Capital Flows to Developing Economies:
Implications for Saving and Investment

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The currency crises that broke out in East Asia in mid-1997 have been followed by a year

of tumult in international financial markets. These crises have seriously impacted the emerging

market economies, forcing many to raise domestic interest rates so as to stem an outflow of

financial capital and prevent further exchange rate collapse. Interest rate increases have, in turn,

depressed domestic economic activity. Not surprisingly, this severe financial instability has

intensified ongoing discussions about the benefits and risks to developing economies from

allowing capital to flow freely across national borders.

For many developing countries, the ability to draw upon an international pool of financial

capital offers large potential benefits. Economic output in these countries is held down by low

levels of capital per worker. Foreign resource inflows -- current account deficits -- can be used to

augment their private saving and reach higher rates of capital accumulation and growth. Access

to international capital markets provides the means to finance those resource flows. It is also

argued that some types of foreign capital inflows, principally foreign direct investment, facilitate the transfer of managerial and technological knowhow.[2] Portfolio investment and foreign bank lending are seen as adding to the depth and breadth of domestic financial markets. Some proponents have gone on to argue that, by increasing the rewards for good policies and the penalties for bad policies, the free flow of capital across national borders has the salutary effect of promoting more disciplined macroeconomic policies and reducing the frequency of policy errors.[3] By the mid-1990s, support for open financial markets had grown to the extent that some officials suggested amending the IMF charter to place capital account convertibility on the same level of desirability as a convertible current account.[4] Some analysts reason that the obvious benefits of open trade in goods and services creates a presumption of positive net benefits for open cross-border trade in all financial instruments.

On the other hand, the opening of domestic financial markets to cross-border transactions creates added risks, as evidenced by the frequency of currency crises, particularly in developing countries. These crises have most often been blamed on mistaken macroeconomic policies in the affected countries, or what is characterized as bad fundamentals. But the recent crises in Mexico and East Asia, countries with reasonably successful policy regimes, have called attention to the inherent instability of financial markets, and the risks that cross-border financial transactions can raise for countries with relatively unsophisticated financial systems and weak regulatory oversight.

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[2] Recent literature emphasizing the potential role for FDI to raise growth through technological diffusion includes Borensztein et. al. (1998) and Grossman and Helpman (1991, chapters 11 &12).

[3] For more discussion of the potential benefits, see Eatwell (1996, UNDP) and Obstfeld (May 1998, NBER 6559).

[4] A useful discussion of this issue is provided in Fischer et al (1998).

Today's crises are seen as similar to the bank runs or financial panics that plagued the U.S. banking system of the 19th century in the sense that they are triggered by liquidity problems as countries get caught in a maturity mismatch of their foreign assets and liabilities. In addition, international financial transactions involve hazards that are not present within domestic markets, especially the risk of exchange rate changes. And when markets are stressed, governments are inevitably drawn in by their commitment to an explicit exchange rate or by the societal consequences of large swings in currency values.

Most of the current policy discussion implicitly accepts the notion that open capital markets are highly beneficial, and proposals for reform have been directed toward reducing the risks of financial instability and crises. But, few resources have been devoted to a systematic evaluation of the benefits of open capital markets. The benefits to foreign investors seem quite evident and stem largely from the higher expected long-term rates of return and opportunities for risk diversification. The return on investments in emerging markets shows a low correlation with overall global indexes of the return, and returns among emerging markets often exhibit low correlations with one another.[5] Much less is known about the benefits to the economies receiving foreign capital inflows. In particular, little is known about the extent to which the promise of expanded resources for investment and growth has been realized. In part, this is due to the inherent difficulties in constructing counter-factual outcomes in the absence of such inflows.

There is also a severe shortage of historical data. The international financial market largely disappeared with the outbreak of World War I; and, in contrast to current arguments

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[5]World Bank (1997, pp. 89-91). From the investor perspective the puzzle is why there is so little international diversification of portfolios, French and Poterba (1991).

about the benefits of capital inflows, reconstruction of the industrial economies was conducted within a regime of tight capital controls. Most countries prohibited all but direct investment until the mid-1970s.[6] The free international flow of financial capital became feasible only as countries moved away from the Bretton Woods system of fixed exchange rates. Previously, countries with fixed exchange rates maintained control over external financial transactions as a means of obtaining some freedom for monetary policy to address domestic concerns. Even as late as 1980, only six industrial countries were judged as having open financial markets - Canada, Germany, the Netherlands, Switzerland, the United Kingdom, and the United States.[7] Most financial flows to developing countries, other than direct investment, took the form of government borrowing from official organizations or from private banks in the industrial economies. Large-scale flows of portfolio capital to developing economies are primarily phenomena of the 1990s.

In this study we attempt to evaluate the implications of capital inflows for the recipient countries by developing a panel data set covering 58 developing economies and annual information on the balance of payments, domestic investment and saving over the period of 1978-95. We are concerned with the uses that are made of financial capital inflows: do they finance additional inflows of real resources (a current account deficit) or are they offset by compensating financial transactions such as increased reserves or capital outflows? Second, to the extent that there is a resource transfer, how is it divided between increased investment and added consumption?

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[6]Most countries were concerned not with the potential instability, but with the pressures that capital inflows would create for an appreciation of their currencies.

[7]Frankel (1986). However, in earlier years individual countries did allow capital inflows for specific projects, such as the development of Norway's oil reserves in the mid-1970s.

The next section provides an overview of the growth in international financial markets and the extent of involvement of developing countries. We examine trends in the different types of capital inflows (foreign direct investments, portfolio investments, and other finance) and the allocation in the aggregate of those funds among alternative uses. In the second section, we use regression analysis to examine the relationship between financial inflows and rates of national saving and investment at the level of individual countries. We summarize our conclusions in the final section.

I. An Overview of Recent Trends

Our data on capital flows are drawn largely from the Balance of Payments (BOP) files of the IMF. The 5th edition of the BOP manual provides for the separate reporting of financial capital inflows (liabilities) and outflows (assets). Both the capital inflows and outflows of the BOP are reported net of repayments. One advantage of these data for our purposes is that they distinguish three types of capital flows: foreign direct investment (FDI), portfolio investment and other financial flows -- comprised primarily of bank loans. This enables us to study, for example, whether FDI is "different" from other inflows.[8] A second advantage of this source is that the consistent accounting framework enables us to relate capital inflows to other components of the balance of payments: in particular, the current account, reserve accumulation, capital outflows

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[8]Claessen, Dooley and Warner (1995) argue that FDI is indistinguishable from other capital flows in terms of its volatility and predictability. Sarno and Taylor (1999), on the other hand, find that FDI is more persistent than other components of capital flows.

and reserve accumulation.[9] Foreign aid (bilateral and multilateral) is largely classified as a transfer

in the BOP and excluded from capital inflows, but some forms of concessionary finance are

included.

The following identity provides a simplified overview of the different types of transactions

in the BOP accounts:

(1) $0 = (CA + KA) + FINI + FINO + ERR + RES,$

where
CA = Current account balance,
KA = Capital account balance,
FINI = Financial inflows,
FINO = Financial outflows,
ERR = Errors and omissions, and
RES = Reserves and related items.

As usual, sources of foreign exchange, such as financial inflows and exports, are denoted as

positive (credits) while uses of foreign exchange, such as financial outflows and imports, are

negative (debits).   This identity is based on the redesign in the 5th edition of the IMF's BOP

Accounts, which unfortunately uses somewhat confusing terminology. A newly created category

that primarily includes capital transfers and transactions related to the purchase and sale of used

equipment, is called the capital account. This new account is zero or small for the countries in

our sample, and for simplicity we have combined it with the current account. Thus, we have a

current account, a financial account and a reserve account. What used to be referred to as the

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[9] While we do not use them in this study, we note that the World Bank has developed a second
source of data in its Global Development Finance Report (GDF). That report provides detailed information
on debt stocks of developing countries, but it excludes asset transactions of the BOP, and it includes only
those financial liabilities that are denominated in a foreign currency. Thus, it includes borrowing in Euro-
currency markets, but excludes bond purchases of foreign investors in the domestic market. The GDF data
are very similar to those of the BOP in the aggregate, but there are substantial differences at the level of
individual countries.

capital account now corresponds most closely to the sum of the financial account and the reserve account. Within this simplified framework, inflows of financial capital can either be set aside in reserves, used to finance current account deficits, or be offset by financial capital outflows.

Most countries have revised their historical accounts to conform to the new BOP format, and with minor extensions we are able to put together a data set covering 58 developing countries over the period of 1978-95. The period includes five years prior to the 1982 debt crisis. Unfortunately, delayed publication of the full balance payments accounts for some countries made it infeasible to extend the period beyond 1995. The sample of countries is drawn from our earlier study that analyzed patterns of economic growth using data on GDP and investment. The specific list of countries, given in appendix table A1, covers nearly all of the countries of Latin America and Asia and a large portion of the countries in Africa.[10] Singapore, Hong Kong and Panama are excluded from the analysis because their role as financial centers involves atypically large capital outflows and inflows, and leads to some double counting of inflows at the regional level. For some purposes, we also include 23 industrial countries of the OECD.

As shown in the top panel of figure 1, there was a five-fold expansion in the total international flow of capital between 1978 and 1995. However, this trend is completely dominated by the high-income OECD countries who receive about 85 percent of the total flow. Furthermore, the nominal increase significantly overstates the growth in relative importance of these inflows. The bottom panel of figure 1 shows that, as a share of GDP, total capital inflows and the portion going to industrial countries are roughly unchanged over the two decades.

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[10] In 1990, it represented about 95 percent of the GDP estimate of the World Bank for the total world less the high income OECD and Eastern Europe and Central Asia.

A key point that emerges from these data is that the very rapid growth of capital flows to developing countries since 1988 is largely just a recovery from the highly depressed flows following the 1982 debt crisis. Flows to developing economies were about the same share of output in 1995 as they were during 1978-81.[11] Further, at 5 percent of GDP, capital inflows to the developing economies in 1995 are about the same as the flows to industrial countries despite a far less sophisticated infrastructure of financial markets and institutions.

Total capital flows to developing economies are concentrated among a few countries in Asia and Latin America. Five countries (China, Mexico, Korea, Thailand, and Brazil) accounted for nearly two-thirds of total financial flows in the 1990-95 period while the eighteen countries identified as 'emerging markets' by JP Morgan accounted for 90 percent of the total.[12] Furthermore, this share has been rising over time.[13]

It is interesting to ask how total flows to developing economies were used. One might assume that the inflows are used to finance enlarged current account deficits with an emphasis on investment goods, but the actual pattern is more complex. As shown in the lower part of table 1, only about half of the capital inflows have been associated with increased current account deficits, and that proportion has declined in the 1990s. Roughly a third of the inflows have been funneled into reserve assets. The need to hold reserves is a significant concern in the evaluation of the net

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[11]Bank lending to some developing countries, especially in Latin America, grew rapidly between 1973 and 1981 as efforts were made to encourage those countries to generate current account deficits as offsets to the large surpluses of the oil producing states.

[12]Morgan Guaranty's list of emerging markets also includes Singapore which is excluded from the 18. See Table A1 for a complete list.

[13]Readers are referred to appendix table A2 for additional information about flows to individual countries.

benefits of financial inflows because the return on those reserves is typically very low. To offset

this low return would require a high private return or substantial externalities. At the aggregate

level a third of the inflows are offset by financial outflows, but that percentage is strongly

influenced by a few large countries that allow free capital movements on the part of their citizens.

Errors and omissions are frequently associated with capital flight. Like capital outflows, they

were very large in the period after the Latin American debt crisis. Most recently, the errors have

been large for China. Exceptional finance transactions and IMF credits are included with total

reserve accumulation (RES). Such transactions could be classified as capital inflows; but because

they are frequently associated with crises, debt forgiveness and debt restructuring, they are

negatively correlated with other inflows. During the 1982-89 period, exceptional finance

transactions averaged 112 percent of total capital inflows.

The data also enable us to disaggregate total capital flows into three types: FDI, portfolio

capital, and loans. As shown at the top of Table 1, there has been a significant shift in the

composition of total capital flows to developing countries towards FDI and away from loans. In

the 1990s, there has also been an explosive growth in portfolio capital (equities and bonds) which

was practically nonexistent in prior decades.

The pattern of inflows differs markedly by region.[14] Prior to 1982, bank loans either to

governments or to other banks were the dominant financial transaction for Latin America. After

the 1982 crisis, this region largely avoided or could not obtain bank loans, focusing instead on

repayment and conversion of the old loans to marketable equities. Hence more recent net loan

activity has been consistently negative, with the growth in capital inflows concentrated in FDI and

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[14]Some regional detail is provided in appendix table 3.

portfolio capital. East Asia experienced an even larger growth in FDI, but lending remains more important than portfolio capital. Indeed, Asia accounts for nearly all of the growth in bank loans to developing countries.

Interestingly, the three types of capital inflows (FDI, portfolio, and loans) are not significantly correlated with one another over time or across countries. That is, there is little tendency for countries with large amounts of portfolio capital or loans to receive correspondingly large amounts of FDI. China, the largest recipient of FDI in the 1990s, obtained very little portfolio capital or loans, while Brazil, the largest recipient of portfolio capital, actually reduced its reliance on loans, and maintained a very restrictive policy toward FDI. The lack of correlation is shown more formally in table 2, which reports the correlation coefficients for the full set of 58 countries and 18 years. The first set of correlations pools the data and treats all observations as equivalent. The second set averages the data for each country over time and examines the correlations across the 58 country means. The third set subtracts the country-specific effects to focus on the time dimension. The correlations are all low. Indeed, the only statistically significant one (between FDI and loans in the time dimension) is just 0.09.

The bottom of the table reports parallel correlations for the subset of 18 emerging market countries. By eliminating most of the countries with no portfolio capital inflows, this sub-sample may be more representative of countries with active linkages to external financial markets. There is some modest increase in the correlation between portfolio capital and other inflows in the cross-country dimension, but no correlation is statistically significant. Perhaps surprisingly, there remains little evidence of complementarity between different types of capital inflows.

II. Capital Inflows and the Resource Transfer

For developing economies, the primary benefits of capital inflows are the opportunities to accelerate economic growth and/or to increase current consumption. The inflows can raise growth rates by supplementing domestic saving and thereby raising the rate of capital accumulation. They may also accelerate growth through the transfer of technology and management skills. Alternatively, capital inflows may be used to raise current consumption, potentially reducing saving. Indeed, there is a long-standing interest in the extent to which the resource inflows associated with current account deficits are invested or consumed.[15]

In this section, we use regression analysis to examine the links between capital inflows, investment and saving for our sample of 58 developing countries during 1979-95.[16] While our analysis focuses on capital inflows and the two components of the identity defining the current account, it is important to reiterate a point made in the previous section. Capital inflows need not be associated with a resource transfer. Indeed, significant shares of the flows to developing countries have been offset by reserve accumulation, capital outflows or errors and omissions.

Our work differs from other such empirical studies in one or more of the following dimensions. We recognize that capital inflows are likely to be influenced by domestic economic conditions, and use an instrumental variable estimator to allow for this endogeneity. We consider possible differences among types of inflows and look at both investment and saving. We focus on

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[15]A recent summary of this literature is provided by Obstfeld (1998). Much of this literature focuses on the implications of foreign aid, which we do not examine here.

[16] Some studies have taken a different approach or asked a somewhat different question. Eatwell (1996) compares investment and growth rates during periods identified as having limited versus high international capital mobility. Rodrik (1998) examines the effects of capital account liberalization, thus focusing on the implications of changes in policy, and not on the implications of capital inflows themselves.

experiences within countries over time, instead of on differences among countries. Finally, our

specifications include a variety of factors likely to influence the shares of GDP devoted to saving

and investment and allow for unobserved country characteristics.[17]

Determinants of Investment and Saving

Ideally, we would like to embed the empirical estimates of the effects of capital inflows

within the framework of a realistic theoretical model. One possibility is to rely on a neoclassical

model of intertemporal utility maximization by a representative consumer or planner subject to the

constraint of capital accumulation within a neoclassical production function. For an economy

with constrained access to international capital markets, foreign resource inflows can be viewed as

an income transfer that can either be consumed or invested. Maurice Obstfeld outlines such a

model in a recent paper that extends earlier models of the effects of foreign aid transfers.[18] In

these models, a foreign resource inflow is no different from any other income increase. Unless the

rate of intertemporal substitution is very high, the representative agent will respond to a

permanent resource inflow with a large increase in consumption. Because the inflow affects

income as well as consumption, saving may rise or fall. If the resource transfer is temporary or a

loan that must be repaid, the consumption effect is somewhat damped, but it is still likely to

exceed the effect on investment. Within such models, resource inflows may raise utility primarily

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[17] For example, Borensztein et. al. (1998) and Gruben and McLeod (1998) both used pooled data sets that do not focus on the time dimension. The former examines the links between FDI and investment and growth, but does not adjust for endogeneity. The latter uses annual data to study effects of FDI versus portfolio equity and short versus long capital inflows on saving and growth.

[18] Maurice Obstfeld (1998). See as well, Schmidt-Hebbel and Servén (1995), and Eaton (1989).

by smoothing consumption, rather than by raising investment and long run growth. Just as the steady-state capital stock and output are independent of the saving rate, they are also unaffected by resource inflows.

Such models miss some essential features of foreign capital inflows. The assumption of a single representative agent assumes a degree of capital market development -- equalization of lending and borrowing rates -- that does not exist in most developing economies. Also, foreign suppliers of credit may not be indifferent to its allocation between consumption and investment. With FDI, the foreign investor is likely to face different investment options than the domestic firm due to established links to foreign markets or access to technology. Even in the case of foreign loans, collateral is likely to be required by foreign lenders.

More disaggregated theoretical models allow for a separation of the determinants of investment and saving with explicit use of interest rates as equilibrating mechanisms. But extensive data requirements make these models ill-suited for estimation among developing economies. Instead, they have been calibrated to match the major stylized facts and used to simulate policy changes.

We have settled for a less structured approach based on existing empirical research on the determinants of investment and saving in developing economies. However, as discussed below, our approach does try to incorporate two of the major lessons from the theoretical analyses. In particular, our instrumental variables estimation enables us to focus on capital inflows that are likely to be relatively permanent and to be associated with a relaxation in external constraints on borrowing.

The empirical literature on investment reflects three differing views of investment

behavior. The oldest model, the accelerator theory, emphasizes the proportionality between the stock of capital and output, and ties investment to the rate of growth of output. Early versions of the neoclassical model expand on the accelerator model by relating the optimal stock of capital to the relative cost of capital as well as the level of output. The cost of capital is a function of the price of capital goods, taxes, the rate of interest, and depreciation. More recent versions, associated with Tobin, Brainard and others, emphasize the relationship between the market value of additional investment and its replacement costs, the 'marginal' Q ratio, as a determinant of investment. The use of Q is particularly compatible with the current emphasis on forward-looking rational expectations; and, with the incorporation of adjustment costs, it yields a well-defined investment relationship.

Efforts to validate the Q approach with historical data have had limited success; but its strong theoretical underpinnings have made it popular for macroeconomic simulation models.[19] For our purposes, the formulation raises a host of empirical problems -- most importantly, we lack measures of market valuation in developing economies. Most of the empirical studies that focus on developing economies have also lacked measures of taxes and interest rates needed to compute effective measures of the cost of capital as called for by the neoclassical model.

In practice, nearly all of the empirical research on investment in developing economies has been driven by rather *ad hoc* approaches that are strongly influenced by the availability of data. A recent World Bank study surveyed a large number of these studies.[20] They find that investment is strongly influenced by output growth, variations in the terms of trade, and external indebtedness.

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[19]See, for example, McKibbin and Sachs (1991) and Laxton and others(1998).

[20]Servén and Solimano (1993).

Turning next to saving, there is a similar dichotomy between theory and empirical analysis. Most of the theoretical literature emphasizes a life-cycle model where consumption is determined by the maximization of intertemporal utility subject to a wealth constraint: consumption is proportionate to the annuitized value of non-human and human wealth. Empirically, however, there appears to be much less consumption smoothing than these models predict -- or an excessive sensitivity to current income fluctuations. Furthermore, sustained variations in income growth appear to have a positive effect on saving, rather than the negative relationship suggested by the theory. In response, borrowing constraints are often used to account for the importance of current income. Similarly, the existence of borrowing constraints in international capital markets is used to argue that capital inflows will reduce national saving.

Another recent World Bank study surveys many of the empirical analyses of saving behavior in developing countries.[21] The authors find important parallels between the determinants of saving and investment -- as for investment, national saving rates have a robust positive relationship with income growth and variations in the terms trade. Other variables that usually have significant negative effects on saving are capital inflows, external debt, and dependency ratios (the proportion of the population that is old or very young). The results for other variables such as the interest rate and financial market depth, tend to be ambiguous.

Our review of the prior studies of investment and saving leads us to formulate both saving and investment as functions of capital inflows, output growth, and changes in the terms of trade. There may also be a role for additional country characteristics, such as external indebtedness and, in the case of saving, for dependency rates. However, while these variables vary considerably

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[21]Loayza, Schmidt-Hebbel, and Serven (1998). See as well Masson, Bayoumi, and Samiei (1995).

across countries, they have limited variation within countries over time.

Estimation With Panel Data. Given 58 countries and up to 17 years, our data set provides us

with a total of 972 observations.[22] Its panel nature has the important advantage of allowing us to

control for country-specific effects when estimating investment and saving relationships. In

contrast, many previous studies have pooled their data across countries and over time, implicitly

assuming that country-specific effects are either absent or uncorrelated with the regressors. It is

well known that such correlation will bias coefficient estimates.[23] Fixed effects estimation enables

us to focus on relationships within countries over time. As discussed above, this is the dimension

of the data set that we wish to emphasize.

Thus, we use the following specification for our estimations:

(2) $(I/Y)_{it} = \gamma_i + \beta X_{it} + \nu_{it}$ and

(3) $(S/Y)_{it} = \alpha_i + \delta X_{it} + \epsilon_{it}$

where I=1,...,58 and t = 1,...,17.

(I/Y) and (S/Y) are the percentages of GDP devoted to investment and saving respectively. X_{it}

denotes the following explanatory variables that vary across countries and over time. First, we

include either the total capital inflow expressed as a percent of GDP (FINI/Y) or its three

components (FDI/Y, PORT/Y and LOANS/Y). Second, we include the rate of real GDP growth

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[22]Missing values for some variables and the need to allow for lagged variables reduce the sample size from the full potential of 986 observations

[23]The studies by Borensztein et. al. (1998) and Gruben and Mcleod (1998) both relied upon pooled data sets.

with one and two year lags (G_{-1} and G_{-2}). Finally, DTOT is the change in the terms of trade index. Country specific effects are denoted by γ_i and α_i. Given their limited variation over time, other variables such as the age structure of the population and external indebtedness will be reflected in these terms. The empirical analysis measures saving as the sum of investment and the current account balance. Thus, the impact of a change in 'X' on the real resource transfer (the current account deficit) is simply ($\beta - \delta$).

The Endogeneity of Capital Inflows. Just as investment and saving may depend on capital inflows, the capital inflow a country receives is likely to depend on domestic economic activity.[24] This two-way interaction creates an endogeneity that may lead to biased coefficient estimates when capital inflows are used as an explanatory variable. However, the direction of this bias is unclear. A domestic shock that raises the return to capital may increase both capital inflows and investment. This would tend to bias the coefficient on capital inflows in an investment equation upwards. In contrast, consider a domestic policy change that raises interest rates. This may be expected to both increase the flow of capital into the country and to reduce domestic investment inducing a negative correlation in the data. Similarly, errors in the measurement of capital inflows would tend to bias the coefficient estimate downward.

In order to uncover the effect of capital inflows on saving and investment, we use instrumental variables to isolate the flows that are related to exogenous factors. Of particular interest are developments in the global financial markets that alter the pool of capital available to developing countries, since these can be interpreted as changes in LDCs' access to the

[24]The endogeneity issue is discussed more fully in Dooley, Frankel, and Mathieson (1987).

international market. Unlike shocks to domestic demand for capital inflows, external supply

shocks provide an opportunity to identify the underlying relationships of interest between capital

inflows and domestic investment and saving.

We turn to the literature on determinants of capital inflows to develop our instruments.

However, the empirical literature here is limited. Because of the difficulty of modeling capital

inflows, most macroeconomic simulation models specify outcomes in terms of interest-rate parity

conditions rather than in terms of the capital flows that are part of the process. Those parity

conditions may be appropriate for the major industrial economies, but they are of doubtful value

for developing countries with their infant financial markets. Unfortunately, the interest rate and

rate of return data that are critical for a fully-articulated model of capital flows are available for

only a small subset of developing economies; and when available, may be distorted by sharply

changing investor perceptions of risk.

We have relied heavily on a study of financial inflows and their determinants by Calvo,

Leiderman, and Reinhart (1994) that documented a major role for external factors[25]. To measure

these factors, their VAR analysis extracted the first two principle components of nine measures of

interest rates and cyclical conditions in the United States. But even their empirical work focused

on reserves and real exchange rates rather than capital inflows per se.

As measures of exogenous external factors to use as instruments, we experimented with

U.S. interest rates and deviations of real U.S. GDP from trend as suggested by the Calvo,

Leiderman, and Reinhart study. While both instruments were statistically significant by

themselves, they were dominated by a measure of the total gross capital flows to the developing

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[25]See as well, Calvo and Rienhart (1996).

economies in our sample. This variable should reflect a broader range of supply-side factors than just economic conditions in the United States and is largely independent of economic conditions in any one developing economy.[26] While this instrument is identical for each country, our other instruments do vary across countries. One of these is the IMF indicator of the presence or absence of controls on financial account transactions.[27] Additional instruments included the change in the terms of trade, the prior year's capital inflows and the lagged change in GDP -- variables that are included in the equations for saving and investment. Fixed effects estimation was used in our first stage regressions. As stated above, this procedure enables us to focus on the relatively permanent component of capital inflows, and on those inflows associated with changes in external supply conditions.

Empirical Results. We begin by focusing on total financial inflows. Regressions relating those inflows to rates of investment and saving are reported in table 3. The OLS estimates in the top left panel show a significant role for financial inflows in both the investment and the saving equations: about 20 percent of the inflow goes into higher investment and about 14 percent is reflected in increased consumption. On average, 35 percent (column 3) of the capital inflow is used to finance resource transfers through the current account. This implies a somewhat smaller diversion of the inflow into other offsetting financial transactions than suggested by the

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[26]The variable is the cumulative sum of the capital flows divided by the cumulative sum of the GDPs, both expressed in U.S. dollars. There is considerable variation among countries in the behavior of investment, saving and capital inflows. For example the correlation coefficient between the individual country investment rates and the 58-country aggregate was only 0.25 and that for capital inflows was 0.20. In any case, the choice of the instruments had little or no significant effect on the results reported later in tables 3 and 4.

[27]IMF (1998b).

decomposition in table 1. As expected, output growth and variations in the terms of trade account for a large proportion of the variation in rates of investment and saving.

The top right panel presents the results using instrumental variable (IV) estimation on the full sample.[28] As shown, IV substantially increases the estimated effect of capital inflows on investment, from 0.20 in the OLS regression to 0.52. However, there is no significant change in the saving relationship. Thus, the estimated resource transfer induced by a capital inflow increases to 69 percent. The remaining 31 percent of the inflow is absorbed by reserve accumulation and capital outflows. The difference between the IV and the OLS estimates, may reflect endogeneity bias, as discussed above. But it could also reflect extreme values in measured capital inflows that are not closely related to investment, and are similar to measurement error. In support of the latter interpretation, the predicted values from the first stage estimate of capital inflows have a notably smaller variance than the original data.

The results for the subsample of emerging-market economies, shown in the lower panels of Table 3, are similar to those for the entire sample. OLS estimation yields a positive, and slightly larger, effect of capital inflows on investment. The impact of foreign inflows on the saving rate, while negative, is small and insignificant. Again, the shift from OLS to IV results in a sharply increased coefficient on financial inflows in the investment equation, but the impact on saving remains insignificant. These results for total financial flows are also very robust with respect to other changes in the sample, such as a division of the countries by region or a focus on the more recent years.

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[28]The first stage estimates account for 42 percent of the variation in the financial inflow with large roles for the aggregate flows to developing countries, the lagged inflow and the lagged change in GDP.

Table 4 presents a more disaggregate model of the relationships, with capital flows divided

into three types: foreign direct investment, portfolio investments, and loans. Several points

emerge from the estimates.   First, there are substantial differences between the OLS and IV

estimates. As with the aggregate flows, IV estimation increases the coefficients on (especially

FDI) inflows in the investment equation. It also yields a strikingly large positive coefficient on

FDI in the saving equation, while the coefficient for loans becomes more negative.[29] There is no

loss of overall explanatory power in the move from OLS to IV. However, we note that actual

values of portfolio inflows are used in the reported regressions because we were unable to obtain

useful first-stage estimates for this component. The differences are less notable for the emerging

market sample. FDI has a positive influence on saving in both the OLS and IV equations, and the

negative influence of loans on saving is not statistically significant.

 Second, the IV results show substantial differences by type in the effects of capital

inflows on investment. FDI has the strongest relationship, with an estimated coefficient close to

one. Portfolio inflows have the smallest and least significant relationship, while loans are in

between. This finding is particularly evident for the emerging market economies that account for

the bulk of portfolio capital inflows. It too is robust to a variety of different specifications.

Third, the three types of financial inflows appear to also have sharply different implications

for the current account. The differences are most evident for the IV estimation where FDI has a

large positive effect on both investment and saving, implying no net deterioration of the current

account. Instead, all of the negative correlation between total capital inflows and the current

account is associated with loans, which raise investment but lower saving. Portfolio inflows have

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[29] Gruben and McLeod (1998) also find a positive effect of FDI on saving.

little impact on investment, saving or the current account, and appear to be largely offset by other financial transactions.

However, the strong positive effect of FDI on saving in the IV estimation, implying the absence of any negative effect on the current account balance, is surprising.[30] While the positive impact on saving might be dismissed in the full sample as a reflection of the imperfect nature of the IV estimation, it is also evident in the OLS estimates for emerging markets. In exploring this issue further, we find that the role of FDI is sensitive to the definition of the external balance. This is illustrated in table 5 which compares the coefficients on the disaggregated flows from a regression explaining the current account with those using a narrower measure, the trade balance on goods and services. The latter excludes factor income payments and transfers.[31] In contrast with the earlier IV results, FDI has a large negative effect on the trade balance, close to that for loans. The differences between the current account and the trade balance are less marked for the emerging market sample. The results using total capital inflows and the narrow trade balance are very similar to those reported in table 3.

It might be argued that variations in the impact on the current account are the result of changes in the timing between an inflow of financial capital and the purchase of real goods. To explore this possibility, we re-estimated the equations in tables 3 and 4, using three-year averages. In this triannual data set, there are up to six observations per country, providing 340 observations

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[30] Since the capital inflows are part of an overall BOP identity, we can apply the specification of table 4 to the other components, reserve accumulation, capital outflows, and extraordinary finance. In the shift from the OLS to the IV estimation, the decline in the impact of FDI on the current account is offset by an increased effect on reserve accumulation and extraordinary finance.

[31] These items are sizable and volatile for many developing countries because the factor payments include the interest on foreign debt and transfers are dominated by foreign aid and remittances from relatives living abroad.

in the full sample. The result was little or no change in the parameter estimates. As before, the aggregate capital inflows increase investment and the current account deficit, with no significant effect on saving; and in contrast, the disaggregate IV equations show large positive effects of FDI on both investment and saving, with no net effect on the current account.[32] Loans continue to raise investment and lower saving, thereby accounting for all of the negative impact on the current account.

We conclude that while the disaggregate flows are consistently different in their effects on investment, they do not have stable and predictable differences in their impact on the net external balance and thus saving. The results may reflect difficulty with obtaining reliable instruments for the disaggregate flows; but they are also consistent with the view that the different types of capital flows are fully fungible with one another in their financing of an external deficit.

Finally, the use of a fixed-effects estimator also has an important influence on the statistical results. Regressions on the pooled data (which assume the absence of country-specific effects) imply even larger effects of financial inflows and its components on investment and saving -- but most of this correlation comes from the cross-country covariance. That is, countries with large capital inflows tend to have higher rates of investment. Within countries, over time (the fixed-effect estimates) the coefficients are smaller. Thus, large coefficient estimates (such as those above 1.5 reported by Borenstein et. al.[33]) may primarily reflect the cross-country covariance. In addition, the problems raised by the endogeneity of capital flows are particularly

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[32]The use of three-year averages also allows us to address some of the concerns about the presence of lagged capital flows and lagged GDP in the first-stage estimation. Any problem of autocorrelation is much reduced in the three- year averages.

[33]Their results are based on pooled data for 69 countries over two time periods.

severe in the cross-country dimension, and it is difficult to develop effective instruments that distinguish among countries.

III. Concluding Remarks

This paper examines capital inflows to developing countries over the past two decades. Its primary objective is to extend the relatively small empirical literature that assesses whether the potential benefits from such inflows are in fact realized. In this final section, we pull together the main conclusions that emerge. Our basic conclusion is that a large proportion of capital inflows are used to finance current account deficits and the resource transfer is directed overwhelmingly into investment and not consumption.

The overview of capital flows reveals that the widely discussed surge in international capital movements has been less dramatic than often suggested. First, the lion's share of the increase has gone to industrial, not developing, countries; and to a large extent, the increase in capital flows to LDCs since the late 1980s reflects a return to earlier levels. Flows to these countries as a group amount to roughly the same percentage of GDP in the mid 1990s as they had in the late 1970s. Further, capital inflows are highly concentrated among a small number of countries, frequently labeled the "emerging markets" of Latin America and Asia.

The aggregate figures also mask a significant shift in the composition of capital inflows, from bank lending towards FDI and portfolio capital. Perhaps surprisingly, we find very little correlation among types of capital inflows, either across countries, or within countries over time. In particular, increased receipts of portfolio capital or bank loans are not associated with

increased inflows of FDI. At the aggregate level, only about half of the inflows over the last two decades have been used to finance resource transfers through larger current account deficits. Roughly 30 percent of the inflow has been used to increase reserves, and a substantial portion has been offset by capital outflows

Our analysis of the data for individual countries suggests that about half of each dollar of capital inflow translates into an increase in domestic investment. There is a small negative effect on national saving of marginal statistical significance. In combination, the instrumental variable estimates for saving and investment suggest a foreign resource transfer equal to 53 - 69 percent of the inflow of financial capital, with the remainder being diverted into reserve accumulation or capital outflows.

This aggregate result, however, masks significant differences among types of capital inflows. Foreign direct investment appears to have highly beneficial effects on domestic investment: indeed, the results suggest a near one-for-one relationship between the two. In contrast, portfolio capital inflows appear to have no discernible impact on investment, and the effect of loans lies between the other two. We are less certain of the differential effect on the current account and saving. In some of the estimates, FDI appears to generate large increases in domestic saving with no negative implications for the external balance, but the results were not robust to alternative specifications. Loans have a large negative impact on the current account, but a significant portion of the resource inflows is used to augment consumption. It this latter case, it would be useful to distinguish between public and private-sector borrowing -- something we have not yet incorporated in our data set.

Are these benefits of financial inflows sufficient to offset the evident risks of allowing

markets to freely allocate capital across the borders of developing countries? The answer would appear to be a strong yes for FDI. Indeed, FDI has long been viewed as "different," and most countries have actively sought such investments with special provisions to permit exchange convertibility and repatriation of funds. However, the current debate over capital convertibility is much more focused on portfolio capital -- a flow which we find to have a lesser impact on real resource use.

It is probably a mistake to believe that the current momentum of international financial liberalization can or should be reversed. At the same time, it is important to recognize that the most compelling evidence of efficiency gains from financial market liberalization results from improvements in domestic markets. Furthermore, the orderly sequencing of financial liberalization appears to be extremely important: strengthening domestic markets and regulatory oversight prior to permitting external convertibility. We interpret our results as supporting such a sequenced procedure because the most useful form of capital inflow, FDI, can be accommodated without full capital convertibility.

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Figure 1. External Capital Inflows, Major Regions, 1978-95
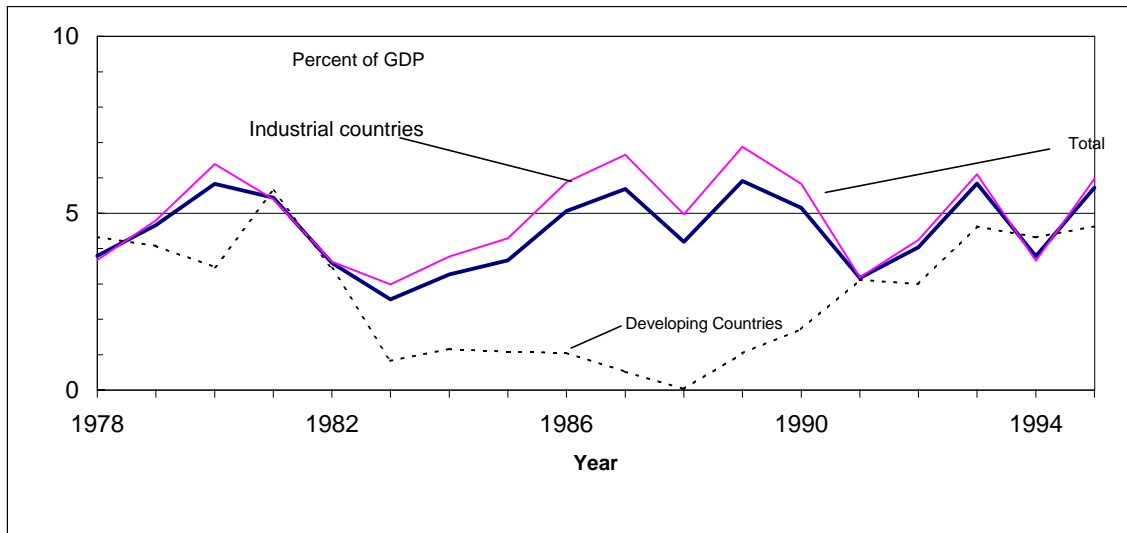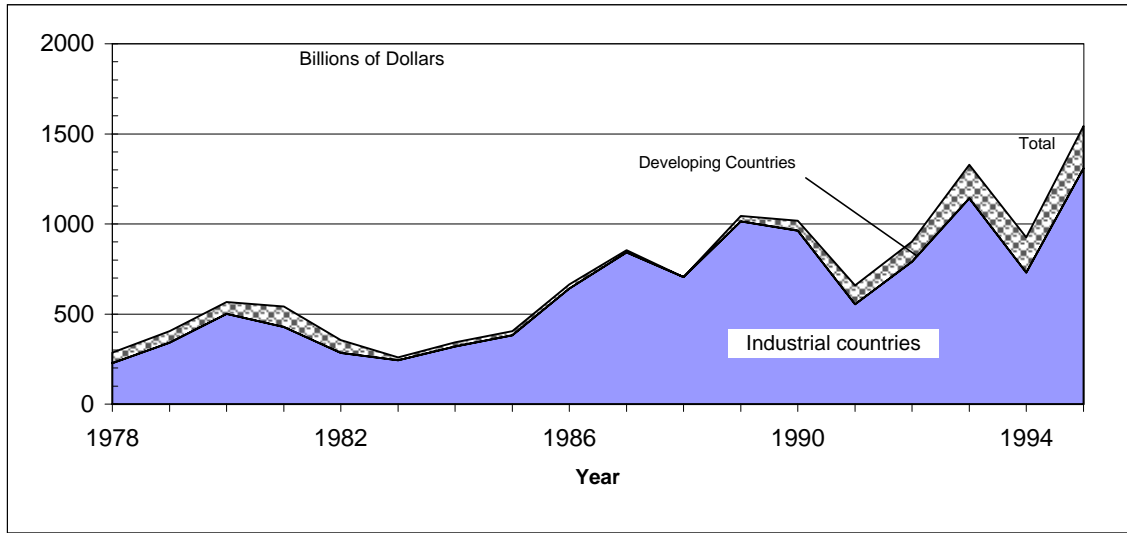
Source: IMF (1998) and authors' calculations.

Table 1. Capital Inflows by Type and Use, 58 Developing Countries, 1978-1995
Annual average

Category	1978-95	1978-81	1982-89	1990-95
Total Inflow (Billions of dollars)	71	68	24	135
Foreign direct investment	26	9	13	54
Portfolio investment	19	2	2	52
Loans	26	57	9	29
		Percent of total inflows		
Use of Inflow				
Current account financing	53	67	88	40
Capital outflows	34	17	65	32
Errors and omissions	11	11	21	9
Reserves and related items	2	6	-75	19
Reserve assets	34	13	46	38
IMF credits	-2	-3	-5	-1
Exceptional finance	-30	-5	-116	-18
Sum	100	100	100	100

Source: IMF (1998) and authors' calculations

Table 2. Correlations between Financial Flows for Developing Countries, 1978-95
Percent of GDP

	Foreign Direct Investment	Portfolio Investment	Loans
Full sample[a]			
Total			
FDI	1.00		
Portfolio investment	0.01	1.00	
Loans	0.00	0.00	1.00
Cross-Country Dimension			
FDI	1.00		
Portfolio investment	0.13	1.00	
Loans	0.16	0.08	1.00
Time Dimension			
FDI	1.00		
Portfolio investment	0.04	1.00	
Loans	0.09*	0.02	1.00
Emerging markets[a]			
Total			
FDI	1.00		
Portfolio investment	0.06	1.00	
Loans	0.01	0.10	1.00
Cross-Country Dimension			
FDI	1.00		
Portfolio investment	0.31	1.00	
Loans	0.02	0.32	1.00
Time Dimension			
FDI	1.00		
Portfolio investment	0.00	1.00	
Loans	0.03	0.08	1.00

Source: IMF (1998b) and authors' calculations.
Note: A * denotes significance at the 5% level.
a. The full sample contains 58 developing countries and 1031 observations. The emerging markets sub-sample is taken from Morgan Guaranty's list of 19 emerging markets. Singapore was excluded because of its role as a money center, leaving 18 countries and 324 observations.

Table 3. Aggregate Financial Flows. Fixed Effect Regression: 58 Developing Countries, 1979-95
Percent of GDP

	OLS Regressions			Instrumental Variable Regressions[a]		
	Investment	Saving	Current Account[b]	Investment	Saving	Current Account[b]
Full sample[c]						
Independent Variables						
Total financial flows	0.20 (8.6)	-0.14 (4.5)	-0.35	0.52 (11.2)	-0.17 (2.6)	-0.69
Change in terms of trade	0.01 (1.9)	0.07 (6.6)	0.05	0.01 (2.0)	0.07 (6.6)	0.05
Change in GDP (-1)	0.18 (7.7)	0.15 (4.9)	-0.02	0.12 (5.1)	0.16 (4.8)	0.04
Change in GDP (-2)	0.20 (8.3)	0.21 (6.4)	0.01	0.18 0.0	0.21 (6.2)	0.03
adj. R^2	0.77	0.74		0.78	0.73	
Emerging markets[c]						
Total financial flows	0.27 (6.5)	-0.02 (0.3)	-0.29	0.47 (5.9)	-0.07 (0.7)	-0.53
Change in terms of trade	0.00 (0.2)	0.07 (3.8)	0.07	0.00 (0.3)	0.07 (3.8)	0.07
Change in GDP (-1)	0.20 (4.3)	0.07 (1.3)	-0.12	0.17 (3.6)	0.08 (1.4)	-0.09
Change in GDP (-2)	0.23 (5.0)	0.16 (2.7)	-0.07	0.21 (4.4)	0.17 (2.8)	-0.04
adj. R^2	0.74	-0.68		0.74	0.68	

Source: Authors' regressions based upon IMF (1998) and World Bank (1998).
a. The following variables were used as instruments: Total inflows to 61 developing countries; the lagged endogenous variable; percent change in GDP lagged one period; change in the terms of trade; and a dummy variable for whether a
b. Computed as saving minus investment.
c. In the full sample, the OLS regressions contain 972 observations and the instrumental variables regressions 970. In the emerging markets sub-sample, the OLS regressions contain 306 observations and the instrumental variables

Table 4. Disaggregate Financial Flows, Fixed Effect Regressions: 58 Developing Countries, 1979-95
Percent of GDP

	OLS Regressions			Instrumental Variable Regressions[a]		
	Investment	Saving	Current Account[b]	Investment	Saving	Current Account[b]
Full sample[c]						
Independent Variables						
Foreign direct investment	0.31 (3.4)	-0.10 (0.8)	-0.40	0.81 (4.4)	0.77 (3.0)	-0.04
Portfolio investment	0.30 (2.2)	-0.03 (0.1)	-0.33	0.14 (1.1)	-0.01 (0.1)	-0.16
Loans	0.19 (7.7)	-0.15 (4.5)	-0.34	0.50 (10.3)	-0.22 (3.2)	-0.72
Change in terms of trade	0.01 (1.9)	0.07 (6.6)	0.05	0.01 (1.9)	0.06 (6.3)	0.05
Change in GDP (-1)	0.18 (7.5)	0.15 (4.8)	-0.02	0.11 (4.7)	0.13 (3.8)	0.01
Change in GDP (-2)	0.20 (8.2)	0.21 (6.4)	0.01	0.17 (7.0)	0.21 (6.1)	0.03
adj. R^2	0.77	0.74		0.78	0.74	
Emerging markets[c]						
Foreign direct investment	0.68 (3.9)	0.54 (2.5)	-0.13	0.90 (4.0)	0.87 (3.1)	-0.03
Portfolio investment	0.25 (1.5)	-0.12 (0.6)	-0.37	0.15 (0.9)	-0.17 (0.8)	-0.33
Loans	0.25 (5.5)	-0.04 (0.7)	-0.29	0.44 (5.7)	-0.12 (1.3)	-0.56
Change in terms of trade	0.00 (0.0)	0.07 (3.7)	0.07	0.00 (0.2)	0.07 (3.6)	0.07
Change in GDP (-1)	0.18 (3.9)	0.05 (0.8)	-0.13	0.13 (2.6)	0.05 (0.8)	-0.08
Change in GDP (-2)	0.22 (4.8)	0.15 (2.5)	-0.07	0.20 (4.3)	0.16 (2.7)	-0.04
adj. R^2	0.75	0.68		0.75	0.69	

Source: Authors' regressions based upon IMF (1998) and World Bank (1998).
a. In the instrumental variable regressions, FDI and Other Loans were treated as endogenous and adjusted with the following instruments: Total inflows to the 61 developing countries of FDI, portfolio investment, and other loans; the lagged values of FDI, portfolio investment, and other loans; percent change in GDP lagged one period; the change in the terms of trade; and a dummy variable for whether a country had capital controls.
b. Computed as saving minus investment.
c. In the full sample, the OLS regressions contain 972 observations and the instrumental variables regressions 970. In the emerging markets sub-sample, the OLS regressions contain 306 observations and the instrumental variables regressions 305.

Table 5. Alternative Measures of the Resource Transfer, Fixed Effect Regressions, 1979-95
Percent of GDP

	OLS Regressions		Instrumental Variables Regression[a]	
	Current Acount	Net Trade Balance	Current Acount	Net Trade Balance
Full sample[b]				
Independent Variables[c]				
Foreign direct investment	-0.40	-0.20	-0.04	-0.76
	(3.7)	(1.5)	(0.2)	(2.7)
Portfolio investment	-0.33	-0.48	-0.16	-0.25
	(2.0)	(2.4)	(1.0)	(1.2)
Loans	-0.34	-0.40	-0.72	-0.84
	(11.5)	(10.8)	(12.0)	(11.4)
adj. R^2	0.47	0.68	0.46	0.68
Emerging Markets[b]				
Foreign direct investment	-0.13	-0.29	-0.03	-0.28
	(0.7)	(1.6)	(0.1)	(1.2)
Portfolio investment	-0.37	-0.74	-0.33	-0.67
	(2.0)	(4.1)	(1.7)	(3.7)
Loans	-0.29	-0.42	-0.56	-0.74
	(5.6)	(8.6)	(6.5)	(8.9)
adj. R^2	0.47	0.59	0.49	0.59

Source: Authors' regressions based upon IMF (1998) and World Bank (1998).

a. In the instrumental variable regressions, FDI and Other Loans were treated as endogenous and adjusted with the following instruments: Total inflows to the 61 developing countries of FDI, portfolio investment, and other loans; the lagged values of FDI, portfolio investment, and loans; percent change in GDP lagged one period; the change in the terms of trade; and a dummy variable for whether a country had capital controls.

b. In the full sample, the OLS regressions contain 974 observations and the instrumental variables regressions 972. In the emerging markets sub-sample, the OLS regressions contain 306 observations and the instrumental variables regressions 305.

c. The change in the terms of trade as well as the percent change of GDP lagged once and twice were included as independent variables in the regressions.

Table A1. Country Sample, by Regional Grouping
58 Developing Countries

East Asia
China*
Indonesia*
Korea*
Malaysia*
Philippines*
Taiwan*
Thailand*

South Asia
Bangladesh
India*
Myanmar
Pakistan
Sri Lanka

Sub-Sahara Africa
Cameroon
Cote d' Ivoire
Ethiopia
Ghana
Kenya
Madagascar
Malawi
Mali
Mauritius
Nigeria
Rwanda
Senegal
Sierra Leone
South Africa*
Tanzania
Uganda
Zambia
Zimbabwe

Middle East and North Africa
Algeria
Cyprus
Egypt
Iran
Israel
Jordan
Malta
Morocco*
Tunisia

Latin America
Argentina*
Bolivia
Brazil*
Chile*
Columbia*
Costa Rica
Dominican Rep.
Ecuador*
El Salvador
Guatemala
Haiti
Honduras
Jamaica
Mexico*
Paraguay
Peru*
Trinidad & Tobago
Uruguay
Venezuela*

Note: * indicates countries contained in the 18 country sub-sample of emerging markets.

Table A2. Capital Inflows to Emerging Markets
Billions of Dollars

	FDI			Portfolio Investment			Other Loans			Total (FDI + Portfolio + Other)		
	1978-81	1982-89	1990-95	1978-81	1982-89	1990-95	1978-81	1982-89	1990-95	1978-81	1982-89	1990-95
Total	46.7	92.5	205.1	40.0	167.8	470.0	355.0	318.0	374.5	441.7	578.3	1049.6
(23 OECD and 61 Developing Economies)												
Total Non-OECD	8.9	13.1	53.7	2.1	2.2	52.0	56.5	9.0	29.3	67.6	24.4	135.0
Emerging Markets	6.6	10.5	48.3	1.9	1.4	49.8	44.7	4.3	24.7	53.3	16.1	122.8
Emerging Markets (Percent of Non-OECD)	73.1	79.4	89.2	88.5	91.2	95.8	78.0	75.0	51.9	77.6	62.2	91.9
Latin American Emerging Markets												
Argentina	0.5	0.5	3.2	0.4	-0.3	8.0	1.4	-1.5	-4.2	2.3	-1.2	7.1
Brazil	2.2	1.6	2.2	0.3	-0.3	13.8	8.4	-6.4	-5.2	10.9	-5.1	10.8
Chile	0.3	0.5	1.5	0.0	0.0	0.5	2.8	-1.5	1.2	3.1	-1.0	3.2
Colombia	0.2	0.5	1.1	0.0	0.0	0.2	1.0	0.9	0.9	1.2	1.5	2.2
Ecuador	0.1	0.1	0.3	0.0	0.0	0.0	0.9	-1.0	-0.4	1.0	-0.9	0.0
Mexico	1.8	2.0	6.1	0.4	-0.1	10.3	11.4	-0.6	3.7	13.6	1.2	20.1
Peru	0.1	0.0	1.0	0.0	0.0	0.2	-0.1	-0.5	-0.4	0.0	-0.5	0.7
Venezuela	0.1	0.1	0.9	0.5	0.2	2.7	2.4	-0.6	-2.3	3.0	-0.3	1.2
Total	5.2	5.4	16.3	1.5	-0.5	35.6	28.3	-11.2	-6.6	35.0	-6.3	45.3
Asian Emerging Markets												
China	0.1	1.8	19.4	0.0	0.6	1.5	1.2	2.5	0.8	1.3	5.0	21.7
India	0.0	0.0	0.7	0.0	0.0	1.5	0.7	4.1	3.4	0.7	4.1	5.6
Indonesia	0.2	0.4	2.1	0.1	0.1	1.6	1.2	3.3	2.5	1.4	3.7	6.3
Korea	0.1	0.5	1.0	0.1	0.2	6.0	4.8	-0.5	8.6	5.0	0.2	15.6
Malaysia	0.8	0.9	4.2	0.3	0.5	-0.7	0.4	0.4	2.1	1.5	1.8	5.6
Philipines	0.0	0.3	0.9	0.0	0.1	0.8	2.5	0.5	2.6	2.6	0.8	4.4
Taiwan	0.1	0.6	1.2	0.0	0.0	0.5	2.0	3.0	-0.1	2.2	3.6	1.6
Thailand	0.1	0.6	2.0	0.1	0.4	2.1	1.8	1.4	9.8	2.0	2.4	14.0
Total	1.5	5.0	31.4	0.6	2.0	13.3	14.6	14.6	29.8	16.8	21.6	74.6
African Emerging Markets												
Morocco	0.0	0.6	0.4	0.0	0.0	0.0	1.6	0.7	0.7	1.6	1.3	1.1
South Africa	-0.1	0.1	0.1	-0.2	-0.1	0.8	0.7	0.2	0.9	0.4	0.2	1.8
Total	-0.1	0.8	0.5	-0.2	-0.1	0.9	2.3	0.9	1.6	2.0	1.6	2.9

Source: IMF (1998) and Morgan Guaranty (1998).

Table A3. Capital Inflows by Region and Type, 1978-95
Billions of dollars

	1978-81	1982-89	1990-95
	Total Financial Liabilities		
Total	442	578	1050
Industrial Countries	374	554	915
Developing Countries	68	24	135
Latin America	38	-5	47
East Asia	16	17	69
South Asia	3	6	10
Sub-Sahara Africa	5	1	3
Middle East	6	5	6
	Foreign Direct Investment		
Total	47	92	205
Industrial Countries	38	79	151
Developing Countries	9	13	54
Latin America	6	6	18
East Asia	2	5	31
South Asia	0	0	1
Sub-Sahara Africa	0	1	2
Middle East	1	1	2
	Portfolio Investments		
Total	40	168	470
Industrial Countries	38	166	418
Developing Countries	2	2	52
Latin America	2	0	36
East Asia	1	2	12
South Asia	0	0	2
Sub-Sahara Africa	0	0	1
Middle East	0	1	2
	Other Financial Liabilities		
Total	355	318	375
Industrial Countries	299	309	345
Developing Countries	57	9	29
Latin America	31	-11	-7
East Asia	13	11	26
South Asia	2	6	7
Sub-Sahara Africa	5	1	0
Middle East	5	2	3

Source: IMF (1998) and authors' calculations.