1 FDI FLOWS: A CRITICAL LOOK

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by

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1.1 Introduction

.Foreign direct investment (FDI) has proven to be resilient during financial crises. For instance, FDI in East Asian countries was remarkably stable during the global financial crises of 1997-98. In sharp contrast, other forms of private capital flows–portfolio equity and debt flows, and particularly short-term flows–were subject to large reversals during the same period (as documented by Dadush, Dasgupta, and Ratha; and Lipsey, [1]. The resilience of FDI during financial crises was also evident during the Mexican crisis of 1994-95 and the Latin American debt crisis of the 1980s.

The resilience of foreign direct investment (FDI) during financial crises may lead many developing countries to regard this type of international capital flows as the private capital inflow of choice. But evidence on the size of the specific benefits of FDI inflows to emerging market is still very sketchy. Loungani and Razin [2] noted that while there is some

[1] Uri Dadush, Dipak Dasgupta, and Dilip Ratha, 2000, "The Role of Short-Term Debt in Recent Crises," Finance & Development, Vol. 37 (December), pp. 54-57.

Robert E. Lipsey, 2001, "Foreign Direct Investors in Three Financial Crises," NBER Working Paper No. 8084, January.

[2] Loungani Prakash, Assaf Razin, " How Beneficial Is Foreign Direct Investment For Developing Countries?"Finance and Development, June 2001, Volume 38, Number 2, pp: 6-10.

evidence that FDI benefits host countries, they should assess its potential impact carefully and realistically.

Economists tend to favor the free flow of capital across nations because it allows capital to seek out the highest rate of return. Capital flows may also offer several other advantages, as noted by Feldstein [3]. First, international flows of capital reduce the risk faced by owners of capital by allowing them to diversify their lending and investment. Second, the global integration of capital markets can contribute to the spread of best practices of corporate governance, accounting rules, and legal traditions. Third, the global mobility of capital limits the ability of governments to pursue bad policies.

In addition to these advantages, which in principle apply to all kinds of private capital inflows, Feldstein [4] and Razin and Sadka [5] observe that the gains to host countries from FDI can take several other forms:

(1) FDI allows the transfer of technology–particularly in the form of new varieties of capital inputs–that cannot be achieved through financial investments or trade in goods and services. FDI can also promote competition in the domestic input market.

(2) Recipients of FDI often gain employee training in the course of operating the new businesses, which contributes to human capital development in the host country.

(3) Profits generated by FDI contribute to corporate tax revenues in the host country.

(4) Of course, countries often choose to forgo some of this revenue when they cut corporate tax rates in an attempt to attract FDI from other locations. For instance, the

[3]Martin Feldstein, 2000, "Aspects of Global Economic Integration: Outlook for the Future," NBER Working Paper No. 7899 (Cambridge, Massachusetts: National Bureau of Economic Research).

[4]Martin Feldstein, 2000, "Aspects of Global Economic Integration: Outlook for the Future," NBER Working Paper No. 7899 (Cambridge, Massachusetts: National Bureau of Economic Research).

[5]Razin Assaf and Efraim Sadka, 2001, Labor, Capital and Finance: International Flows, Cambridge University Press.

sharp decline in corporate tax revenue in some of the member countries of the Organization for Economic Cooperation and Development (OECD) may be the result of such competition.

Despite the evidence presented in recent studies on a positive relationship between FDI flows and investment in capacity (on this, more later), recent applied work cautious against taking too uncritical an attitude toward the benefits of FDI, as a form of capital flows. The name "foreign direct investment" usually brings to mind international flows of capital. But, as noted by Froot[6], FDI actually requires neither capital flows nor investment in capacity. Conceptually, FDI is an extension of corporate control over international boundaries: " When Japanese-owned Bridgestone takes control over the US firm Firestone, capital neednot flow into the US. The purchase can be largely financed by US domestic lenders. Any borrowing by Bridgestone from foreign -based third parties also does not qualify as FDI (although it would count as an inflow of portfolio capital into the US). And, of course, in such acquisition there is no investment expenditure; merely an international transfer in the title of corporate assets."

1.2 Evidence on Effects of FDI on Investment

1.3

Like its theoretical counterpart, empirical work has tended to focus either on underlying factors to explain the location of FDI flows across countries or on explaining the cyclical behavior of FDI flows using macroeconomic variables, and assessing the contribution of FDI flows to investment and growth.. Like its theoretical counterpart, empirical work has tended

[6]Kenneth A. Froot, 1991, "Japanese Foreign Direct Invesrtment," NBER Working Paper No.w3737* Issued in June 1991 *Published: US-Japan Economic Forum, edited by Martin Feldstein and Kosai.

to focus either on underlying factors to explain the location of FDI flows across countries or on explaining the cyclical behavior of FDI flows using macroeconomic variables, and assessing the contribution of FDI flows to investment and growth..Given the wide range of potential motives for FDI it would be difficult to provide a single model covering all possible circumstances.

Borenzstein, De Gregorio, and Lee [7] find that FDI increases economic growth when the level of education in the host country, a measure of its absorptive capacity, is high. Table 1 reports on their investment equation regressions.

Table 1: FDI and average ratio of investment to GDP in developing countries: panel of two decades(1970-89)

log initial investment	0.0346 (3.45)	0.0344 (3.44)
schooling	0.0197 (1.95)	0.0210 (1.98)
government consumption	−0.1217 (1.4)	−0.1283 (1.4)
black market premium	−0.0078 (0.5)	−0.0080 (0.5)
FDI	2.2944 (2.29)	2.8230 (1.8)
FDI*Schooling		−0.5165 (0.3)

Adjusted R^2 = $(0.23, 0.22), (t - \text{statistic})$

Source: Borenzstein, De gregorio, and J-W. Lee (JIE, 1998)

The coefficient of FDI in the investment equation, which is larger than 2 appear to indicate a strong crowding in effect of FDI on domestic investment. But there is a potential problem of the endogeneity of capital inflows, and specifically FDI flows. Just as investment depends on capital inflows, so too capital inflows is likely to depend on the host country

[7] Borensztein, Eduardo, Jose De Gregorio, and Jong-Wha Lee, "How Does Foreign Direct Investment Affect Economic Growth?" Journal of International Economics, 45, (1998), 115-135.

domestic activity. this two -way interaction creates an endogeneity that may lead to biased coefficient estimates when capital inflows are used as an explanatory variable. A domestic shock that raises the return to capital may increase both capital inflows and investment. this would tend to bias in the coefficient on capital inflows in the investment equation upward. however a policy change that raises the interest rate creates a downward bias, because it may be expected both to increase capital inflows and reduce investment. but if the same rise in the rate of interest is due to an increase in the country risk, then both capital inflows and investment fall and this tends to create an upward bias in the coefficient on capital inflows in the investment equation . Borenszstein, de gregorio and Lee (1998) pooled their data across countries and over time, implicitly assuming that country specific effects are uncorrelated with the regressors. such correlation will bias the estimate of the coefficient on FDI in the investment equation.

A follow up study by Bosworth and Collins [8] provides evidence on the effect of capital inflows on domestic investment for 58 developing countries during 1978-95. The sample covers nearly all of Latin America and Asia, as well as many countries in Africa. They distinguish among three types of inflows: FDI, portfolio investment, and other financial flows (primarily bank loans).Bosworth and Collins find that an increase of a dollar in capital inflows is associated with an increase in domestic investment of about 50 cents. (Both capital inflows and domestic investment are expressed as percentages of GDP.) This result, however, masks significant differences among types of inflow. FDI is associated with a one-for-one increase in domestic investment; portfolio inflows have virtually no association with investment; and the impact of loans falls between those of the other two. These results hold both for the 58-country sample and for a subset of 18 emerging markets. (See Table 2.)

[8]Barry Bosworth and Susan Collins, 1999, "Capital Flows to Developing Economies: Implications for Saving and Investment," Brookings Papers on Economic Activity: 0 (1), pp. 143-69.

Bosworth and Collins conclude: "Are these benefits of financial inflows sufficient to offset the evident risks of allowing markets to freely allocate capital across capital across the borders of developing countries? The answer would appear to be a strong yes for FDI."

Table 2: Effects of Disaggregate Financial Flows on Investment in Developing Countries, 19

FDI	0.81 (4.4)
PortfolioInvestment	0.14 (1.1)
Loans	0.50 (10.3)
Change in Terms of Trade	0.01 (1.9)
Change in GDP , one lag	0.11 (4.7)
Change in GDP, two lags	0.17 (7.0)
Adjusted R^2	0.78

Source: Bosworth and Collins (1999)

Bosworth and Collins (1999) use a panel data with which allowed them to control for country specific effects when estimating the investment equation and possibly to weaken the endogeneity problem to some extent.The coefficient of FDI in the investment equation is significantly smaller in Bosworth and Collins (1999) compared to the corresponding coefficient in Borenszstein, de gregorio and lee(1998).

Typically, the domestic investment undertaken by FDI establishments relies on borrowing from the domestic credit market. Heavy domestic leverage by multinational corporations can explain the relatively small coefficient of FDI in the investment equation, and the modest role of FDI as a channel directing foreign saving into domestic investment.

1.4 FDI and Overall Capital Flows

Balance-of-payments measures of FDI for developing countries and emerging market economies reveal that there is a relatively weak association between overall capital flows and FDI.

Kindleberger [9] suggested that in order to think about FDI we must therefore ask not why capital might flow into a country, but rather why some particular asset would be worth more under foreign than under domestic control. This in turn could reflect either higher expected earnings under foreign control, or a lower foreign cost of capital and hence a higher valuation on given earnings.

Evidence on capital inflows to developing countries shows that although equity portfolio flows have risen rapidly in recent years, they still compose a much smaller fraction of the total inflows than do portfolio debt instruments (such as bonds, certificates of deposit, and commercial paper). Furthermore, the latter flows are smaller than FDI flows, which makes up more than half of private flows. Gordon and Bovenberg[10] argued that the information asymmetry between foreign and domestic savers favors domestic domestic savers. Why is there any equity trade at all given the "lemons" situation that arises from the information

[9]

References

[1] Kindelberger, Chrles P.., 1969, American Business Abroad: Six Lectures on Direct Investment (New Haven: Yale University Press).

[10] Gordon, Roger H. and A. Lans Bovenberg (1996). "Why is capital so immobile Internationally? Possible explanations and Implications for Capital Income Taxation," American Economic Review 86: 1057-1075.

asymmetries between domestic and foreign investors? The answer hinges on the international setting. The domestic risk-free interest rate exceeds the world risk-free interest rate. This interest-rate wedge generates higher valuations of the equity assets from the point of view of foreign investors, compared with the domestic potential investors, which counteracts "lemons" effect, and ensures that the equity market will not collapse. with some segmentation in the international bond market in the background to maintain equity trade.There are are however insufficient equity inflows and also home bias in equity holdings. Following up on Gordon and Bovenberg[11], Razin, Sadka and Yuen[12] explored the "pecking order" for international capial inflows in the context of a model that domestic savers and FDI investors who are close to the information concerning domestic firms which are endowed with better information than the portfolio foreign investors. The ranking of capital inflows is somewhat similar to the "pecking order" of corporate capital structure. Recall that in corporate finance the hypothesis maintains that the firms prefer internal finance (retained earnings: the analogue of FDI in the case of international flows) to external finance. If the latter is required,

[11] Gordon, Roger H. and A. Lans Bovenberg (1996). "Why is capital so immobile Internationally? Possible explanations and Implications for Capital Income Taxation," American Economic Review 86: 1057-1075.

[12]

References

[1] Razin, Assaf, Efraim Sadka, and Chi-Wa Yuen, "A Pecking Order of Capital Inflows and International Tax Principles," Journal of International Economics, 44, (1998)

Razin, Assaf, Efraim Sadka, and Chi-Wa Yuen, (1999a), "Implications of the Home Bias: A Pecking Order of Capital Inflows and Corrective Taxation," NBER Working Paper 6339, Chapter 4 in Assaf Razin and Efraim Sadka (eds), The Economics of Globalization: Policy Perpectives from Public Economics, Cambridge University Press, 1999, pp 85-122.

then firms will issue the safest security (debt, the analogue of debt portfolio inflows), and they will issue new equity (the analogue of equit portfolio flows) only as a last resort.

1.5 FDI inflows During Financial Crises

A question can be raised as to whether the surge of FDI inflows into emerging economies during tranquil periods and their persistence during crises may represent overinvestment attributable to distortions distinct to FDI.

Krugman[13] notes that sometimes the transfer of control occurs in the midst of a crisis and asks: Is the transfer of control that is associated with foreign ownership appropriate under these circumstances? That is, loosely speaking, are foreign corporations taking over control of domestic enterprises because they have special competence, and can run them better, or simply because they have cash and the locals do not? . . . Does the Firesale of domestic firms and their assets represent a burden to the afflicted countries, over and above the cost of the crisis itself?

Krugman[14] considered two potential reasons for a surge in FDI inflows after a financial crisis, while at the same time, other forms of capital inflows(loans or portfolio flows) dry up.

1. Assume that foreign firms are more efficient than their domestic counterparts. The macroeconomic moral-hazard view suggests that if domestic firms can borrow with implicit

[13]Paul Krugman, 1998, "Firesale FDI," Working Paper, Massachusetts Institute of Technology. This paper is also available on the web at

HYPERLINK "http://web.mit.edu/krugman/www/FIRESALE.htm"

http://web.mit.edu/krugman/www/FIRESALE.htm).

[14]Paul Krugman, 1998, "Firesale FDI," Working Paper, Massachusetts Institute of Technology. This paper is also available on the web at

HYPERLINK "http://web.mit.edu/krugman/www/FIRESALE.htm"

http://web.mit.edu/krugman/www/FIRESALE.htm).

guarantees, they will be willing to pay higher prices than foreign owners despite their lower expected returns. As a result, foreign firms will be crowded out of the domestic market. In the afternath of the financial crisis, however, when the regime of goverment guarantees collapses , the result will be a transfer of ownership to the more efficient foreign firms. In a pure moral-hazard version of the financial crisis, therefore , the drop in asset values as a result of the financial crisis , and the consequent transfer of ownership is an efficient move from the world's point of view.

2. The financial-panic point of view of the crisis (based on a model similar to Diamond-Dybvig type of bank runs) is, however, quite different. Suppose that foreign firms, unlike domestic investors during a panic, are not liquidity-constrained, but they are less efficient at running domestic investment projects than domestic firms. Evidently, in the absence of a crisis, the foreign firms will not get involved. But once there is a crisis, any firm that is not liquidity-constrained can earn more than the liquidation value by keeping half-finished projects in existence. It will therefore be in a position to buy the project from the crisis-stricken financial intermediary: a transfer of ownership to a foreign firm that is less efficient than the domestic firm, which is an efficient move from the world's point of view.

1.6 Adverse Selection in the Domestic Equity Market and FDI

Adverse selection in the domestic equity market could generate yet another channel through which FDI can flourish, even in more regular circumstances than financial-crisis triggered fire sales of domestic assets. Razin, Sadka and Yuen, and Razin and Sadka [15] explored the

[15] Assaf Razin, Efraim Sadka, and Chi-wa Yuen, 1999(a), "An Information-Based Model of Foreign Direct Investment: The Gains from Trade Revisited," NBER Working Paper 6884, appeared in Peter Isard, Assaf Razin and Andrew Rose (eds.), International Finance and Financial Crises: Essays in Honor of Robert P. Flood, Jr. Kluwer Academic Publishers and the International Monetary Fund.

policy implications of an FDI-bias in international capital flows as a result of asymmetric information problems at the level of domestic corporations. FDI is different from foreign portfolio investment, concerning the ability of the foreign investor to gain relevant information about the domestic firms. Through direct control of the corporate board and the stationing of managers from the headquarters of multinational firms in the foreign direct establishments in the destination countries,FDI investors can monitor closely the operation of such establishments, thus circumventing these informational problems.Furthermore, FDI investors do not only have an informational advantage over foreign portfolio investors, but they are also more informed than domestic savers. Through FDI, foreign investors to the extent that they are not are not liquidity constrained, while at the same time their host country investors are subject to liquidity constraints, could gain crucial inside information about the productivity of the firms under their control. Because FDI entails direct control on the acquired domestic firm, which the typical domestic savers with ownership position in the firm do not have. Foreign operators of a multinational subsidiary possess an inside-information advantage over potential domestic investors. The foreign investors can bid up the investment project away from their domestic counterparts due to the foreiners' advantage in having access to funds available in the capital market because they can post better colaterals. As a result of this assymetry, owners of multinational subsidiaries with above-average valuations are unwilling to sell off equity at prices offered by uniformed potential domestic buyers. The resulting adverse selection can lead to overinvestment by foreign direct

Assaf Razin, Efraim Sadka, and Chi-wa Yuen, 2001, "Excessive FDI under Asymmetric Information," NBER Working Paper 7400, appeared in Reuven Glick, Mark Spiegel and Ramon Moreno (eds.) Financial Crises in Emerging Markets Cambridge University Press. Razin, Assaf, Efraim Sadka, and Chi-Wa Yuen, (1999b), "An Information-Based Model of Foreign Direct Investment: The Gains from Trade Revisited," International Tax and Public Finance, No 4, Volume 6. See also, Razin Assaf and Efraim Sadka, 2001, Labor, Capital and Finance: International Flows, Cambridge University Press.

investors. The apparantely desirable property of FDI flow resilience during crises may in fact reflect a distortion in the secondary market for equity assets.

However, unlike the home-bias informational problem, which leads to inadequate foreign portfolio capital inflows as discussed by Gordon and Bovenberg [16] and Razin, Sadka and Yuen[17] but may be correctable by Pigouvian taxes such as tax on non-resident income, tax on interest income and corporate tax , excessive FDI flows under the distortions in the secondary market for equity assets call for a non-tax corrective policy. First, because they are governed by unobservable variables (such as the productivity level which triggers default, according to the firm contract with its lender). Second, because there could be several self-fulfilling expectations equilibria which cannot be efficiently corrected by taxation. The corrective policy package that is left available is then more likely to be an capital-market institutional reform and not necessarily only through a tax policy.

[16] Gordon, Roger H. and A. Lans Bovenberg (1996). "Why is capital so immobile Internationally? Possible explanations and Implications for Capital Income Taxation," American Economic Review 86: 1057-1075.

[17]

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[1] Razin, Assaf, Efraim Sadka, and Chi-Wa Yuen, "A Pecking Order of Capital Inflows and International Tax Principles," Journal of International Economics, 44, (1998), and Razin, Assaf, Efraim Sadka, and Chi-Wa Yuen, (1999a), "Implications of the Home Bias: A Pecking Order of Capital Inflows and Corrective Taxation," NBER Working Paper 6339, appeared as Chapter 4 in Assaf Razin and Efraim Sadka (eds), The Economics of Globalization: Policy Perpectives from Public Economics, Cambridge University Press, 1999, pp 85-122.

1.7 Weakness in Capital-Market Institutions and FDI inflows

Hausmann and Fernández-Arias[18] and Albuquerque[19] point to a striking feature of FDI flows : that the share of FDI in total inflows is higher in riskier countries, as measured either by countries' credit ratings for sovereign (government) debt or other indicators of country risk (see Figure1). There is also some evidence that the FDI share is higher in countries where the quality of institutions is lower. What can explain these seeming puzzle? One explanation is that FDI is more likely, compared with other forms of capital flows, to take place in countries with missing or inefficient markets. In such settings, foreign investors will prefer to operate directly instead of relying on local financial markets, suppliers, or legal arrangements. While it is very likely that FDI is higher as a share of capital inflows where domestic policies and institutions are weak, this cannot be regarded as a criticism of FDI per se. Indeed, without the FDI, the countries could well be much poorer. Essentially, this empirical regularity is consistent with the hypothesis that when financial institutions are weaker in the host country, the moral hazard and adverse selection problems are exacebrated, and the dominant ranking of FDI among the various types of capital inflows is strengthened. Thus, the high FDI share a sign of macroeconomic and capital-market institutional weaknesses in the host country is consistent with the asymmetric- information theory, as Razin, Sadka and Yuen argue[20].

[18]Ricardo Hausmann and Eduardo Fernandez-Arias, 2000, "Foreign Direct Investment: Good Cholesterol?," Inter-American Development Bank Working Paper No. 417 (Washington).

[19]Rui Albuquerque, 2000, "The Composition of International Capital Flows: Risk Sharing through Foreign Direct Investment," Bradley Policy Research Center Working Paper No. FR 00-08 (Rochester, New York: University of Rochester).

[20]Assaf Razin, Efraim Sadka, and Chi-wa Yuen, 1999(a), "An Information-Based Model of Foreign Direct Investment: The Gains from Trade Revisited," NBER Working Paper 6884, appeared in Peter Isard, Assaf Razin and Andrew Rose (eds.), International Finance and Financial Crises: Essays in Honor of Robert P. Flood, Jr. Kluwer Academic Publishers and the International Monetary Fund. Also see, Assaf Razin,

1.8 Country Risk and FDI reversals

When credit rating is external to the domestic firms, including the domestic subsidiaries of multinational firms, and the rating depends on some aggregate macroeconomic variables or political factors. Razin and Sadka[21]demonstrate that the equilibrium involves a "high" level of aggregate investment, with a moderate country-specific risk premium , which is hardly observable. However, there may be another , "bad" equilibrium with a very high country-specific risk premium where capital flows dry up. The country may switch abruptly from the high-investment equilibrium to the low-investment equilibrium–that is, an endogenously determined reversal of capital flows.

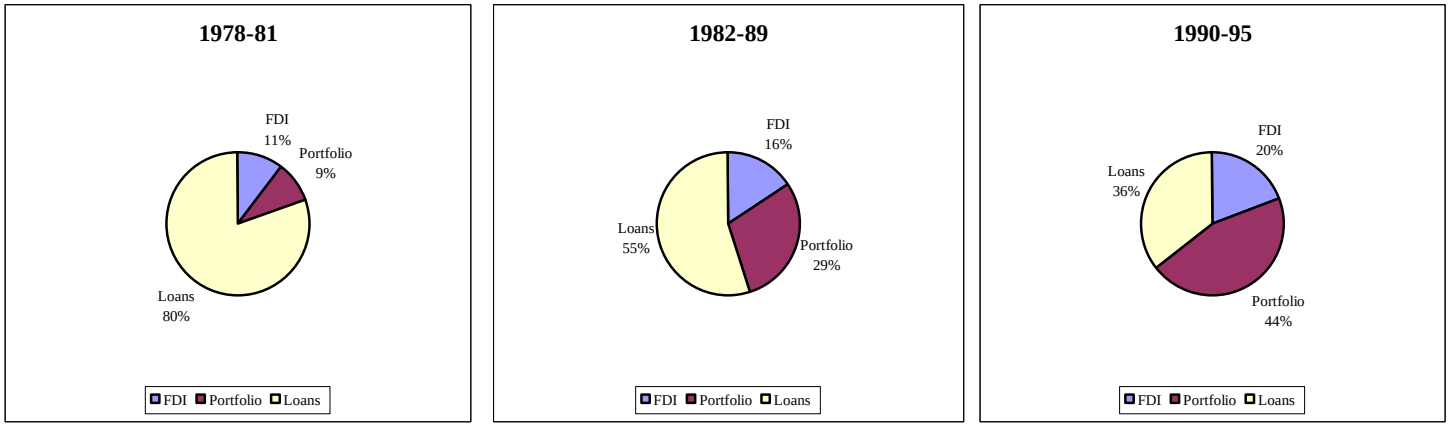
Though it is true that the machines in the FDI parable are "bolted down" and, hence, difficult to move out of the host country on short notice, financial transactions can sometimes accomplish quite easily a reversal of FDI flows. For instance, the foreign subsidiary can borrow against its collateral domestically and then lend the money back to the parent company. Likewise, because a significant portion of FDI is intercompany debt, the parent company can recall this debt on short notice. Claessens, Dooley, and Werner demonstrate that a common characterization of FDI as "cold" capital flows and foreign portfolio investments as "hot" capital flows, is inconsistent with the data[22].

Efraim Sadka, and Chi-wa Yuen, 2001, "Excessive FDI under Asymmetric Information," NBER Working Paper 7400, appeared in Reuven Glick, Mark Spiegel and Ramon Moreno (eds.) Financial Crises in Emerging Markets Cambridge University Press.See also Razin, Assaf, Efraim Sadka, and Chi-Wa Yuen, (1999b), "An Information-Based Model of Foreign Direct Investment: The Gains from Trade Revisited," NBER Working Paper 6338, appeared in International Tax and Public Finance, No 4, Volume 6.

[21]See Razin and Sadka, "Country Risk and Capital Flow Reversals," NBER Working Paper 8171, appeared in Economic Letters, June 2001, Vol. 72(1), pp.: 73-77, and Razin Assaf and Efraim Sadka, 2001(b), Labor, Capital and Finance: International Flows, Cambridge University Press.

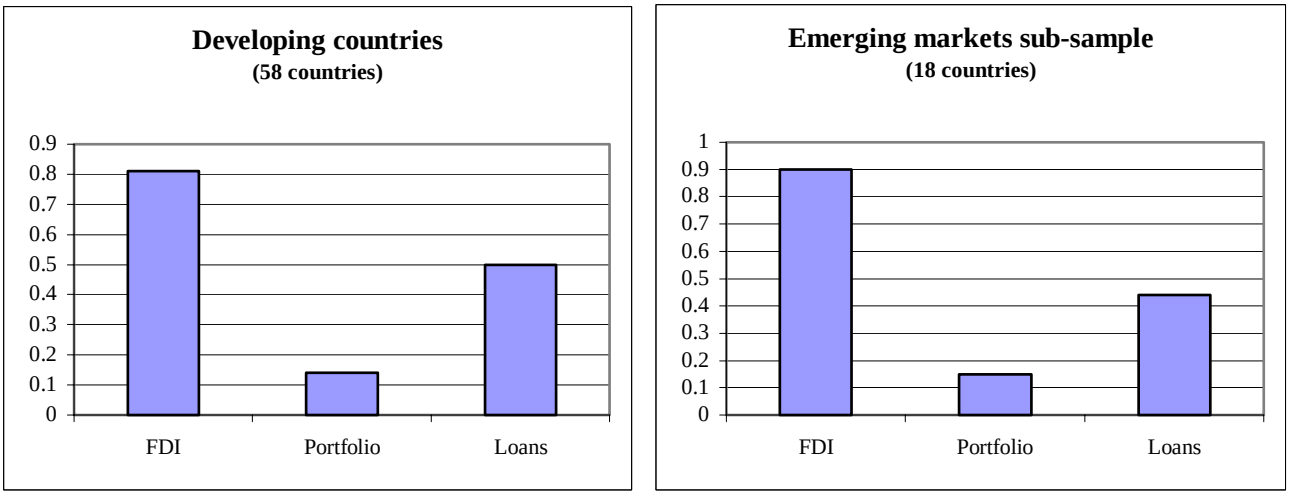
[22]Claessens, Stijn, Michael Dooley, and Andrew Warner (1995). "Portfolio capital Flows: Hot or Cold?"

Chart 1
The composition of capital inflows has shifted away from bank loans toward FDI and portfolio investment



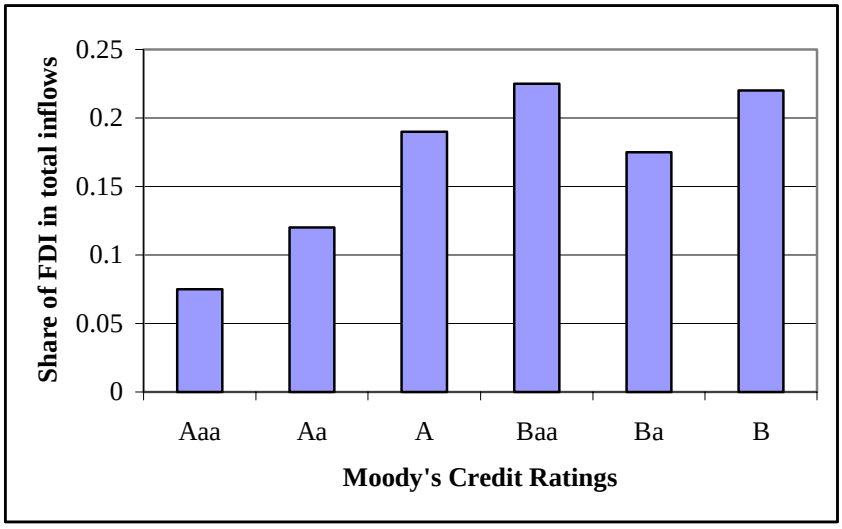
Source: Based on Bosworth and Collins (1999).

Chart 2
FDI has a stronger impact on domestic investment than do loans or portfolio investment



Source: Based on Bosworth and Collins (1999). The height of the bar represents the estimated impact of the indicated capital flow on domestic investment.

Chart 3
FDI's share in total inflows is higher in countries with weaker credit ratings



Source: Albuquerque (2000).