Global economic integration increases the ability of individuals and firms to undertake economic transactions with residents of other countries. Critics and proponents of globalization generally agree that the world is more integrated now than 50 years ago. But they disagree on whether integration is an opportunity or a danger and whether increasing integration is a strategic choice or an inevitable consequence—for better or worse—of economic and technological change. How much more integrated is the world? Which countries have been included, and which left out? Have new, market-based links (such as investment) replaced old, official ones (such as aid)? The answers to these questions are important for shaping future development strategies, and they depend in part on how integration is measured.

There are two broad approaches to measuring integration: evaluation of the barriers to integration and evaluation of the outcomes of integration. In a fully integrated world there would be no official barriers to negotiating and executing economic transactions—anywhere. And residents of one economy would face no higher transactions costs in another economy than in their own. Barriers to integration begin at the border with tariffs and nontariff barriers but are buttressed by a wide range of domestic policies and practices. Their outcomes can be seen in the volume of trade and capital flows or in the pattern of product and asset prices across countries.

Average tariffs, nontariff barrier coverage ratios, and indicators of capital controls are all useful indicators, and they are frequently cited as evidence of significant reductions in barriers since World War II—especially in the past two decades. But the story they tell may be misleading. Posted tariffs are not always collected. Capital controls can be evaded. Behind-the-border barriers such as domestic regulation, private collusive behavior, and information asymmetries—for which we lack even the simplest quantitative indicators—may be more restrictive. And obstacles to integration extend beyond official actions to include market structures, technology, geography, and access to information.

These difficulties in measuring the barriers to integration lead many to instead measure the outcomes of integration. Such studies focus on the effect integration has on trade or capital flows or product or asset prices. Such indicators suggest that global integration has increased in recent decades, but that considerable segmentation remains between national markets. One difficulty for outcome studies is disentangling the separate influences of the many forces

affecting market outcomes. In what follows we review some of the techniques for measuring global integration. Such efforts may send contradictory signals, however. Globalization is far from complete. No measure—or even group of measures—suffices as an unambiguous indicator of what is occurring. This is especially the case when comparing countries that are only beginning to open their doors to the global market.

Border barriers

Indicators of average tariffs and nontariff barriers help to identify countries that have policies conducive to global integration. But such indicators may be incomplete or misleading. Widespread exemptions or rebates, sometimes granted in response to lobbying, lower effective barriers to well below official rates (figure 6a). Other problems arise in aggregating tariffs on individual products into a summary measure. Simple averages ignore the differing economic importance of product lines, and import-weighted averages understate the significance of the tariffs that have been most successful in reducing imports. Coverage ratios show the share of imports covered by nontariff barriers such as import quotas, but not the restrictiveness of the barriers. And measures based on tariff rates and nontariff barrier coverage ignore the effects of domestic taxes and subsidies, which are often used to replicate trade barriers.

Official controls on international capital movements are even less amenable to direct quantitative measurement or cross-country comparison. Without detailed qualitative analysis of the rules and regulations controlling capital account transactions in each country, often the most that can be said is whether a particular control is used.

Behind-the-border barriers

National standards and regulations can both help and hinder integration. Help because they allow products to be compared on a common basis, lowering the cost of collecting information about the product for consumers and producers and facilitating economies of scale and diffusion of new technologies embodied in standards. Many developing countries lack national standards that are compatible with the international norms developed by such bodies as the International Standards Organization. Moreover, the national institutions responsible for developing standards and assessing conformity are often weak.

But standards and regulations can also frustrate competition—if, say, they apply exclusively to foreign suppliers and require foreign products to undergo more costly health and safety tests. The fact that different countries pursue regulatory objectives in different ways can also handicap multinational firms operating in several countries, relative to those operating in one, by forcing them to comply with different regulations and thus lose economies of scale.

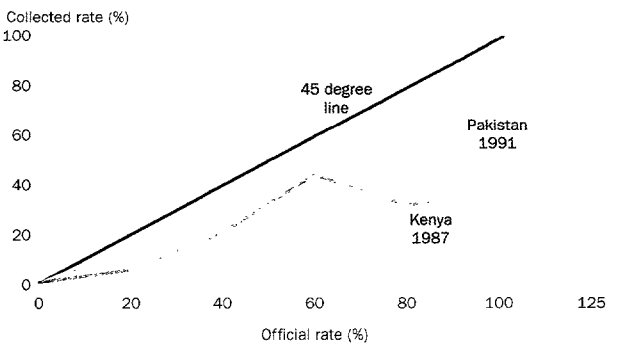
Measuring outcomes

Outcome measures of integration look either at quantities, such as volumes of international trade and capital flows, or at prices, such as product prices or assist prices and yields. Starting with prices, the economist's "law of one price" suggests that in the absence of official barriers, and given a number of other assumptions, arbitrage should lead to equalization of the prices of products or financial assets, when stated in a common currency, wherever traded. But numerous studies have documented large and persistent deviations from the law of one price in product markets, even among narrowly defined and highly traded products. Several reasons have been suggested for the apparent lack of arbitrage in product markets:

- The goods compared are not exactly equivalent.
- Transportation costs drive a wedge between prices in different markets.
- Prices tend to be sticky in the currency in which the product is sold, remaining stable in local currency terms despite swings in nominal exchange rates.
- Tariff and nontariff trade barriers.
- Differences in national product standards—such as differences in electricity voltage or the side of the road on which automobiles are driven—make arbitrage more difficult.
- Noncompetitive market structures.
- The cost of local marketing and retailing. Inefficiencies in retail distribution are often cited as a reason for Japan's high retail prices.

Engel and Rogers (1995) reviewed several of these factors as explanations for price dispersion in a sample of 24 countries. They confirm the importance of distance and exchange rate movements (price stickiness). But they find formal trade barriers to be insignificant. After allowing for these factors, they find price dispersion to be significantly lower between countries in the same

In many countries collected tariffs run well below official rates



Source: World Bank staff estimates.

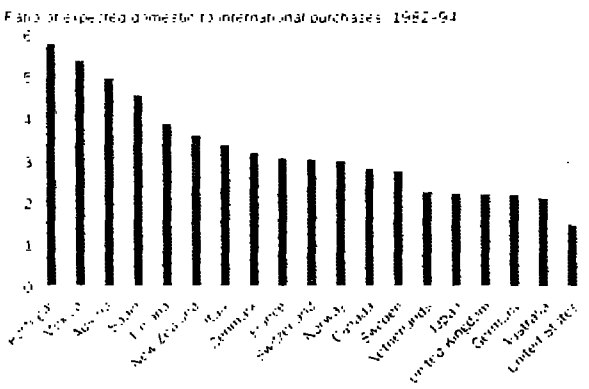
region, such as Canada and the United States or members of the European Union (though not Mexico and the United States or countries in Asia). They suggest that greater price uniformity within regions could reflect more integrated marketing and distribution systems.

Ratios of total trade (exports plus imports) to GDP are the most widely used quantitative measure of product market integration. Before these ratios can be used for cross-country comparisons of integration, they must be adjusted for the influence of structural factors—such as country size, factor endowment, geographic isolation, and stage of development:

- Large countries tend to trade less than small countries because they contain more diversified resources.
- Countries that are well endowed with natural resources, such as oil, export and import more.
- Countries with an abundance of labor, such as those in East Asia, may undertake more processing and assembly trade, with a high content of imported intermediate imports and less value added per dollar of gross output.
- Rich countries appear to be less integrated than they really are because they devote more of their output and consumption to services, which are harder to trade. They also tend to have higher prices for services, which again makes them seem less integrated by their trade-GDP ratios.
- Trade data in gross terms compared with GDP in value added terms can inflate trade-GDP ratios. This problem can be corrected by stating trade in value added terms or domestic product in gross output terms, but such data are available for only a few high-income countries.

Figure 6b

OECD countries prefer to buy at home



Source: Shang-jin Wei 1996

An alternative indicator of trade integration is the "home bias" measure, which aims to provide an all-inclusive summary of barriers to trade. This measure is defined as purchases from domestic suppliers relative to purchases from other countries, after adjusting for such factors as the size of exporter and importer economies, bilateral distance, location of the importing country, and whether the countries share a common language or border. Shang-jin Wei (1996) found that in 1982–94 OECD countries purchased about 2.5 times more from themselves than from otherwise identical foreign countries. The United States has the lowest home bias—statistically indistinguishable from one. Mexico and Portugal have the highest, with domestic purchases running five to six times those from similar foreign countries (figure 6b). The average home bias for OECD countries fell slowly during 1982–94, but the drop was especially marked among EU members.

Shang-jin Wei's study also found that sharing a common language is a big determinant of trade—countries with language ties have 80 percent higher trade than otherwise. A common language greatly reduces the transactions costs associated with gathering information, making contacts, and conducting negotiations. Immigration also may foster trade between industrial and developing countries by helping to overcome obstacles created by weak international trade institutions in developing countries (Gould 1994). Immigrants know the language of their home countries and have detailed knowledge of home country tastes and products. And they often have access to networks of contacts with high levels of mutual trust, lowering the transactions costs of negotiating and enforcing contracts.

Integrating financial markets

When applied to financial markets, the law of one price implies that, with full integration, identical financial assets (except for their currency and political jurisdiction) should have identical prices or yields once exchange rate risk has been hedged or covered in the forward market. Covered interest rate differentials among most industrial countries are now quite small, reflecting extensive capital market liberalization during the 1970s and 1980s. In Europe the Single European Act, passed in 1987, appears to have turned the corner for such countries as France, where covered spreads on three-month interbank deposits fell from more than 200 basis points in 1982–86 to near zero in the early 1990s.

High explicit or implicit barriers to capital movements remain common in most developing countries, however. Among the small number of emerging markets with data on forward exchange rates, covered interest differentials averaged more than 600 basis points in 1982–88.

If all countries can borrow and lend in integrated global capital markets at the same expected real interest rate, there should be no connection between domestic investment and national savings. In other words, the regression coefficient of investment on savings rates—the savings retention ratio—should be zero under complete financial integration. But this ratio is typically much closer to one than to zero, leading some to argue that capital markets are much less integrated than is commonly supposed.

Others deny such a conclusion. They say that savings is an endogenous variable and that both savings and investment reflect common factors—such as the economic cycle or demographic and productivity trends. Budget constraints may place bounds on how far savings and investment can diverge over long periods. In particular, developed economies may be much closer to their desired long-run capital stock than developing countries, which may have many unused investment opportunities and thus require large capital inflows—a feature that also helps explain why developing countries have lower savings retention ratios than developed ones.

Savings retention ratios for industrial countries rose sharply in the 1930s and remained high through the 1950s, a period characterized by extensive capital controls (figure 6c). But by the 1980s these ratios had fallen close to the levels at the end of the 19th century, a period of high capital mobility.

Savings retention ratios have returned to 19th century levels

Source: World Bank staff estimates.

As in product markets, there is no reason for a high degree of financial integration or capital mobility to necessarily result in high gross capital flows. But there are reasons to think that it should (Montiel 1993). For example, with financial integration the geographical location of traders does not matter, so the volume of transactions crossing borders should be high. Moreover, if financial assets in different countries have different risk and return characteristics, individuals can insure themselves against risks to consumption by diversifying their asset portfolios internationally. Thus many countries with low or negative net capital flows with the rest of the world continue to have high two-way gross capital flows.

Although international capital flows have grown rapidly in recent years, they remain well below what financial models suggest should prevail under full international capital mobility. With perfect capital mobility, the proportion of loans by a country's residents that go to domestic borrowers should be about the same as the country's share in global lending (Golub 1990). For a small country whose share in global lending is close to zero, for example, very few loans by domestic residents will go to domestic borrowers. (Conversely, nearly all of the country's borrowing should come from foreign lenders.)

In 1980–86, however, the share of loans by domestic residents that went to domestic borrowers in OECD countries ranged from a low of 60 percent in Belgium to a high of 94 percent in the United States, with an average of 86 percent. In all cases this ratio was much higher than the countries' shares in overall OECD lending, suggesting a strong home bias in international portfolio allocation, similar to that in product markets, though the size of this bias appear to have fallen since the 1970s.

Does the strong home bias in financial portfolios mean that international capital market restrictions have resulted in significant segmentation of national financial markets? This may be a plausible explanation for low holdings of developing country assets in international portfolios, given that financial liberalization in these countries gathered pace only in the 1990s, and then in only a small group of countries. But it is less plausible for home bias among industrial countries, where capital market restrictions would have to be much higher to explain the observed facts. The same can be said about transactions costs, exchange rate risks, and political risks. The fact that foreign assets in investor portfolios are turned over at a significantly higher rate than domestic assets also casts doubt on the idea of high transactions costs as a cause of home bias.

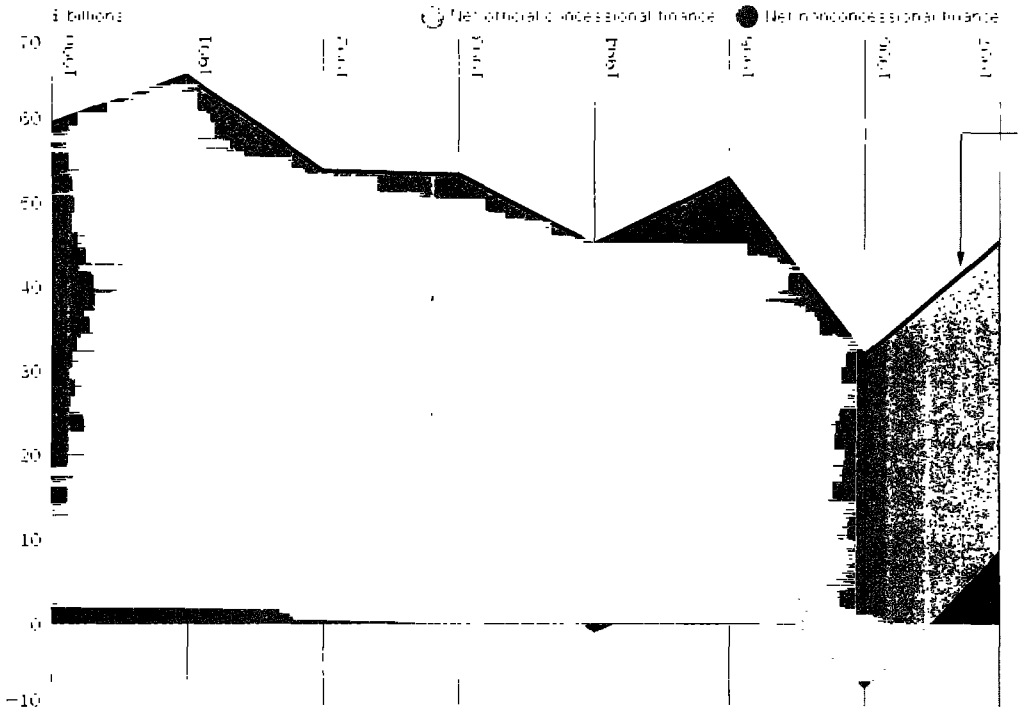
Thus there is an international diversification puzzle. Explanations include the possibility that investor expectations are less than fully rational—that is, investors systematically overestimate returns on domestic assets. Another interesting area of investigation concerns the role of information asymmetries. Gordon and Bovenberg (1996) argue that foreign investors may be handicapped relative to domestic investors by their poorer knowledge of the domestic market. Because they are poorly informed, they are vulnerable to being overcharged when they acquire shares in a firm or purchase inputs and services. They also risk misjudging markets and, therefore, investing real resources less efficiently. For example, foreign investors tend to pay much more than domestic investors to acquire publicly traded U.S. firms, and foreign subsidiaries earn much lower rates of return than domestic firms.

Links and chains

A more integrated world is not without risks. The recent financial crisis in East Asia demonstrates some of the risks, just as the region's spectacular earlier growth demonstrates some of the benefits. As economies become more closely linked, they become more dependent on one another's performance. Failures of management and governance in one economy may be transmitted to another as swiftly as electronic signals. But an integrated world is better able to diversify risk and to provide insurance against disasters, both natural and humanmade.

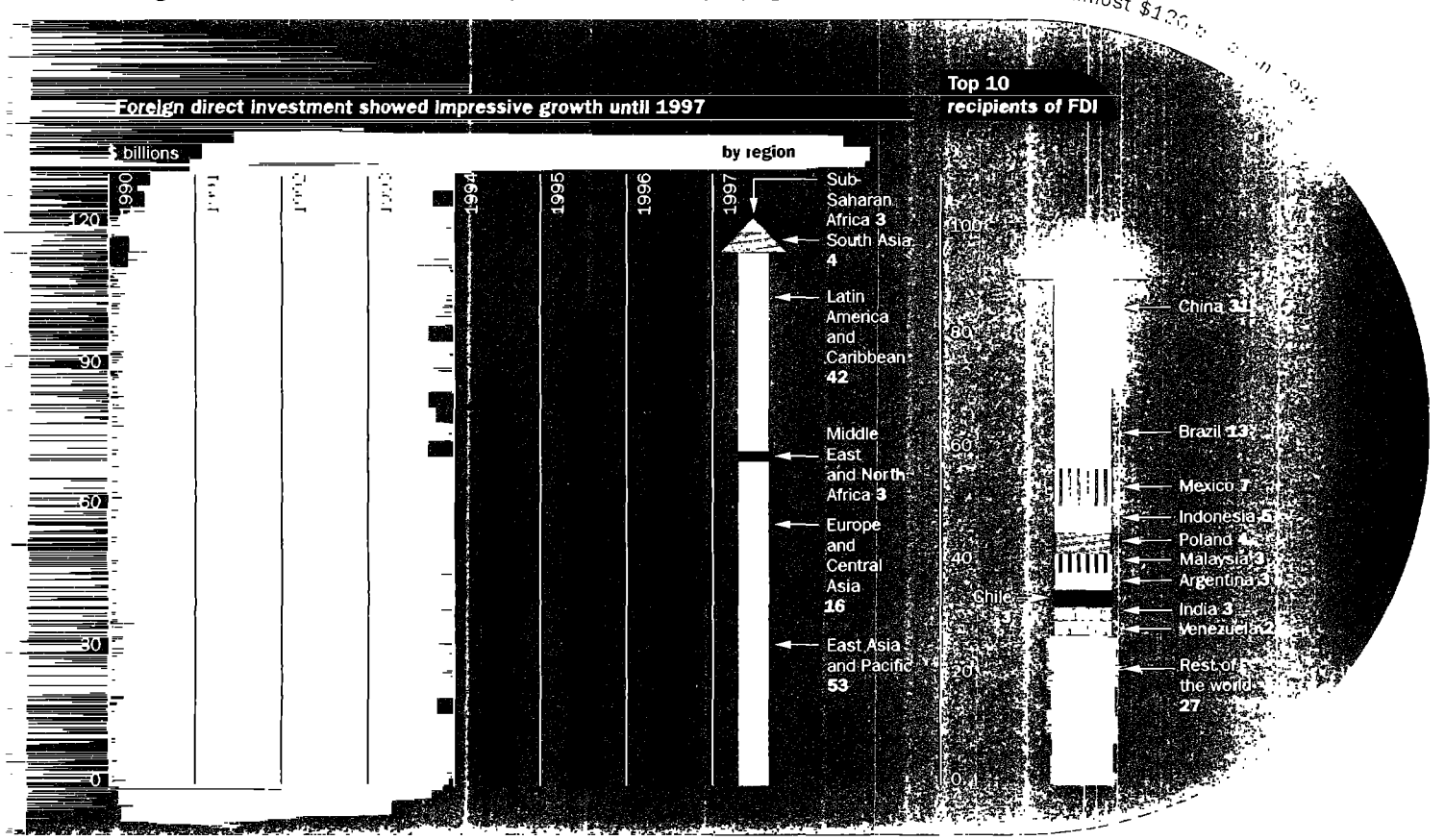
Ultimately, the value of integration must be assessed by its effect on people's lives. An integrated global economy may be more efficient, but it also may be less comfortable for many people. The continuing debates over tariff reductions and capital account liberalization reflect a deep suspicion that the benefits of globalization have been oversold. Concerns about environmental and social protection will also have to be resolved as globalization proceeds. Better measures of policies and their outcomes can inform this debate.

Official development finance flows have declined since 1991



Note: Official concessional finance comprises inflows of official development assistance and official aid to Eastern Europe and the former Soviet Union. The data shown here exclude funding for technical cooperation and flows to high-income economies. Nonconcessional finance comprises net flows from bilateral and multilateral sources.

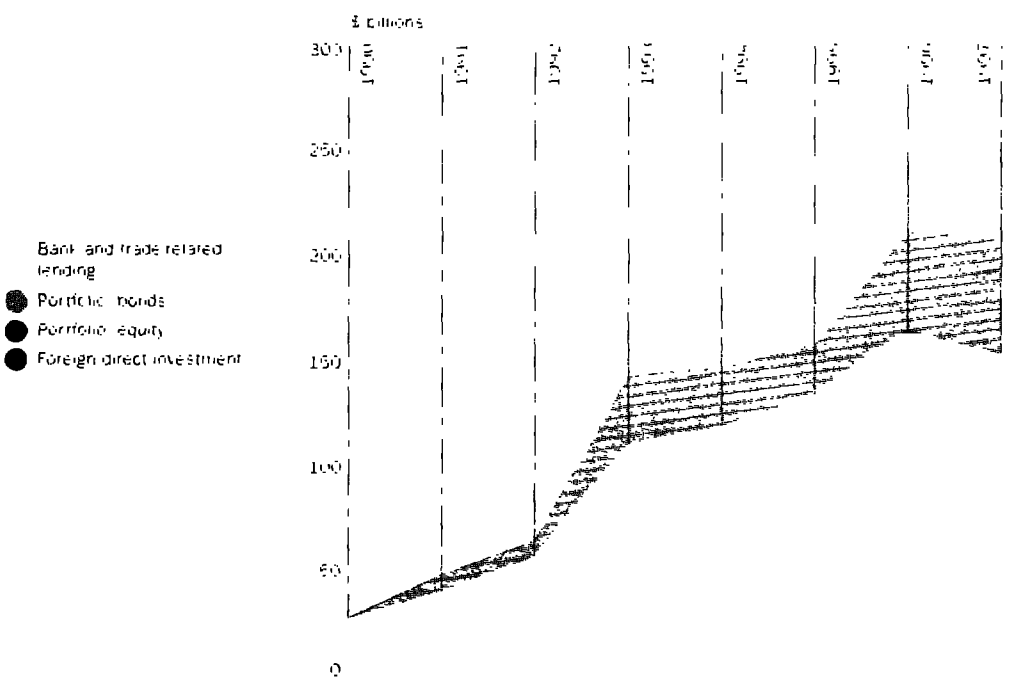
Foreign direct investment was essentially flat in 1997 after jumping from $24 billion in 1990 to almost $120 [illegible]



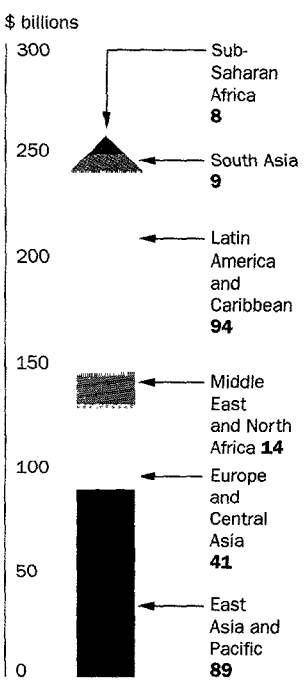
Despite a leveling of foreign direct investment and a sharp drop in portfolio equities, private capital flows remained the largest source of finance to the developing world in 1997. But most of these flows went to a handful of countries. The rest continue to depend on a declining flow of aid.

Portfolio equities took a big hit in 1997, falling by nearly a third

Private capital flows to developing economies have surged in the 1990s



East Asia attracted the most private capital in 1997



Source for both pages: World Bank. *Global Development Finance 1998.*