# CHARACTERS AND MEASUREMENT INDICATORS OF INTERNATIONAL FINANCIAL INTEGRATION IN DEVELOPING COUNTRIES

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Finance is a development resource, just as manufacturing inputs and labor are resources, the availability of which determines whether and which programs and projects are undertaken. As a key element of investment and growth, the efficiency with which financial resources are distributed within an economy largely determines economic growth. No matter what resources countries have in abundance, "the biggest difference between rich and poor is the efficiency with which they have used their resources. The financial system's contribution to growth lies precisely in its ability to increase efficiency."[1]

Development of efficient financial markets in developing countries has been severely constrained by the neglect of institution building in both private and public sectors. Efficient financial markets require a certain threshold in both the number and variety of market institutions that compose the market infrastructure. Lack of adequate government support and regulatory back-up has also hampered the growth of essential market institutions in developing countries. Even when some LDCs retain market institutions, the latter often suffer from lack of expertise, capital, and experienced staff. Perhaps it is understandable that institution building does not take place overnight, and that it requires a careful strategy and long-term commitment on the part of the government as well as the market participants.

In recent years, however, promoting the efficient functioning of financial institutions and markets has become a major policy goal for many developing countries. The process of financial development has two dimensions: domestic financial deepening and international financial integration. While both dimensions are important to economic growth, they may become the cause of either success or failure of an economic plan, depending on the sequence and intensity of their implementation.

Domestic financial deepening refers to the promotion of financial activity and capital formation resulting from an increase in the level of competition in domestic capital markets. Some of the measures frequently used include elimination of credit controls and credit rationing, interest rate ceilings, differential reserve requirements, and also elimination of discriminatory practices and capital requirements that curtail free entry of local participants into domestic financial markets.

International financial integration occurs when exchange controls are removed and the capital account is freed to allow financial resources to flow freely in and out of the country. Barriers to the entry into the local market by foreign financial institutions are removed and their access to various financial services and market activities is liberalized. As a result, the domestic economy acquires the characteristics of the international economy, such as entrepreneurship, competition, innovation and

[1]World Bank, World Development Report 1989, p.26.

dynamism. The free market compensates for domestic inflation with adjustments in the exchange rate and domestic interest rates. In theory, the speed with which inflation, exchange and interest rates reach equilibrium is evidence of the degree of integration between the domestic financial system and international financial markets.

## Characteristics of International Financial Integration

International financial markets have enjoyed a remarkably long period of linear expansion over the past four decades. Gross outstanding international banking assets, which were barely noticeable until the mid 1960s, have grown to over $10.2 trillion as of March 1998.2 The growth in international financial activities is noted not only in such stock measures as above but also in the flow aspect as well. Cross-border international financial flows, including those related to Eurocurrency transactions and foreign exchange trading, are conservatively estimated at $1.5 trillion per every business day, or $300 trillion on an annual basis. The daily volume handled by the New York Clearing House Interbank Payments System (CHIPS), which clears mostly international financial transactions including Eurodollar and foreign exchange trading, averages about $1.5 trillion. In comparison, the Fedwire network maintained by the U.S. Federal Reserve for domestic fund transfers handles a daily volume of about $1.2 trillion on average. This large volume of cross-border financial flows may be compared to the total annual merchandise trade volume of about $5.5 trillion on a worldwide basis in 1997. International financial flows, which in the earlier days were largely influenced by international trade, have now turned the table. In the international market, the tail now wags the dog, not the other way around.

Financial integration on the international scale can be measured not just in its numerical magnitude, though almost astronomically large counting in the units of trillions of dollars, but also in terms of its diversity in both financial products and services. A real-time 24-hour trading in foreign exchanges is well established. The global, continuous 24-hour trading now extends to many debt and equity securities as well as their derivative products such as swaps, futures and options in interest rates, currencies, commodities and equity indexes. The existing linkages among major international futures and options exchanges are further strengthened by the Globex and other international trading systems. We can expect a continuing expansion in the volume of global trading in interest rate and currency swaps, zero-coupon bonds, FRNs, Eurosecurities, major government securities and their derivatives such as CATS, TIGRs, LIONs, ZEBRAs. If the sun indeed sets in today's British Empire unlike her former colonial days, nowadays the sun never sets on Citibank, Nomura, Merrill Lynch and Deutsche Bank of the world in a literal sense. These international financial institutions can no longer afford missing even one hour of trading on the 24-hour trading market due to both the high risk and the high opportunity cost involved.

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2 Bank for International Settlements, International Banking and Financial Market Developments, Basle, August 1998.

## Objectives of International Financial Integration

Financial policy in developing countries has increasingly focused on the objective of improving the efficiency of the financial system, without, however, neglecting the two other main objectives, namely to ensure the stability and soundness of the financial system and to maintain an adequate level of investor protection. Efforts towards modernizing national financial systems have gathered considerable momentum since the early 1980s under the impact of increasing internationalization of financial markets and intensifying competition within and between national financial systems. Competition policies have become a major, although not the only, policy tool for improving the efficiency of the national financial systems. In this context it needs to be stressed that competition is not seen as a goal in itself; the ultimate objective is efficiency. In implementing policies towards improving the efficiency of national financial systems, a wide range of measures have been devised to stimulate competition and strengthen the role of market forces. These measures include the deregulation of interest rates and other financial service fees such as stockbroker's commissions to promote price competition and the liberalization of various financial activities to enhance the role of market forces.

A most striking feature of developments on the supply side of the markets for financial services has been the trend towards diversification and decompartmentalization, or blurring of demarcation lines between formerly separated sectors of the financial system. The driving forces behind this trend have originated both from the market side and from the authorities' side. While financial institutions have used diversification strategies as a major weapon for competing vigorously in the rapidly growing and increasingly widening markets for financial services and products, the authorities have generally supported this trend also, often in connection with broader financial reforms designed to improve the efficiency and the functioning of their countries' financial systems.

The diversification and despecialization process has no doubt been one of the major factors contributing to intensified competition in the vast markets for financial services and products, although the speed and intensity of this development has varied from country to country depending on differences in historical and legal frameworks and tradition and on regulatory changes. In the process of regulatory reform designed to build more integrated financial systems, the authorities have often paid considerable attention to the question of competitive equality and have taken measures to ensure that the "players" in the market compete with equal weapons on a level playing field.

## Types of Financial Integration

Financial market integration manifests itself in three major formats: functional, regional, and international.

(a) Functional financial integration has lessened the operational identities among those financial institutions with formerly distinct product lines, such as commercial versus investment banks,

savings and loan associations, insurance companies, postal offices, and consumer credit companies. Policies towards despecialization and diversification of financial services and products which banks and other financial institutions are allowed to offer, were generally more important in countries with historically more segmented financial systems than in countries with more open and homogeneous systems.

This applies in particular to savings institutions which in a number of countries traditionally acted as collectors and guardians of small savings that were to be channeled into narrowly defined uses such as housing finance or government securities. In most of these countries such savings institutions have gradually been allowed to become full-scale retail banking institutions and have thus been integrated with the banking system. In the United States, for example, the S & L crisis in the late 1980s accelerated the trend towards transformation of S & Ls from traditional, narrowly-defined home financing services into broader full-service financial institutions. In a similar way, the financial service powers of post office systems have sometimes been enhanced by the authorities with a view to making more efficient use in the distribution of financial services and products of the wide branch network that postal systems usually have at their disposal.

A third trend within the broader development towards diversification and the blurring of demarcation lines within financial systems has been the process of integration of the banking sector with the securities markets and the specialized institutions operating in them. This process has in particular affected those countries in which the two sectors have historically been separated by law or tradition. Among the industrialized countries, the United States, Japan and Canada are the main examples where the separation between commercial and investment banking used to be maintained rather strictly, whereas in the Continental Europe and other countries the role of banking institutions has been traditionally more widely interpreted and practiced, including both commercial and investment banking activities. In recent years, however, we are witnessing a growing trend toward broadening financial activities by banking institutions. Even the commercial banks of the United States and Japan can engage in investment banking activities outside their own home countries, while their domestic financial activities have been progressively liberalized and extended to include an increasing array of previously forbidden investment banking activities such as underwriting of certain corporate bonds, mortgage-backed securities and commercial paper.

(b) Regional or geographical financial integration has also been accelerated by the technological progress in the financial system. Widespread installation of automated teller machines (ATMs) provides a powerful weapon for commercial banks to overcome any barriers to interstate branching. Technological breakthroughs in computers and telecommunication make it possible for a financial institution to more easily gain access to the previously blocked market regions. Furthermore, the "regional branch networks" have been increasingly adopted in the United States whereby neighboring states collectively allow branching by each other's commercial banks on a reciprocal basis. Thus, banks in Virginia, Maryland and the District of Columbia can now establish banking establishments freely within the tri-state region. The same is true for the banks in the New England states as well as in the South Eastern states of Florida, Georgia, South and North Carolinas, etc. In some developing countries such as Indonesia and Pakistan, commercial banks are more freely allowed to open branches nationwide outside their traditional banking markets, thus accelerating the trend toward

geographical integration in financial services.

(c) International or cross-border financial integration is perhaps the most significant financial integration. In fact, among the most noteworthy financial market developments during the recent decades has been the trend toward internationalization, financial innovation, and securitization. While all these three developments interact among each other, internationalization has been instrumental in providing a fertile ground for financial innovation and securitization. The degree of international financial integration can be seen by various measures to facilitate a free flow of capital and financial services across national boundaries.

## Economic Rationales for International Financial Integration

After several decades of preoccupation with the dirigistic and interventionistic role of the government in promoting economic growth, an increasing number of developing countries have shifted their development focus to market signals guiding the allocation of resources in which the role of prices is being emphasized, profits are becoming a measure of economic success for enterprises and financial markets are being promoted to allocate resources to profitable activities within a competitive environment. Deregulation and liberalization in the financial system is encouraged to nurture competition among various financial institutions and markets and to enhance allocative efficiency in the economy. While the post-war economic development model was inward-oriented, relying upon government intervention to set pricing signals and promoting a strong participation of the state in the production of goods and services, the new approach is outward-oriented through a free market mechanism where the market prices play the dominant allocative role. The role of the government in the new outward-oriented development model is to provide a level playing field for all financial institutions through deregulation and integration. Thus, financial integration becomes an integral part of the new development model. Here the existence of a substantial private sector is a necessary but not a sufficient condition for economic development, which also requires open competition free of oligopolistic and privileged practices perpetuated by protective barriers and subsidized credit.

International financial integration is also predicated upon the efficiency argument. By removing barriers to new entry and promoting competition on a global basis, international financial integration lowers both the cost of funds and the cost of financial services. Liberalized capital movements combined with market determined exchange rates pull down the domestic cost of funds to that of international level. Furthermore, the elimination of national barriers in financial services stimulates competition among the financial institutions, thus lowering the prices of financial services such as service fees and brokerage commissions. While financial market integration may not mean equalization of financial service prices, price convergence toward the lowest denominator is one of its positive results.

International financial integration also enhances risk diversification for both borrowers and investors. Availability of a wider array of financing sources both domestically and internationally reduces not only the funding cost but also the fund availability risk for a borrower. If one financing source dries

up, other sources can be tapped freely. Diversification of funding sources, available for the borrowers from industrialized countries, now becomes a feasible option for LDC borrowers through financial market integration. For international portfolio investors, availability of various investment securities in many capital markets including those of developing countries enhances the risk-return profile of their investment portfolio. A study by Bruno Solnik demonstrates that an active strategy of international portfolio diversification including certain Pacific Basin markets improves the portfolio performance. Especially, he noticed that inclusion of some Pacific Basic capital markets such as Korea, Taiwan and Thailand in the U.S. dollar-numeraire international portfolio significantly improves the risk-return profile.[3]

Financial market integration may also bring about the critical mass necessary for a market to enjoy the economies of scale and risk sharing. Modern financial markets require both sophisticated functional expertise and up-to-date market information. Such knowledge cannot be generated in a vacuum; it needs constant innovations and cross-fertilization of ideas among bankers and other finance professionals.[4] Individual national markets, if isolated from other active financial centers of the world, cannot benefit from new financial techniques and products and tend to be dominated by tradition-bound financial institutions that often behave oligopolistically. Integration brings about the critical mass necessary for the financial intermediaries to experiment with new techniques and to stay competitive and innovative. The critical mass argument is particularly relevant for the financial markets of developing countries, which by themselves remain too small and too fragmented to engender the innovative and entrepreneurial spirit essential for modern financial market activities.

## Economic Costs of International Financial Integration for Developing Countries

While international financial integration promotes competition and enhances market efficiency and financial innovations, it can also have a destabilizing effect on an economy, particularly when attempted prematurely. Developing countries are especially prone to this negative effect. One reason is that the financial infrastructure of developing countries, when compared with mature economies, is too weak to withstand the economic shock of changing suddenly from an inward-looking economy to an open economy. Liberalization may even aggravate other deficiencies existing within various sectors of the economy, thus producing an overall negative impact and not achieving the desired outcomes.

An example is the experience of Argentina, Chile and Uruguay, which pursued open market reforms starting in the mid-1970s. In varying degrees, they eliminated constraints on capital flows, decontrolled interest rates, and relaxed many trade restrictions. Initially some efficiency gains were made but these were ultimately overshadowed by problems with policy inconsistencies,

[3]Bruno Solnik, "Pacific Basin Stock Markets and International Diversification," a paper presented at the Second Annual Pacific Basin Finance Conference, Bangkok, Thailand, 1990.

[4]Yoon S. Park, "The Economics of Offshore Finance Centers," Columbia Journal of World Business, Winter, 1982.

implementation difficulties, and overlooked market frictions. A main cause of the failure was the fact that, at the time reforms started, the three countries were experiencing severe macroeconomic imbalances, including foreign exchange shortages and high inflation. Another contributing factor was the absence of adequate prudential regulatory constraints on financial activities. The adoption by the Southern Cone countries of tablita (pre-scheduled exchange rate devaluation table) initially induced capital inflows as domestic interest rates were higher than foreign rates even after the adjustment for exchange rate depreciation. Subsequently, however, tablita also raised domestic inflation due to both money supply expansion induced by capital inflows and driving up the prices of nontradables.

There are many reasons for the high risk of failure of financial market integration, especially in developing countries. Despite recent progress in some developing countries, most LDC financial markets are still shallow and repressed with no required depth, liquidity and breath as in developed markets. LDC capital markets suffer from poor financial infrastructure. Licenses for new financial institutions are too strictly controlled by the governments, even though the proper role of a government in the securities market, which is quintessentially based upon the private initiatives, should be limited to that of a prudential regulator rather than a controller or interventionist. Such areas as proper accounting and auditing standards, legal rights of investors, and adequate disclosure rules and so on should be the main areas of concern to the government in promoting securities markets.

One of the major hurdles to development of well-functioning financial markets in developing countries is the infant stage of private institutional investors. Private pension funds and insurance companies are not yet any important investors in capital market instruments, mostly keeping the bulk of collected funds in time deposits with commercial banks or tax-exempt savings certificates issued by deficit-burdened governments. In many developing countries, mutual funds are predominantly government operated, and life insurance companies and unit trusts are also dominated by government institutions. Thus, the securities markets are often overwhelmed by government actions and policies, with little room for the private financial institutions to maneuver.

Furthermore, the financial markets of developing countries lack the balance. In almost all developing countries, commercial banks still play an overwhelmingly important role in the entire financial system. This condition has been the result of both an institutional inertia and the government policy orientation. Securities markets are essentially related to an advanced form of business finance, and as a consequence many developing countries find their securities markets at only an early stage of development. Both the volume as well as the institutional structure is inadequate compared to that of industrialized countries where securities markets have played a vital role in the overall allocative process of savings and investment funds. Not only the securities markets but also nonbank financial institutions (finance companies, development finance institutions, investment and merchant banks, insurance companies, pension funds, venture capital firms, and so on) constitute a relatively small part of the financial system.

Instead, commercial banks play the dominant role in intermediating a nation's financial flows among various sectors of the economy. Commercial banks necessarily tend to view securities markets as

their competition and have no incentive to encourage the latter's development. Such hostility on the part of commercial banks toward securities markets is shared equally among private as well as government-owned commercial banks. On the other hand, the dominant position of commercial banks in most LDCs stifles both innovation and competition in the financial system essential to the healthy growth of securities markets.

Even where the private financial sector plays an increased role, the financial system in the developing world is often dominated oligopolistic institutions. The anti-trust legislation in many developing countries is at an infant stage and large business groups, with privileged access to the government authorities, maintain close linkages with large banking and financial institutions. Thus, in many developing countries the small and medium-sized companies as well as new business ventures suffer from "double crowding-outs" by both the government and the big business groups. As LDC financial markets are both shallow and oligopolistically controlled, financial market integration can sometimes be exploited by the privileged groups to enhance their oligopolistic control rather than promoting market competition and efficiency. Large business groups in developing countries are often the first to benefit from international financial integration, resulting in a greater degree of oligopolistic market control rather than enhancement of market efficiency through further competition. This risk is heightened in those developing countries where the real sector is not sufficiently integrated globally. Financial integration without concomitant real sector integration within the overall economy can often lead to further market disruptions instead of economic efficiency.

## Measurement of International Financial Integration

The degree of international financial integration is difficult to measure in any precise form. Up until now, there have been no generally agreed measurement indicators for international financial integration. However, the most theoretically satisfactory definition of financial integration is based on asset substitutability, the “law of one price (or one interest rate),” whereby equal and free access to information equalizes returns on perfectly substitutable assets. Under this definition, the interest rate parity theory is used by many scholars. Its main point is that nominal interest rate differentials on comparable assets denominated in different currencies are related to the differentials between spot and forward exchange rates for the currencies involved, if there are no capital controls and exchange market intervention by government authorities.

Another theory about international financial integration is on the relationship between countries' investment rate and the national savings rate. If perfect (direct) capital mobility does exist, there should be no relation between a country's domestic savings rate and its domestic rate of investment. Changes in these variables would be uncorrelated. When national saving exceeds (or is less than) domestic investment, the country is accumulating (or reducing) net claims on the rest of the world. Therefore, by running cross-sectional regressions of countries' investments against national savings rates, one may measure international capital mobility and financial integration.

Based upon these and other theories of international financial integration, various measures of

international financial integration have been suggested and used. The IMF, in a 1998 study of the subject, has used three measurement indicators.5 First, the ratio of the absolute value of the current account balance to GDP is used as a proxy for the degree of capital market integration. Second, based on the theory of the law of one price (or interest rate), one may measure the deviations from real interest parity. Similar approaches are used in a couple of earlier studies.6 Third, the ratio of gross capital flows to GDP is used to gauge the extent of international financial integration. Here, the capital flows include both direct and portfolio foreign investments as well as other investment flows such as trade credits, international loans, cross-border deposits, and other accounts receivable and payable.

International financial integration is part of market globalization. In this sense, we may distinguish between the integration of product markets and that of financial markets. Labor markets remain highly segmented by immigration policies and by language, cultural, and other barriers to the international movement of labor. One measure of the extent of product market integration is provided by ratio of foreign trade to GDP. However, this measure likely understates the degree of integration, because an increasing share of GDP in many countries consists of services, a large proportion of which are nontradable. Thus, one may better use the ratio of merchandise exports to the total output of tradable goods.7 In a similar fashion, one may use the ratio of international trade carried out under the current account convertibility to the total world trade. The proportion of developing country trade carried out under the current account convertibility has increased from 30 percent in 1985 to 70 percent in 1997, with China's acceptance of the IMF's Article VIII that stipulates the current account convertibility of its member countries.8

The World Bank, in its landmark study of private capital flows and international financial integration for developing countries, uses three indicators to measure the degree of international financial integration.9 The first is to gauge a country's access to international financial markets through the country risk ratings of the Institutional Investor Survey. Ratings of less than 20 are categorized as low, ratings of greater than 50 as high, and ratings in between as medium. Thus, the study equates a country's risk rating with its extent of international financial integration. The second approach is to estimate the ratio of private capital flows to GDP. Different types of capital flows are weighted separately according to their contribution to the *linking of markets*, with FDI flows weighed at the lowest with a weight of 1, bank flows a weight of 3, and portfolio flows a weight of 5. Using these

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5 Barry Eichengreen and Michael Mussa, Capital Account Liberalization: Theoretical and Practical Aspects, IMF, 1998.

6 For example, Charles Pigott, "International Interest Rate Convergence: A Survey of the Issues and Evidence," Federal Reserve Bank of New York Quarterly Review, Winter 1993, and Adrian Throop, "International Financial Market Integration and Linkages of National Interest Rates," Economic Review – Federal Reserve Bank of San Francisco, Issue No. 3, 1994.

7 IMF, World Economic Outlook, May 1997, p. 46.

8 Ibid., p. 73.

9 World Bank, Private Capital Flows to Developing Countries: The Road to Financial Integration, Oxford University Press, 1997, p.17.

multipliers, countries whose flows amounted to less than 10 percent of GDP were categorized as low, countries whose flows exceeded 20 percent were considered high, and countries in between were categorized as medium. The third measure considers the extent of financing diversification based on the composition of portfolio, FDI, and banking flows. Countries receiving a minimum of 5 percent of total flows for each type of three flows are categorized as high, while those receiving a minimum of 5 percent in two types of flows are categorized as medium. The remaining countries are categorized as low. These measures are then converted to an overall index of international financial integration.

In consideration of both the theories of financial integration and market practices, this paper looks at three indicators to measure the degree of international financial integration. Following are the three ratios and their interpretations.

1. Bank International Activities Ratio (%)

$$\frac{\text{Banks' Total Foreign Assets and Liabilities}}{\text{Banks' Total Assets and Liabilities}}$$

This ratio is defined as banks' total foreign assets and liabilities to banks' total assets and liabilities. This ratio measures the degree of international linkage of a country's banking system, in terms of the international assets and liabilities on the books of a country's banks. The higher this ratio, the higher the degree of international financial linkage of a country's banking system. The calculated percentages of the bank international activities ratio are consistent with our expectation: industrialized countries exhibit a greater degree of international financial integration than less developed economies. For the 6 developed countries, the average ratio was around 18.8% between 1991 and 1997, while 20 developing countries' average was only 9.3% during that same period. As a benchmark, the ratio for the United Kingdom was the highest at 53.6% in 1997 and that for the United States was the lowest among the developed countries at only 6.8%. During the entire1990s, the United States has a much lower ratio than other countries in the developed world, indicating that American banks concentrate their business relatively more on domestic business, as compared to those in other developed countries. The United Kingdom, whose ratio for the banks' international activities was the highest among all the countries examined with its average exceeding 50%, contributed the most to the high ratio of developed countries.

Among developing countries, Argentina and the Philippines are more active in banks' international activities than other countries, while Indian banks' foreign assets and liabilities have been almost zero. The Philippines has the highest percentage at 22.4% in 1997. In general, the variance among developing countries was much smaller than developed countries. Except for Thailand and Egypt, the banks' international activities ratio had been fairly stable for most developing countries during the seven years from 1991 through 1997. It is interesting to note that Thailand has increased its ratio significantly during this period, while the exact reverse was true for Egypt. It indicates that Thailand has accelerated its international financial integration during the 1990s, while Egypt has been receding from the international banking scene during the same period.

It is interesting to note that, during the 1990s this ratio has increased steadily for the developing countries in Asia and the Eastern Europe and West Asian regions, while the countries in Latin America and Africa have experienced a slow decline in this ratio during the same period. This may be the result of the LDC debt crisis in the 1980s, which impacted especially hard on the countries in the latter group, thus discouraging international banking activities there in the 1990s as well, while the banks in the Asian and newly westernized Eastern European regions were able to benefit from the more optimistic assessment of their economic prospects by the international banking community in the 1990s.

2. Inward Foreign Direct Investments to GDP Ratio (%)

$$\frac{\text{Annual Stock of Inward Foreign Direct Investments}}{\text{Gross Domestic Product}}$$

This ratio is defined as the annual stock of inward foreign direct investments to gross domestic product. Unlike the first ratio that is focused on the degree of international financial integration in the banking sector, this ratio measures the degree of international linkage in the real sector as expressed in foreign direct investments. The results of this ratio over the past two decades demonstrate a marked increase in the degree of international financial integration among developing countries. Compared to 1980 and 1985, the comparable numbers for 1996, the year when the latest data are available, indicate a significant increase in the stock of FDI in most developing countries, with possible exceptions of Egypt and South Africa. Overall, most developing countries have actively solicited foreign direct investments during the past two decades in order to supplement their domestic investments as well as to benefit from advanced technical and management know-how that is accompanied with most foreign direct investments. Because of such a conscious policy shift in most developing countries, this ratio also exhibits a steady increase in recent decades. Although the average ratio for developing countries was only 6.9% and 9.3% in 1980 and 1985 respectively, it rose to 12.3% and 15.5% in 1990 and 1995 respectively, approaching the level for the average of developed countries. Different from the banks' international activities ratio, which was generally very stable in the 1990s, the inward FDI to GDP ratio was clearly much higher in 1996 than 1990 for most countries except for Chile, Indonesia and Egypt. Especially for Malaysia and New Zealand, it reached 48.6% and 51.8% respectively in 1996. Japan and India were among the lowest countries in this ratio. Of course, the reasons for Japan and India were totally different. The mainstream FDI capital flows for Japan were outward, but India had negligible capital flows at all, both inward and outward.

3. Private Capital Flows to GNP Ratio (%)

$$\frac{\text{Net Inward Private Capital Flows}}{\text{Gross National Product}}$$

This ratio is defined as net inward private capital flows to gross domestic product. Unlike the first

two ratios that employed the stock data, this ratio looks at the annual flow data. The net inward private capital flows include the annual net private capital inflows composed of bank loans and portfolio investments, as captured in the World Bank's *Global Development Finance*. We only calculated the private capital flows to GNP ratio for developing countries and not for industrialized countries due to the data constraints. Malaysia had the highest ratio from 1991 to 1996, ranging from 11.1% to 18.2%, while Russia had the lowest ratio for private capital flows, less than 1% in 6 of the past 8 years. The average ratio for all the developing countries in the sample shows a modest increase from 1989 to 1996, rising from 3.0% in 1989 to 5.2% in 1996. Particularly, it was relatively higher during the period after 1993 than the period before 1993. Between 1989 and 1996, this ratio shows a steady increase in most developing countries. Among the developing countries, however, there is a notable difference in the numbers. In 1996, for example, the ratio for Malaysia was 12.0%, while that for India was only 1.8%.

In addition to the three ratios examined above, one may also consider the covered interest rate differential in order to gauge the degree of interest rate parity. The covered interest rate differential can be defined as (domestic money market rate minus U.S. money market rate) minus forward foreign exchange rate discount against the U.S. dollar. To the extent that there is an active financial arbitrage involving the money market instruments of a country, the covered interest rate differential should be zero, as is the case among industrialized countries. Unfortunately, most developing countries do not have active forward foreign exchange markets, thus making it impossible to collect reliable forward foreign exchange rate data involving emerging market currencies.

Similarly, one may also look at the foreign equity holdings ratio, defined as the outstanding equity holdings of foreign investors to the total stock market capitalization. In recent years, an increasing number of emerging market countries have opened up their stock exchanges to foreign investors. Again, there are no reliable data on the amounts of foreign equity holdings in most developing countries. If the IFC starts to collect such data in the future, this ratio may also illuminate the degree of international financial integration involving foreign equity investments in emerging capital markets.

## Conclusion

From the analysis of the three ratios that we have calculated, we can reach the following conclusions. First, the degree of international financial integration has been increasing modestly in the recent decades both for the developed and developing countries, as demonstrated in all the three ratios. However, in general the developed countries as a group have a higher degree of international financial integration than developing countries, which is consistent with our prior expectation. But the difference could be small and continues to be narrowing.

Second, among developed countries, the variance of international financial integration is relatively large when compared to developing countries. For example, Canada and United Kingdom have significantly higher values of the banks' international activities ratio as well as the inward FDI to GDP ratio than other developed countries. Again, such results appear to be consistent with our prior expectation, as these two countries have the most open economies among the developed countries.

Finally, among the developing countries that we have studied, India is the least active in the process of international financial integration at least through 1997. Hopefully, this picture might change in the coming years as India accelerates its economic reform and internationalization. As expected, Russia also exhibits a fairly low degree of international financial integration.

**Indicator 1: Bank International Activities Ratio (%)**

$$\frac{\text{Banks' Total Foreign Assets and Liabilities}}{\text{Banks' Total Assets and Liabilities}}$$

| Year | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|---|---|---|---|---|---|---|---|
| **Developing Countries** | | | | | | | |
| **Latin America** | | | | | | | |
| Argentina | 16.1 | 17.8 | 15.7 | 17.7 | 13.9 | 15.7 | 15.0 |
| Brazil | 7.6 | 11.1 | 12.7 | 8.5 | 8.4 | 8.7 | 7.6 |
| Chile | 5.8 | 8.2 | 7.5 | 6.6 | 4.7 | 3.6 | 2.2 |
| Mexico | 1.0 | 0.5 | 0.4 | 0.4 | 0.7 | 0.7 | 1.4 |
| Peru | 13.2 | 12.3 | 9.1 | 9.2 | 11.6 | 10.8 | 10.7 |
| Venezuela | 5.2 | 5.5 | 6.2 | 4.9 | 2.6 | 4.1 | 2.8 |
| **South, East, and South-East Asia** | | | | | | | |
| China | 4.9 | 2.9 | 6.4 | 7.7 | 6.1 | 5.4 | 5.1 |
| India | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Indonesia | 8.6 | 9.4 | 8.5 | 8.7 | 8.2 | 7.5 | 12.8 |
| Korea | 7.2 | 7.3 | 7.4 | 8.3 | 9.8 | 11.8 | 14.4 |
| Malaysia | 7.6 | 9.0 | 14.1 | 7.5 | 5.6 | 5.4 | 8.1 |
| Philippines | 16.0 | 16.7 | 14.7 | 14.6 | 14.6 | 18.2 | 22.4 |
| Thailand | 5.0 | 5.2 | 8.8 | 12.9 | 15.3 | 14.0 | 17.8 |
| **Eastern Europe and West Asia** | | | | | | | |
| Czech Republic | N/A | N/A | 6.7 | 6.9 | 9.2 | 10.2 | 0.1 |
| Poland | 10.8 | 13.7 | 12.0 | 12.6 | 9.6 | 8.1 | 10.2 |
| Russian Federation | N/A | N/A | 20.4 | 16.7 | 11.6 | 14.1 | 14.6 |
| Turkey | 11.4 | 16.7 | 20.7 | 16.7 | 16.3 | 14.7 | 16.5 |
| **Africa** | | | | | | | |
| Egypt | 21.3 | 15.7 | 13.3 | 12.4 | 10.8 | 9.6 | 8.7 |
| Nigeria | 10.0 | 14.2 | 11.0 | 6.7 | 14.1 | 9.9 | 9.4 |
| South Africa | N/A | 5.8 | 4.9 | 5.5 | 5.4 | 6.5 | 6.1 |
| *Average of 20 countries* | 8.9 | 9.6 | 10.0 | 9.2 | 8.9 | 9.0 | 9.3 |
| **Developed Countries** | | | | | | | |
| Canada | 15.4 | 15.5 | 13.0 | 15.6 | 14.9 | 15.9 | 17.3 |
| Germany | 12.7 | 12.9 | 14.2 | 14.0 | 14.7 | 15.2 | 17.9 |
| Japan | 14.1 | 12.2 | 13.0 | 12.3 | 13.1 | 12.9 | 14.8 |
| New Zealand | 11.0 | 13.2 | 13.3 | 12.8 | 13.6 | 13.7 | 13.9 |
| United Kingdom | 47.4 | 51.4 | 51.8 | 52.1 | 52.3 | 49.3 | 53.6 |
| United States | 6.3 | 6.2 | 2.7 | 5.5 | 5.0 | 5.9 | 6.8 |
| *Average of 6 countries* | 17.8 | 18.6 | 18.0 | 18.7 | 18.9 | 18.8 | 20.7 |

Data Sources: *International Financial Statistics Yearbook*, IMF, 1997.

**Indicator 2: Inward Foreign Direct Investments to GDP Ratio (%)**

**Annual Stock of Inward Foreign Direct Investments**
**Gross Domestic Product**

| **Year** | **1980** | **1985** | **1990** | **1996** |
|---|---|---|---|---|
| **Developing Countries** | | | | |
| **Latin America** | | | | |
| Argentina | 6.9 | 7.4 | 5.3 | 10.2 |
| Brazil | 6.9 | 11.3 | 8.5 | 14.2 |
| Chile | 3.2 | 14.1 | 33.1 | 27.3 |
| Mexico | 4.2 | 10.2 | 13.2 | 22.3 |
| Peru | 4.3 | 6.7 | 3.8 | 14.9 |
| Venezuela | 2.7 | 2.6 | 8.0 | 13.1 |
| **South, East, and South-East Asia** | | | | |
| China | N/A | 1.5 | 4.8 | 24.7 |
| India | 0.7 | 0.5 | 0.5 | 2.6 |
| Indonesia | 14.2 | 28.6 | 36.6 | 25.0 |
| Korea | 1.8 | 1.9 | 2.3 | 3.0 |
| Malaysia | 24.8 | 27.2 | 33.0 | 48.6 |
| Philippines | 3.8 | 4.2 | 4.7 | 10.4 |
| Thailand | 3.0 | 5.1 | 9.3 | 11.6 |
| **Eastern Europe and West Asia** | | | | |
| Czech Republic | N/A | N/A | N/A | 13.6 |
| Poland | N/A | N/A | 0.2 | 9.7 |
| Russian Federation | N/A | N/A | N/A | 4.1 |
| Turkey | 0.2 | 0.7 | 0.9 | 3.4 |
| **Africa** | | | | |
| Egypt | 9.6 | 12.0 | 23.0 | 2.4 |
| Nigeria | 2.6 | 5.5 | 24.9 | 39.9 |
| South Africa | 21.3 | 19.1 | 8.6 | 9.9 |
| *Average of 20 countries* | 6.9 | 9.3 | 12.3 | 15.5 |
| **Developed Countries** | | | | |
| Canada | 20.4 | 18.5 | 19.7 | 22.0 |
| Germany | 4.5 | 6.0 | 7.4 | 5.9 |
| Japan | 0.3 | 0.4 | 0.3 | 0.7 |
| New Zealand | 10.5 | 9.0 | 18.7 | 51.8 |
| United Kingdom | 11.7 | 14.0 | 20.8 | 20.5 |
| United States | 3.1 | 4.6 | 6.9 | 8.3 |
| *Average of 6 countries* | 8.4 | 8.8 | 12.3 | 18.2 |

Data Source: *World Investment Report*, UNCTAD, 1998.

**Indicator 3: Private Capital Flows to GNP Ratio (%)**

$$\frac{\text{Net Inward Private Capital Flows}}{\text{Gross National Product}}$$

| Year | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 |
|---|---|---|---|---|---|---|---|---|
| **Developing Countries** | | | | | | | | |
| **Latin America** | | | | | | | | |
| Argentina | 1.0 | 0.2 | 2.0 | 2.6 | 6.1 | 3.9 | 3.8 | 5.0 |
| Brazil | -0.5 | 0.0 | 0.7 | 2.3 | 3.6 | 1.9 | 2.7 | 3.8 |
| Chile | 8.4 | 8.4 | 3.8 | 3.9 | 4.4 | 8.1 | 3.7 | 8.5 |
| Mexico | 0.7 | 4.9 | 4.4 | 2.8 | 5.4 | 4.9 | 9.7 | 4.9 |
| Peru | 1.0 | 0.5 | 0.0 | 0.8 | 6.9 | 9.7 | 7.0 | 9.8 |
| Venezuela | 1.9 | 2.0 | 5.7 | 4.0 | 1.8 | 0.9 | 1.5 | 6.2 |
| **South, East, and South-East Asia** | | | | | | | | |
| China | 2.8 | 2.8 | 2.5 | 5.3 | 10.3 | 8.8 | 7.5 | 6.7 |
| India | 2.1 | 1.4 | 1.8 | 1.9 | 2.7 | 2.7 | 1.2 | 1.8 |
| Indonesia | 4.0 | 5.1 | 5.5 | 5.8 | 2.2 | 5.5 | 6.6 | 8.0 |
| Korea | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Malaysia | 1.6 | 2.8 | 9.8 | 11.1 | 18.2 | 12.7 | 13.0 | 12.0 |
| Philippines | 3.4 | 3.5 | 2.6 | 1.3 | 7.6 | 7.5 | 5.2 | 4.9 |
| Thailand | 6.8 | 5.3 | 5.3 | 3.7 | 6.6 | 3.4 | 6.3 | 7.8 |
| **Eastern Europe and West Asia** | | | | | | | | |
| Czech | 1.6 | 2.7 | 6.5 | 3.7 | 6.9 | 4.6 | 11.1 | 9.0 |
| Poland | -0.5 | 0.0 | 1.1 | 1.2 | 2.8 | 2.0 | 4.2 | 4.2 |
| Russian Federation | 0.8 | 1.6 | 0.8 | 2.6 | 0.8 | 0.3 | 0.3 | 0.2 |
| Turkey | 1.6 | 1.3 | 1.0 | 2.5 | 3.6 | 0.8 | 0.7 | 2.6 |
| **Africa** | | | | | | | | |
| Egypt | 4.9 | 2.5 | 1.6 | 1.0 | 1.7 | 2.7 | 0.4 | 2.1 |
| Nigeria | 13.2 | 1.3 | 2.6 | -1.7 | 6.1 | 7.8 | 7.5 | 0.9 |
| South Africa | N/A | N/A | N/A | N/A | N/A | 1.7 | 4.9 | 1.1 |
| *Average* | 3.0 | 2.6 | 3.2 | 3.0 | 5.4 | 4.7 | 5.1 | 5.2 |

Data Sources: *Global Development Finance*, World Bank, 1998.

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