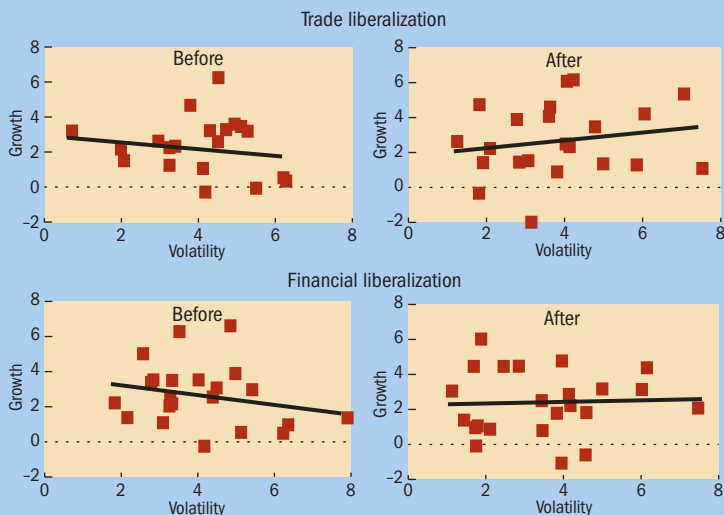
Are the roles played by trade and financial integration significant in terms of economic magnitudes? Interestingly, our data set indicates that, during the 1990s, emerging markets had a similar level of output volatility, on average, as other developing economies but experienced much higher growth. Using the estimated coefficients from our regressions, we find that the higher level of trade openness of emerging markets accounts for about half of the observed difference of about 2 percentage points in average growth rates between

Chart 4

Emerging benefits

For emerging market economies, the nature of the growth and volatility relationship seems to change after trade and financial liberalization.

Growth and volatility in emerging market economies
(simple correlation, before and after liberalization)



Source: Kose, Prasad, and Terrones, 2004.

emerging markets and other developing economies. In other words, despite experiencing a similar level of volatility, the greater degree of trade openness of emerging markets still allowed them to post higher growth rates. We find a similar result for financial integration, which also explains close to half of the observed differences in growth rates between these two groups of countries.

This is, of course, a purely mechanical exercise and our regression framework by itself cannot be taken as providing strong and conclusive evidence of a *causal* relationship between volatility and growth. Nevertheless, it is still interesting to note that most of the difference in the average growth rates in the 1990s between emerging markets and other developing economies, despite their having similar levels of volatility, can be accounted for, in the context of our framework, by the differences in their average levels of trade and financial integration.

We conducted a variety of experiments to check the sensitivity of these results (see Kose, Prasad, and Terrones, 2004). For instance, we use alternative statistical techniques, control for additional factors that could potentially affect either growth or volatility, and also account for the fact that any relationship that we uncover between these variables could simply reflect common factors that affect both of them simultaneously. The basic results discussed above proved to be quite stable across all of these experiments.

What are the channels through which openness to trade could mitigate the adverse impact of volatility on growth? While our study does not address this question, recent

research suggests several possible channels. For example, trade integration could help a developing economy to export its way out of a recession since a given exchange rate depreciation could have a larger impact on its export revenues than in an economy that is less open. Stronger export revenues could also help in servicing external debt, which is quite substantial in a number of developing countries. These factors also suggest that openness to trade flows could make developing countries less vulnerable to sudden halts in international capital flows.

Policy implications

Our analysis has shown that the negative relationship between growth and volatility has persisted in the most recent era of globalization, but with some important qualifications. In particular, trade integration appears to significantly attenuate this negative relationship. Thus, for a given level of volatility, countries that are more open to trade experience higher growth. Or, to put it differently, countries that are more integrated with the global economy through trade linkages appear to be able to tolerate higher levels of volatility without a negative impact on their growth rates. The results are similar, but weaker, for financial integration.

In summary, there are significant benefits to be derived from undertaking enhanced trade integration, notwithstanding the potential associated risks of increased volatility. Building on work by other researchers showing that trade openness is positively associated with growth, our analysis indicates that these benefits are not adversely affected by the increased volatility that appears to be associated with greater trade openness. The effects of financial integration on the growth-volatility relationship are similar, if somewhat less robust in a statistical sense. Overall our research suggests that exposure to higher volatility is not by itself a good reason for developing economies to avoid globalization, as the forces of trade and financial integration could help reduce the adverse impact of volatility on economic growth. ■

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