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Direct and Financial Foreign Investment:
How Do They Differ in Benefits to Developing Countries?

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ABSTRACT

Do developing countries derive benefits from foreign financial investment (FFI) in the same way as they do from FDI? Through analyses in a stylized framework of foreign investment, this paper concludes that due to the lack of well functioning financial markets and the lack of technology, FFI flows may not be allocated and utilized as efficiently in developing countries as FDI. The frequently claimed benefits of FFI cannot be substantiated.

INTRODUCTION

It is well known that a country's economic growth derives from two ingredients: accumulation of physical capital and more efficient use of resources. In a closed economy, domestic savings are the only source of investment and physical capital accumulation. In an open economy, however, domestic investment can be financed by foreign capital. It is commonly believed that industrial countries are abundant in capital while developing countries suffer from a constant shortage of capital for economic development. Theories on foreign direct investment (FDI) often claim that foreign investment helps bring a more efficient allocation of capital across countries and is assumed to be beneficial to both the foreign investor and the host economy. To the investor, foreign investment provides more investment opportunities and higher returns; to the host economy, foreign investment affords it lower cost of capital and higher economic growth.

Yet FDI is not the only type of foreign capital. While FDI increased enormously in the last few decades, international financial capital (referred to as foreign financial investment, or FFI, hereafter in this paper) flows gained prominence and attracted unprecedented worldwide attention toward the end of the 20th century. Indeed, the epidemic financial crises in emerging markets in the 1990s have aroused intense debates on the merits of FFI flows with respect to the recipient economies. Does FFI have the same claimed benefits to the host countries? Do the traditional FDI theories apply to FFI flows?

It seems that the burgeoning literature on FFI differs markedly from the traditional FDI literature. The differences lie in at least three major aspects. First, the current research on financial and currency crises focuses on the macroeconomic implications of FFI (see Bustelo et al, 1999, and Harvey and Roper, 1999 for a literature review). On the other hand, the literature on FDI contains more firm- or industry-specific studies. As Anand and Kogut (1997) point out, studies on FDI have concentrated on sectoral effects, but rarely on country patterns. Second, studies on FFI are more related, understandably, to financial markets and particularly the banking sector, while the literature on FDI focuses on the behavior of multinationals in non-financial sectors. Third, the current FFI literature is mainly related to emerging markets that are recipients of FFI. The FDI literature, on other hand, is more extensive in that it covers FDI in perspectives of both the home and host countries of multinationals. Despite these differences, studies on FFI do seem to claim the same benefits of FFI as those of FDI to recipient countries, particularly to developing countries. Yet these claims are often made at a superficial level without theoretical justification or empirical evidence.

This paper attempts to make some progress in bridging the gap between the literatures on FDI and FFI. This is done through an extremely stylized model of foreign investment in which FDI and FFI are compared on various dimensions so as to provide some background for analyses of whether FDI and FFI have the same economic impacts on the host countries. These dimensions include the efficiency in allocating and using capital, income distribution, capital flow and cash flow volatilities. Macroeconomic data will be used to test the propositions developed within this stylized model. It should be pointed out at the onset that, although the model has general applications, this paper focuses its analyses on developing countries as host countries to foreign capital. Such a

focus has both theoretical and practical implications in the current debate on international capital flows.

The remaining of the paper is organized as follows. Section 2 provides some classifications of international capital flows and highlights the surge in FFI flows in the last decade of the 20th century. Section 3 reviews the benefits of FDI and FFI to developing countries as claimed in the literature. Section 4 presents the stylized framework of foreign investment in which FDI and FFI are compared and propositions are developed on the efficiencies of capital allocation, utilization, and income distribution. Section 5 extends the stylized model through hypothesizing the conditions for FFI to contribute to the economic growth of the host country. Section 6 provides some empirical evidence for the propositions using macroeconomic level data for some selected countries representing the major emerging markets. The final section concludes.

THE SURGE OF FINANCIAL CAPITAL FLOWS TO EMERGING MARKETS

According to the classification in the *Balance of Payments Statistics* published by the International Monetary Fund (IMF, 1999), private international capital flows consist of the following three major categories of investment: direct investment, portfolio investment, and other investment. Direct investment reflects the lasting interest of a resident entity in one economy (direct investor) in an entity resident in another economy (direct investment enterprise). Portfolio investment covers transactions in equity securities and debt securities; the latter are subsectored into bonds and notes, money market instruments, and financial derivatives (such as options) when the derivatives generate financial claims and liabilities. Other investment covers short- and long-term trade credits; loans; currency and deposits; and other accounts receivable and payable. Portfolio investment and other investment are often referred to as international financial capital flows or FFI in this paper.

FDI has been around throughout the modern history and has been steadily increasing over time. The surge and whirling flows of FFI have been a relatively more recent phenomenon. As Table 1 (Panel A) shows, FFI (net portfolio investment, bank loans and other investment) to emerging markets well surpassed net FDI in the years preceding the Mexican peso crisis in 1994/1995. In 1991, FFI flows to emerging markets were about three times as much as FDI flows.

Table 1
Private Capital Flows To Emerging Markets
(In Billions Of U.S. Dollars)

PANEL A: ALL EMERGING MARKETS

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Net FDI	18.4	31.3	35.5	56.8	82.6	96.7	115	140	131
Net portfolio FFI	17.4	36.9	51.1	113.6	105.6	41.2	80.8	66.8	36.7
Net FFI in Bank loans and other	11.9	55.6	32.7	11.5	-35.5	55.4	16.3	-57.6	-103.5
Total net private capital inflows	47.7	123.8	119.3	181.9	152.7	193.3	212.1	149.2	64.2
Net FFI to Net FDI Ratio*	1.59	2.96	2.36	2.20	0.85	1.00	0.84	0.07	-0.51

Table 1 (continued)
Private Capital Flows To Emerging Markets
(In Billions Of U.S. Dollars)

PANEL B: WESTERN HEMISPHERE

Net FDI	6.7	11.3	13.9	12.0	24.9	26.0	39.3	50.6	54.0
Net portfolio FFI	17.5	14.7	30.3	61.1	60.8	1.7	40.0	39.7	33.0
Net FFI in Bank loans and other	-10.5	-2.0	11.7	-10.6	-38.2	10.6	2.7	-3.1	-18.1
Total net private capital inflows	13.7	24.0	55.9	62.5	47.5	38.3	82.0	87.2	68.9
Net FFI to Net FDI ratio	1.04	1.12	3.02	4.21	0.91	0.47	1.09	0.72	0.28

PANEL C: FIVE ASIAN EMERGING MARKETS AFFECTED BY FINANCIAL CRISIS

Net FDI	6.0	6.1	6.3	6.7	6.5	8.7	9.5	12.1	4.9
Net portfolio FFI	0.3	3.4	5.3	16.5	8.3	17.0	20.0	12.6	-6.5
Net FFI in Bank loans and other	17.9	17.3	15.0	8.7	18.4	36.9	32.9	-44.5	-44.5
Total net private capital inflows	24.2	26.8	26.6	31.9	33.2	62.6	62.4	-19.8	-46.1
Net FFI to Net FDI ratio	3.03	3.39	3.22	3.76	4.11	6.20	5.57	-2.64	-10.41

Sources: IMF, <u>International Capital Markets</u>, September 1999.

*: The ratio is defined as
  (Net portfolio investment + Bank loans and other) / Net foreign direct investment.
The five Asian countries: Indonesia, Korea, Malaysia, the Philippines, and Thailand.

It is even more striking to note the overwhelming non-direct investment capital flows to Latin America and to the five Asian countries that have been affected by the financial crises in the late 1990s. Table 1 (Panel B) shows that the FFI to FDI ratio reached 4.21 in 1993, immediately before the Mexican peso crisis. Net portfolio investment in that year was actually more than five times ($61.1 billion to $12.0 billion) as much as net FDI. For the five Asian economies, as Table 1 (Panel C) presents, the FFI to FDI ratio ranged between four and six in the years preceding the Asian financial crisis. There is, however, a sharp contrast in the composition of FFI flows to the two groups of countries. Portfolio investment dominated the capital flows to Latin America while bank loans and other investment dominated the capital flows to the five Asian economies. Indeed, bank loans and other investment were three or four times as much as net FDI flows to these countries in 1995 and 1996. The reversal flows in bank loans and other investment from these countries in 1997 and 1998 were also enormous.

The gyration of FFI flows to emerging markets in the 1990s was a result of at least two new developments in the international financial market. First, financial liberalization in many emerging markets paved the way for the free flow of FFI capital across countries. Second, financial innovation and the development of information and communication technology made it possible to transfer capital across countries with many more sophisticated financial instruments and at an ever-increasing speed.

THE CLAIMED BENEFITS OF FOREIGN CAPITAL TO DEVELOPING COUNTRIES

As in international trade theories, comparative advantage underlies the fundamental theories of international capital flows. The benefits of capital flows to host countries, particularly to the developing countries, have often been emphasized. The starting assumption is that developed (industrial) countries are abundant in capital and developing countries are scarce in capital. International capital flows from developed countries to developing countries represent a more efficient allocation of capital resources. Krueger (1987, p.159) states:

> *Until the 1980's, virtually all analysts viewed capital flows [to] the LDCs [less developed countries] and the apparent shift from official to private flows as a healthy development. Capital flowing from rich countries with relatively low rates of return on investment and high savings rates to poor ones with higher rates of return on investment and lower savings rates was seen as an efficient allocation of world resources. These flows were thought to benefit all: certainly labor in poor countries would benefit and per capital incomes would rise more rapidly with capital inflows to poor countries than if investment were constrained by domestic savings rates.*

The views cited in the above quote are representative of arguments for international capital mobility. It was under these presumptions that the push for "financial liberalization," "financial globalization," or "international financial integration" became so obsessive and irresistible in the 1990s. These arguments, however, do not seem to distinguish FDI and FFI flows. People are led to believe that FFI, as well as FDI, benefits the recipients, particularly the developing countries. A World Bank (1997, p.3) report states:

> *The experience of nations that have successfully managed financial integration suggests that the benefits of this process are likely to be especially large for developing countries. The direct advantages are twofold: these countries can tap the growing pool of global capital to raise investment, and they can diversify risks and smooth the growth of consumption and investment. The more important benefits of financial integration, however, are likely to be indirect. These include knowledge spillover effects, improved resource allocation, and strengthening of domestic financial markets. In addition, the increasing safety of financial operations in developing markets can support a shift to higher-return investments, with gains for both developing and industrial nations.*

Do FFI flows really have the same benefits to developing countries as FDI flows? Do they help or, more objectively, affect the developing countries in the same way as FDI flows do? Or more generally, do FDI theories readily apply to FFI? The answers to these questions do not appear to be positive based on the experiences of the world debt crisis in the 1980s and the Asian financial crisis in the 1990s. These experiences call for comparative analysis of FDI and FFI in a unified framework that bridges the two strands of literature on FDI and FFI.

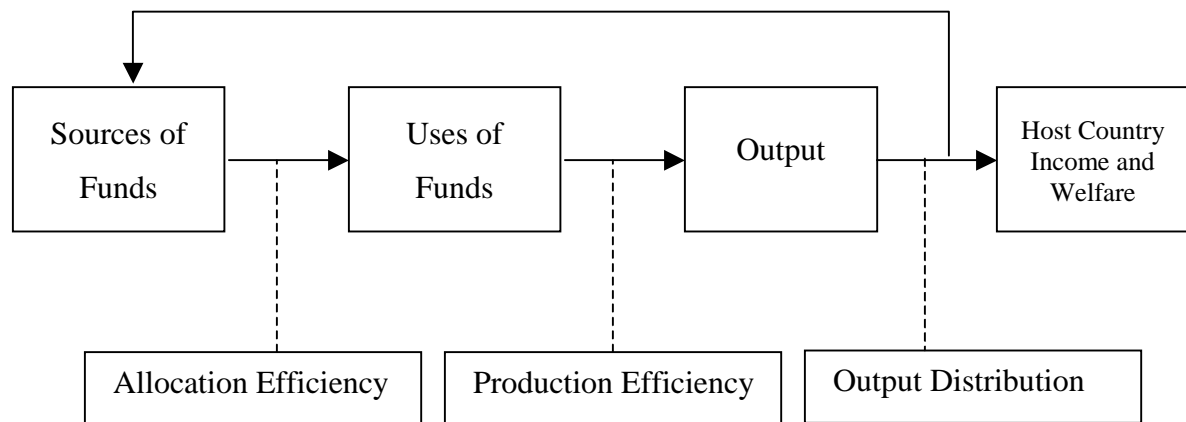**A GENERALIZED INVESTMENT FLOW MODEL**

Generally, any investment, be it FDI or FFI, has to go through the processes of capital allocation, utilization, and income distribution. Figure 1 depicts such a generalized investment flow model in which FDI and FFI can be analyzed alongside each other. These processes relate to the following three questions respectively:

First, ***how and where*** is the capital allocated?

Second, ***how*** is the capital utilized?

Third, ***how and to whom*** is the investment income distributed?

Figure 1
A Generalized Investment Flow Model

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                    ┌─────────────────────────────────────────────────────┐
                    │                                                     │
                    ▼                                                     │
┌──────────────┐      ┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│  Sources of  │─────▶│   Uses of    │─────▶│    Output    │─────▶│ Host Country │
│    Funds     │      │    Funds     │      │              │      │  Income and  │
│              │      │              │      │              │      │   Welfare    │
└──────────────┘      └──────────────┘      └──────────────┘      └──────────────┘
        ┊                     ┊                     ┊
┌──────────────────┐  ┌──────────────────┐  ┌──────────────────┐
│    Allocation    │  │    Production    │  │      Output      │
│    Efficiency    │  │    Efficiency    │  │   Distribution   │
└──────────────────┘  └──────────────────┘  └──────────────────┘
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In this simple but unified investment process model, the capital allocation efficiency, utilization efficiency, and benefits of FDI and FFI will be compared in answer to these questions. It should be noted that the answers to these questions are interrelated and together they help evaluate the benefits of foreign investment to the host country.

Allocation Efficiency
For the host country, allocation efficiency of foreign capital refers, in a broad sense, to whether the invested capital is employed in potentially economic viable projects. Such efficiency depends on a number of interrelated factors including how the investment is motivated, whether financial intermediation is involved, and who actually does the allocation.

FDI and FFI differ in the investor's motivations. As Mallampally and Sauvant (1999) point out, FDI is motivated largely by the investors' long-term prospects for making profits in production activities that they directly control. FFI, such as foreign bank lending and portfolio investment, in contrast, are not invested in activities controlled by banks or portfolio investors, which are often motivated by short-term profit considerations that can influenced by a variety of factors (interest rates, for example) and are prone to herd behavior.

FDI and FFI also differ in how they enter the host country's market. In FDI, foreign investors bypass the host country's financial market and engage *directly* in the productive activities in the host country. Foreign investors do not merely finance the construction of plant and equipment. They often establish their physical presence in the host country through corporation establishing or expanding a subsidiary (Caves et al, 1990). So in FDI foreign investors actually control the allocation of funds. Hence there is a *direct* link between the sources of funds and the uses of funds.

On the other hand, FFI flows enter the host country through financial market intermediation. They are channeled to the end users of funds either through stock markets (in terms of tradable stocks), or the bond markets (in terms of bonds), or the banking sector (in terms of commercial loans). In this case the sources of funds and uses of funds are separated by the financial intermediary. The domestic end users in the host country instead of the foreign investor do the actual deployment of capital in FFI.

Is FDI allocated more efficiently than FFI? While there is no generalized theoretical measure for comparison, the allocation efficiency of FDI can be inferred from its literature. The eclectic paradigm of FDI developed by Dunning suggests that foreign investors possess ownership, internalization, and location advantages. Given that the foreign investor possesses certain ownership advantages, to engage in FDI it must consider it advantageous to own or control these value-adding activities. There must also be natural endowments or created assets in the host country that the foreign investor finds more beneficial to combine with or add value to his/her ownership advantages than undertaking the production in his/her home country (Dunning and Narula, 1994). To access and realize these advantages, the foreign investor has to scrutinize the host country's investment environment, conduct market research and project evaluation before making any formal commitment. Thus, to the extent that FDI is engaged directly in the host country's production activity and the investment projects have undergone careful selection and evaluation processes, capital allocation in FDI is in general efficient.

FFI investors, unlike investors in FDI, may not necessarily have the ownership or the internalization advantages. They rely solely on perceived location advantages for their financial capital – believing that investing abroad can better fulfill certain investment needs than investing domestically. They relegate the allocation of their capital to the end users in the host country through financial markets. In the case of portfolio investment, the foreign investor selects equity or debt securities based on the availability and accuracy of relevant information on the end user and overall economic environment of the host country. However, the availability and quality of the financial information on firms and the overall economy depends on the development of financial markets in the host country. In a well-developed financial market, accounting standards and disclosure requirements promote transparency of the end users' financial performance. Rational investment decision should lead to capital allocation efficiency.

However, if the host country's financial markets are not well developed or the macroeconomic management is not sound, international financial capital flows may be misallocated. If the foreign capital enters the host country through the domestic capital market, the lack of sufficient information or misinformation on the issuers (end users) makes it difficult for the foreign investor to evaluate where the capital will be used or whether the capital will be used efficiently. To the extent that foreign investors are still investing in these markets, they may have been motivated by speculation or herding behind others.

As shown earlier, by far the largest amount of FFI flows to emerging markets takes the form of bank loans. Very often these loans are channeled from international commercial banks to the host country's local banks, which in turn lend to the local borrowers. Local commercial banks in many emerging markets suffer from problems including the lack of proper financial regulation or supervision and the lack of skills to conduct credit risk and project feasibility analysis. As a result of these problems, the foreign capital may be channeled to non-productive activities or non-viable projects.

Macroeconomic management is another issue in international borrowing. Many commercial loans to emerging markets have been sovereign loans or have been either explicitly or implicitly guaranteed by the host government. These loans may be used to finance government budget deficit or imports of consumption goods, to subsidize non-efficient state-owned state-favored enterprises, or in the worst case to satisfy the needs of corrupted officials.

Financial markets, including the banking sector, are very immature in many emerging markets and may not have the capacity to allocate foreign capital to the most productive uses. It is now well known that many emerging markets suffering from financial crisis bear much blame for problems including weak financial sectors and lack of banking regulation and supervision. Misallocation of foreign capital may also due to government intervention or corruption that are prevalent in some emerging markets.

A summary of the foregoing discussions leads to the following proposition:

> *Proposition 1: The allocation efficiency of FFI flows depends on the development of the host country's financial markets. If the host country's financial markets are not well developed, FFI will not be allocated as efficiently as FDI.*

Capital Utilization: Production Efficiency

Production efficiency refers to *how* the invested capital is utilized. Given that FDI and FFI are both allocated to potentially viable projects, there may still exist significant differences in production efficiency between FDI- and FFI-financed projects. Production efficiency depends crucially on the end users' capabilities in bringing potentially viable projects to actual success. Technology, know-how, and management skills are among the most important aspects of the end users' capabilities.

Investors in FDI are the end users of capital themselves. The ownership and internalization advantages of multinationals in FDI ensure that they have the appropriate technology and management skills. As Albuquerque (2000) points out, multinationals typically rely on blueprints to secure their investments. This is true in high technology industries such as pharmaceuticals, but also in low technology ones such as the soft drink industry. Technology, knowledge, and management skills are traits of FDI that make it unique among all foreign investments. FDI "represents a capital movement, but the capital involved is entrepreneurial or risk-bearing. In its entrepreneurial role, direct investment is usually linked to the transfer of managerial skills and knowledge from one country to another (Caves et al, 1990)."

FFI flows, on the other hand, only represent capital transfer. If the domestic end users have the appropriate technology, knowledge, and management skills, but lack capital, FFI can lead to production efficiency. But this is not the case for most developing countries where technology and management skills are apparently lagging behind industrial countries. In fact, many developing countries encourage foreign investment not for the sake of capital per se. These countries, notably some major emerging markets in Asia, have had higher savings rate than most, if not all, other countries in the world including industrial countries. What they really need from foreign investment are the technology and management skills embedded in the foreign capital. To summarize, we have the following:

> *Proposition 2: The production efficiency of foreign capital depends on the technology and management skills of the end users in the host country. If the domestic end users of FFI in the host country lack the appropriate technology and management skills, FFI will not achieve the same production efficiency as FDI.*

Output Distribution and Benefits from Foreign Investment

From the host country's point of view, the potential benefits of foreign investment can be categorized as monetary (direct) and non-monetary (indirect). Compensation for domestic employees and tax payments to the host government are among the monetary benefits. Non-monetary benefits include technology spillover, management training, and general improvement of the domestic competitive environment.

Although the success of FDI hinges upon the host country's business environment and government policies, there are generally no contractual obligations or guarantees on the host country's part for adequate returns on investment or other monetary compensation for foreign investors. FDI investors themselves bear the risk of their investment and are responsible for their own financial performance. For the host country, "as long as foreign investment raises productivity, and this increase is not wholly appropriated by the investor, the greater product must be shared with others, and there must be some direct benefits to other income groups (Meier, 1995, p.248)." Even if the monetary value-added is wholly appropriated by the investor, as long as the host country does not transfer net resources to the foreign investor, the host country may still gain from indirect benefits such as technology spillover.

Like FDI, FFI in portfolio investment has no contractual obligation or guarantee on the part of the host country to foreign investors for their financial compensation. If the end users in the host country misallocate or misuses the foreign capital raised in the financial market, foreign investors will suffer losses as prices of their invested securities collapse. But what foreign investors get may not be always related to the returns generated by the end users in the host country. This creates a potential for a net resource transfer from the host country to foreign investors – a net loss for the host country as a result of foreign investment. There are at least two situations in which this may occur. First, when the financial market is very volatile and the foreign investor grasps the right opportunity, makes quick profits, and leaves the host country. Second, when the host country's capital market is relatively small and the foreign investor has market power, FFI involving financial derivative instruments may create opportunities for the foreign investor to grab speculative profits from the host country's financial market.

Portfolio FFI has no technology contents, nor does it have management skills involved. So the host country cannot derive spillover benefits as it often does from FDI. But portfolio FFI may have benefits in other aspects. The first and the mostly claimed benefit is that the inflow of foreign capital helps lower the cost of capital and promote domestic investment in the host country. But this is not unique to portfolio FFI; it is true for all types of capital inflows. Secondly, portfolio FFI may help build the host country's investor base and promote the development of host country's financial market. These benefits are based on the assumption that the capital inflow is steady. This assumption will be discussed later in this paper.

In contrast to both FDI and portfolio FFI, FFI in commercial loans represent contractual obligation of the host country to foreign lenders (investors) in payments of principal and interest. These payments are independent of the cash flows generated from the end users of the involved capital. If the foreign lender bears the credit risk, he/she has an incentive to evaluate the credibility of the borrower and the involved project before any financial commitment. But if the loan is backed, either explicitly or implicitly, by sovereign or supranational guarantees, how the capital is allocated or used will not be the concern for the foreign lender. Net resource transfer from the host country to the foreign lender will occur if the foreign capital is misallocated or misused. The indirect effects of FFI in commercial loans are similar to those of portfolio FFI.

The foregoing discussions lead to the following proposition:

> *Proposition 3: The benefits of FFI to the host country are not as obvious as FDI. FFI, if misallocated or misused, or in situations where FFI has market power in the host country's financial market, may cause net monetary resources transfers from the host country to the foreign investor.*

As a summary, the comparison between FDI and FFI in terms of allocation, utilization, and benefits to the host country is presented in Table 2.

Table 2

Comparison of Basic Features between FDI and FFI Flows

	Direct investment	Equity securities	Debt (securities, loans)
Investors	Mostly multinationals in non-financial sectors	Financial institutions	Financial institutions, multinational banks
Investor motivation	Profit driven	Short term returns or portfolio diversification	Short term returns or guaranteed interest
Investment decision	Based on investors' evaluation of overall environment and investment project	Based on performance of company and financial market, and on need of diversification	Based on prospects on earnings and payback; often on implicit and/or explicit official guarantees
Capital allocation	Foreign investor allocates directly	Allocation through capital market intermediation	Allocation through bond market, money market, or government policy
Sources and uses of funds	Connected	Separated	Separated
Owners and users of funds	Same party	Different parties	Different parties
Commitment to investment	Strong and long-term commitment	No commitment	No commitment
Technology content	Yes	No	No
Possibility of technology transfer	Yes	No	No
Management involvement	Yes	No	No
Return on investment	Depends on investment performance	Depends on performance of invested company and financial market	Depends on contractual arrangement and market price

CONDITIONS FOR FFI TO BE BENEFICIAL

Suffice it to say that the basic theories of FDI do not apply to FFI given their fundamental differences outlined in the previous section. Can FFI flows benefit the host country then? It depends on whether the sources of funds match the uses of funds in at least two aspects: the investment horizon and the investment return. The time horizon for which the funds are committed by the foreign investor can be different from investment horizon needed by the end users of funds. The required rate of return by the foreign investor may also be different from the return generated from the investment project.

In case of FDI, the foreign investor commits the invested funds till the investment is paid back by the operation itself or till the operation in the host country is liquidated. The time horizon in which the capital is committed basically matches the time horizon needed by the invested operation. The foreign investor is also responsible to match the return on investment with the cost of capital. This can be exemplified by the capital budgeting analysis that investors use to evaluate the expected cash flows of a project against the investor's cost of capital, or the required rate of return.

Due to the separation between the sources and uses of funds with FFI, there is no natural mechanism by which investment horizon and required rate of return by the foreign investor match the investment horizon needed and cash flows generated by the investment projects in the host country. For FFI flows to meet the needs of the host countries, they have to meet at least two interrelated minimum conditions.

The first condition is investment horizon matching. FFI flows are short-term in nature while the economic development in emerging markets needs long-term capital commitments. If there is a constant inflow of financial capital, short-term investment can be rolled over to finance long-term projects. This is analogous to the short-term borrowing and long-term lending by commercial banks. Liquidity crisis will occur if the short-term capital inflows stop and reverse, leaving investment projects stranded in the host country. Therefore,

> *Proposition 4: For FFI to benefit the host country, the capital inflows have to be steady and non-stop.*

The second condition is related to cash flow matching. In the case of portfolio FFI, if the invested funds fail to generate the cash flows needed for the required rate of return by the investor, the foreign capital may draw, resulting in capital flow reversal and thus failing the first condition. In the case of commercial loans, if the stream of cash flows generated from the invested funds fails to meet the periodical debt service requirements, the borrower will either transfer resources from elsewhere to service the debt, or simply default. Prevalence of such defaults or the threat of such defaults can lead to financial crisis and cripple the domestic economy. Therefore,

> *Proposition 5: For FFI to benefit the host country, the cash flows generated from the invested funds have to be able to match the financial liability service flows.*

If these two minimum conditions are met, FFI flows can potentially make contributions to the economic growth of emerging markets. Unfortunately, they are difficult to materialize for developing countries due to the specific characteristics of FFI flows (see Yang, 2000, for a description). First, the supply of FFI capital to developing countries is anything but steady. Internal and/or external adverse events can cause FFI flows to a sudden stop or even a reversal, thus derailing the investment projects. Second, both the internal and external factors have often made debt servicing difficult for emerging markets. Internally, as has already been discussed, the lack of well-developed financial markets or technology makes it difficult to allocate or utilize FFI flows efficiently. Externally, interest rate and foreign exchange rate risks, commodity prices for the exports by many emerging markets, and the general economic situation in the industrial world all have often aggravated the debt-servicing burden.

Based on the stylized facts on domestic financial market development and external financial environment, technology level and management skills in many developing countries, Propositions 4 and 5 can be modified as follows:

> *Proposition 4A: For FFI to benefit the host country, the capital inflows have to be steady and constant (non-stop). Current development of domestic financial markets and external financial environment make it difficult for this condition to be met for developing countries.*

> *Proposition 5A: For FFI to benefit the host country, the cash flows generated from the invested funds have to be able to match the financial liability service flows. Given the current technology level and management skills, this condition is difficult to be met for developing countries.*

EMPIRICAL EVIDENCE

Methodology and Data
The propositions described in previous sections can be tested with firm- or transaction-specific data on international capital flows. Unfortunately these types of data are hard to come by. Instead, this paper tests these propositions with the corresponding macroeconomic or country-level data. Nine countries including four Latin American countries (Argentina, Brazil, Chile, and Mexico) and five Asian countries (Indonesia, Korea, Malaysia, the Philippines, and Thailand) are selected as they represent the major emerging markets and, except for Chile, have been affected by financial crises to various degrees in the 1990s. The experiences of many developing countries are well known, we only need to highlight some stylized facts.

From a national income accounting point of view, foreign capital inflows can be used to finance one or more of the components of GDP: private consumption, government expenditure, or domestic investment. Domestic investment constitutes a country's fixed capital formation and accumulation and contributes directly to a country's productive capacity. Therefore, whether foreign capital inflows contribute to the host country's domestic investment is a measure of allocation efficiency of foreign capital. To the extent that foreign capital flows do contribute to the host country's capital formation, whether they eventually contribute to the host country's economic growth indicates the foreign capital flows' production efficiency. Therefore, for each country in the sample, the allocation efficiency and production efficiency are measured respectively by the correlation between capital inflows and the host country's fixed capital formation and the correlation between capital inflows and the host country's economic growth. For purpose of comparison between different types of capital inflows in their contributions to the host country's capital formation and economic growth, capital inflows are divided into three major categories based on the IMF classification: (1) FDI, (2) portfolio investment (POR), and (3) other investment (OTH). Since portfolio investment and other investment constitute financial flows, these two types of capital flows are also grouped together (as FFI) in the correlation analysis as against FDI. All capital flows data and data on capital formation and economic growth of the host country are taken from International Financial Statistics of the IMF.

Constancy and steadiness of capital flows to emerging markets (Proposition 4) will be tested through volatility analysis of FDI and financial capital flows for each sample.

Whether the cash flows generated from foreign capital investment matches the cash flows to service the international liability (Proposition 5) will be tested through comparing the economic growth of the host country and the cost of servicing the foreign liability.

Empirical Results and Discussions
Capital Flows, Investment, and Economic Growth
The correlation of different types of capital inflows with capital formation and economic growth for the sample countries are presented in Table 3. The correlation between FDI and capital formation is positive for all the sample countries and statistically significant for three countries (Indonesia and Malaysia at less than 1%, and Mexico at less than 10%). In contrast, the correlation between capital formation and various measures of financial capital flows has mixed results. 7 out of 9 are negative for portfolio investment. 3 out of 9 are negative for other investments. 4 out of 9 are negative for total financial capital flows. Moreover, all these measures of correlation are not statistically significant at below 10% level. The only outlier in the sample is Thailand. While the correlation between portfolio investment and capital formation for Thailand was negative and statistically insignificant, the measures for "other investment" and total financial capital flows are positive and statistically significant at less than 1% level. Data show that Thailand's capital inflows have a unique pattern as compared with other countries in the sample. It received far greater FFI flows (mainly in the form of other capital) than FDI flows. In the three years immediately before the collapse of the Thai baht (1994 to 1996), financial capital flows to Thailand were more than 10 times

over FDI flows each year. The predominant reliance on financial capital flows did contribute to capital formation in the country as the correlation shows.

Table 3
Foreign Capital, Domestic Investment, and Economic Growth:
Correlation Analysis

	Gross Fixed Capital Formation				GDP			
	FDI	POR	OTH	FFI	FDI	POR	OTH	FFI
Argentina	0.12	-0.14	-0.36	-0.28	0.14	-0.10	-0.18	-0.36
	0.61	0.53	0.10	0.21	0.54	0.65	0.41	0.10
Brazil	0.04	-0.38	0.18	0.29	0.25	-0.37	0.00	0.06
	0.84	0.12	0.43	0.19	0.26	0.13	0.99	0.81
Chile	0.05	-0.05	0.26	0.18	-0.02	0.00	0.35	0.18
	0.84	0.83	0.24	0.42	0.92	0.99	0.10	0.42
Indonesia	0.63	0.21	-0.26	-0.21	0.60	-0.10	-0.25	-0.18
	0.01	0.41	0.30	0.42	0.01	0.70	0.33	0.49
Korea	0.30	-0.14	0.28	0.18	0.31	-0.34	0.00	-0.02
	0.19	0.55	0.22	0.44	0.17	0.13	1.00	0.93
Malaysia	0.63	-0.32	-0.15	-0.15	0.45	-0.09	-0.07	-0.13
	0.00	0.14	0.49	0.49	0.03	0.69	0.76	0.56
Mexico	0.42	-0.09	0.27	0.29	0.34	0.25	0.37	0.32
	0.07	0.73	0.26	0.23	0.16	0.29	0.12	0.18
Philippines	0.17	0.17	0.19	-0.12	-0.08	0.12	0.29	-0.17
	0.45	0.46	0.42	0.59	0.72	0.60	0.21	0.46
Thailand	0.27	-0.05	0.68	0.54	0.01	-0.09	0.42	0.31
	0.22	0.84	0.00	0.01	0.97	0.70	0.05	0.15

Note: FDI: Net foreign direct investment.
          POR: Net portfolio investment.
          OTH: Net other investment.
          FFI: Net financial capital inflows including portfolio and other investment.
          All variables are measured as annual percentage changes.
          Numbers in the second row for each country are measure of statistical significance.
Data sources: International Monetary Fund, International Financial Statistics, 1969-1998. Time series varies for different countries due to data availability.

The measures of correlation between capital flows and economic growth are similar to those for capital formation. The correlation between FDI and economic growth is positive for 7 out of the 9 countries and statistically significant for 2 countries at less than 5% level (Indonesia at 1% and Malaysia at 3%). Again the correlation between the various measures of financial capital flows and economic growth has mixed results. 6 out of 9 are negative for portfolio investment. 4 out of 9 are negative for other investments. 5 out of 9 are negative for total financial capital flows. All these measures of correlation are not statistically significant at below 10% level. Again the only outlier in the sample is Thailand, which has positive and significant (at 5% level) correlation between other investment and economic growth. However, there is an insignificant correlation between total financial capital flows and economic growth for Thailand, indicating that financial capital flows, though contributing to capital formation, did not contribute much to economic growth.

The correlation results basically support Propositions 1 and 2. While there is indication that FDI contributed to the capital formation and economic growth in some countries, financial capital flows had no obvious effects on either capital formation or economic growth in the host countries.

The correlation results also provide indirect evidence for Proposition 3. Since financial capital flows fail to demonstrate allocation and production efficiency, the claimed benefits of financial capital flows to the emerging markets cannot be substantiated. The fact that countries suffer from severe financial crises in the wake of large financial capital flows is ample evidence that financial capital flows cause financial crises. Thailand is the only country in the sample country that has a positive relationship between financial capital flows and domestic investment and economic growth, yet it is also the first country that fell off in the Asian financial crises in the late 1990s. The economic damages of financial crises to the emerging markets are due to the characteristics of the financial capital flows (see Yang, 2000).

Volatility of Capital Flows

Table 4 (Panel A) presents the relative volatility of capital flows (measured as the ratio of standard deviation over the mean) for the period from 1974 to 1998 for the sample countries (some countries have a shorter time series due to missing data). It is clear the volatility of all financial capital flows have a much greater volatility than FDI except in one case where the volatility of FDI is greater than the portfolio capital flows for Korea. Korea differs from the rest of the sample in two major aspects. First, Korea has become increasingly an investor in FDI as well as a recipient of FDI in the last quarter century. In fact, from 1990 to 1997 when Korea fell into the financial crisis, Korea had negative net FDI flows each year. Second, during the sample period (1977 to 1997 for Korea), Korea's net FDI flows switched around between positive and negative, hence the relatively large volatility as reported in Table 4 (Panel A). On the other hand, Korea experienced large swings of portfolio and other investment capital flows. In the three years immediately before the financial crisis (1994 – 1996), financial capital inflows were more than 10 times as much as its FDI inflows. These capital flows have been very volatile as indicated in Table 4 (Panel A).

Table 4
Volatility of Capital Flows to Emerging Markets

Panel A: Relative Volatility: 1974 - 1998

	FDI	POR	OTH	FFI
Argentina	0.96	2.28	-2.89	3.27
Brazil	1.52	1.97	-4.65	4.53
Chile	1.19	2.63	2.91	2.43
Indonesia	1.24	3.34	1.75	1.65
Korea	-1.85	1.68	8.68	2.07
Malaysia	0.93	14.55	3.02	2.79
Mexico	0.82	2.57	8.12	2.69
Philippines	1.03	3.72	1.08	1.38
Thailand	1.35	1.62	5.20	3.34

Panel B: Changes From 1996 To 1997

Argentina	-0.26%	13.66%	-119.26%	79.98%
Brazil	59.51%	-52.37%	-527.65%	-66.62%
Chile	-2.64%	115.85%	-26.11%	22.30%
Indonesia	-19.57%	-152.59%	-1095.97%	-197.13%
Korea	-31.56%	-5.86%	-297.45%	-128.89%
Malaysia	0.55%	-7.46%	-145.30%	-153.69%
Mexico	39.68%	-68.99%	-112.29%	-310.32%
Philippines	-18.65%	-88.88%	-40.59%	-59.71%
Thailand	138.86%	22.80%	-269.12%	-211.90%

Note: Relative volatility is calculated as the ratio of standard deviation over the mean.
         See notes for Table 3 for variable descriptions.
Sources: IMF, International Financial Statistics Yearbook 1999.

The fact that financial capital flows are more volatile than FDI flows has also been evidenced in other studies. Albuquerque (2000) documents in sample of 111 countries that 88% of the countries have lower coefficient of variation on FDI than on other net-inflows. The difference in volatility between FDI and financial capital flows to developing countries becomes particularly acute during crisis. Table 4 (Panel B) provides the percentage changes of the various types of capital flows from 1996 to 1997 to illustrate their reactions to the breakout of the Asian financial crises. Take Indonesia for example. FFI flows for Indonesia dropped from a net inflow of $5,253 million in 1996 to a net outflow of $5,102 million – almost a 200% reversal, while FDI to Indonesia dropped from $5,594 million to $4,499 million in 1997 – a 20% decline.

The evidence that FDI capital flows to developing countries are smoother (less volatile) than financial capital flows supports Proposition 4, which states that FDI capital flows better meets the economic development requirement in developing countries than financial capital flows.

Foreign Capital: Debt Servicing and Economic Growth

As discussed in the previous section, one major difference between FDI and foreign debt financing lies in whether there is contractual compensation for foreign capital between the foreign investor and the host country. The foreign investor in FDI bears at least partially the consequences of the investment project's financial performance. Although both the foreign investor and the host country suffer losses when an investment project fails, the host country generally has no binding responsibility to compensate the foreign investor. In that sense the foreign investor shares the risk of foreign investment. Foreign portfolio investment in the host countries equity market is similar in that there is no contractual compensation if the stock markets crash.

Foreign debt financing, on the other hand, is contractual and the host country has the sole responsibility to compensate the foreign investor no matter how the borrowed capital is allocated and used. In this case, whether the host country benefits from foreign capital depends crucially on its ability to generate the cash flows needed to service its debt. More specifically, the cash flows generated by the host country have to match the debt-servicing stream in both magnitude and timing. Although firm- or transaction- specific data on how foreign debt capital performs in the host country are not available, the overall economic growth in the host country should be indicative of the returns of foreign debt investment. The comparison of the host country's economic growth and the cost of borrowing will indicate whether or not the return generated from investment matches the cost of borrowing.

The cost of foreign liability is calculated through the following formula:

$$COD_t = (1 + s_t)(1 + i_t) - 1$$

Where COD_t: denotes the cost of debt, s_t, the percentage appreciation of the currency by which the debt is denominated, and i_t, the interest rate of debt.

The formula indicates that the cost of borrowing has two components: the associated interest rate and the appreciation of the currency in which the debt is denominated. Since most developing countries debts have been denominated in U.S. dollars and on floating rate terms, the U.S. dollar and the dollar interest rate will be used in the calculation. More specifically, the broad nominal index of the value of U.S. dollar published by the U.S. Federal Reserve Board and the three-month Eurodollar interest rate will be used.

Table 5
Cost of Borrowing and GDP Growth for Selected Developing Countries
1974 – 1998

Year	Cost of Borrowing	GDP Growth								
		Indonesia	Korea	Malaysia	Philippines	Thailand	Argentina	Brazil	Chile	Mexico
1974	11.20	7.6	7.9	8.3	3.6	4.4	6.3	8.1	1.0	6.1
1975	7.62	5.0	7.1	0.8	5.6	4.8	-0.7	5.2	-13.3	5.6
1976	5.97	6.9	12.9	11.6	8.8	9.4	-0.2	10.2	3.2	4.2
1977	5.86	8.8	10.1	7.8	5.6	9.9	6.2	4.9	8.3	3.4
1978	8.37	7.8	9.7	6.7	5.2	10.4	-3.3	5.0	7.8	8.3
1979	12.34	6.3	7.6	9.3	5.6	5.3	7.3	6.8	7.1	9.2
1980	14.42	9.9	-2.2	7.4	5.1	4.8	1.5	9.2	7.7	8.3
1981	17.84	7.9	6.7	6.9	3.4	5.9	-5.7	-4.2	6.7	8.5
1982	14.77	2.2	7.3	6.0	3.6	5.4	-3.1	0.8	-13.4	-0.6
1983	10.72	4.2	11.8	6.2	1.9	5.6	4.2	-2.9	-3.5	-3.5
1984	12.18	7.0	10.1	7.8	-7.3	5.8	2.0	1.8	6.1	3.4
1985	8.38	2.5	6.2	-1.1	-7.3	4.6	-6.9	0.4	3.5	2.2
1986	6.36	5.9	11.6	1.2	3.4	5.5	7.1	3.0	5.6	-3.1
1987	6.58	4.9	11.5	5.4	4.3	9.5	2.6	11.8	6.6	1.7
1988	8.31	5.8	11.3	8.8	6.8	13.3	-1.9	6.3	7.3	1.3
1989	10.36	7.5	6.4	9.2	6.2	12.2	-6.9	13.2	10.6	4.2
1990	8.42	7.2	9.5	9.7	3.0	11.2	-1.8	10.2	3.7	5.1
1991	6.31	7.0	9.2	8.6	-0.6	8.6	10.6	3.2	8.0	4.2
1992	4.47	6.5	5.4	7.8	0.3	8.1	9.6	9.5	12.3	3.6
1993	3.90	6.5	5.5	8.3	2.1	8.7	5.7	4.3	7.0	2.0
1994	5.13	7.5	8.2	9.3	4.4	8.6	8.0	1.4	5.7	4.4
1995	6.27	8.2	8.9	9.4	4.7	8.8	-4.0	4.0	10.6	-6.2
1996	5.70	7.8	6.8	8.6	5.8	5.5	4.8	1.1	7.4	5.2
1997	6.75	4.9	5.0	7.7	5.2	-0.4	8.6	4.0	7.6	6.7
1998	5.65	-13.7	-5.8		-0.5	-10.2	4.2	1.1	3.4	4.8
Std	3.57	4.42	4.15	2.99	3.84	4.62	5.33	4.41	6.30	3.82
Corr	1.00	0.15	-0.09	-0.05	-0.05	-0.05	-0.43	-0.21	-0.28	0.27

Note: Std: Standard deviation;

   Corr: Correlation between cost of borrowing and GDP growth of respectively countries in the sample

Cost of borrowing:

   Calculated as $(1+i_t)(R_t/R_{t-1})$, where i is the 3-month Eurodollar interest rate (annualized) and R is the effective exchange rate for the U.S. dollar (broad index).

Data sources:

   GDP growth: IMF, International Financial Statistics Yearbook 1999.

   Eurodollar interest rate and effective exchange rate for U.S. dollar: U.S. Federal Reserve Board.

Table 5 compares the cost of borrowing and economic growth for the sample countries in this paper. In terms of magnitude, the cost of borrowing based on the value of the U.S. dollar and the Eurodollar interest rate has in many cases been much higher than the sample countries' economic growth. During the period of 1979 to 1984, when both the U.S. dollar and the Eurodollar interest rate increased, the economic growth rates of the sample countries were mostly well below the two-digit cost of borrowing. In terms of timing, the sample countries' economic growth rates showed no correlation with the cost borrowing. The results presented in Table 5 provide some evidence to support Proposition 5: there is a mismatch between the cash flows generated from the host country and the cash flows needed to service the contractual foreign financial capital. When such mismatch occurs, the host country has to drain domestic resources to fulfill the contractual obligation for foreign debt. When the host country is unable to do so, financial crisis follows.

The negative impact of foreign debt flows to developing countries has been well documented by prominent scholars for the world debt crisis in the early 1980s. Stanley Fisher (1987) states that "the debt crisis had three causes: imprudent macroeconomic management and borrowing by the debtor countries; imprudent lending by the commercial banks; and the increase in the ex ante real interest rate." Dornbusch (1984, p.210) states, "The large debts due to past policy mistakes of the debtors and events beyond their control combine with high interest rates due to U.S. policy mistakes today. The result is a vast transfer of income from poor people in poor countries to wealth holders in rich countries." Kuczynski (1984, p.87) also observes, "Latin America is now transferring to the commercial banks systematically more than it receives from them, a sharp reversal of the trend which prevailed until 1980." There is also growing agreement that an excessive buildup of short-term debt was a proximate cause of the recent crises, particularly in East Asia (Rodrik and Velasco, 1999). In evaluating the impact of the financial crisis toward the end of the 20th century, Joseph Stiglitz (World Bank, 2000, p. vii) stated that the crisis has increased poverty in the East Asian crisis countries, in Brazil and Russia. Not only has the increase in poverty been significant, whether measured by levels of income or consumption, but the crisis has engendered large costly movements of populations and sharp declines in standards of living for the middle classes.

CONCLUSIONS

Through a stylized framework of foreign investment, this paper compares FDI and FFI flows in their allocation efficiency, production efficiency, and financial impacts on the recipient countries. For FDI, the sources, uses, and income distribution of capital are linked. For FFI flows, the sources, uses, and income distribution of capital are separated. Due to the different linkages in the investment process, this paper proposes that FDI has a better capital allocation and production efficiency than international financial capital flows in the host country. Therefore, the host country may not benefit from international financial capital flows as much as FDI. For financial capital flows to benefit the host country, they have to meet two minimum conditions. First, these flows have to be steady and non-stop. Second, these flows have to generate cash flows for the host country that match the liability servicing requirements. Due to the nature of FFI flows and current stages of the financial market development in developing countries, these conditions are difficult to satisfy. The empirical evidence from macroeconomic level data supports these propositions.

The analyses of this paper have a number of important implications. First, FDI and FFI differ substantially in, among other things, how capital is allocated and utilized. Therefore, application of traditional FDI arguments to FFI is at best being farfetched if not misleading. Second, related to the first point, compared with the FDI literature, studies on FFI are far scarce and lopsided on the financial markets. The impact of FFI on recipients, particularly on developing countries, calls for more theoretical and empirical studies. Third, the experiences of developing countries in introducing FFI flows demonstrate that many developing countries at the current stages of economic and financial development lack a sophisticated financial market to allocate financial capital flows efficiently and

lack the technology and management skills to use foreign capital efficiently. While improvements need to be made in both aspects, the process can take a long time due to the nature of developing countries. In the meantime, developing countries should encourage FDI but avoid excessive international financial capital flows.

While the analysis of macroeconomic data sheds some light on the allocation and production efficiency of FDI and international financial capital flows, the stylized framework and propositions developed in this paper can be further tested using firm-specific or transaction-specific data, providing such highly disaggregated data are available.

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