

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

There are ongoing debates on the economic impact of foreign direct investment (FDI) on host countries, especially developing countries. These debates assume special importance in view of recent changes in the composition and direction of FDI, and liberalization of government policies towards FDI in developing economies.

There is conflicting evidence in the literature regarding the impact of multinational enterprises (MNEs) and FDI on both transitional and long-term economic growth. While some studies, both theoretical and empirical, indicate that FDI may have a strong positive effect on growth rates in developing countries, others suggest that these positive effects may not be unconditional, and point to the lack of technological spillovers and the possibility of enclave economies developing.

The discussion participants range from the extremely radical Marxists who see only the negative aspects of foreign direct investment and multinational corporations (MNCs), to the most conservative classicalists who consider foreign investment and MNCs as definitely worthwhile contributions to the host economy. Between these two extremes, there are such schools of thought as 'dependencia', nationalist, neoclassical, business, and so on.

The first serious discussion about the effects of FDI on host countries date back to the late 1950s, when neo-classical economists started to analyze the implications of capital movements in standard models of international trade. Treating foreign investment simply as a capital flow between countries, it was shown that foreign investment and trade could be substitutes for each other and that both were welfare-improving (**MacDougall, 1960**). The liberal attitude towards FDI during the immediate post-war period was consistent with this theoretical understanding.

The unreservedly positive picture of the impact of FDI on host-country welfare changed dramatically by the end of the 1960s. Academic literature began to emphasize the connection between market imperfections and foreign investment, with focus on market structure issues. In line with **Hymer (1960)**, FDI was often seen as a result of oligopolistic home-country markets, and it was feared that FDI would spread the market imperfections of the industrialized countries to the rest of the world. The earlier discussions of potential gains from the inflow of foreign capital in terms of tax revenues, economies of scale and external economies gave way to analyses of transfer pricing, uneven development, and 'dependency' in general. Host country governments also began to regulate the operations of foreign multinationals, and many foreign-owned firms, particularly in the primary sector, were nationalized during this period.

With the failure of import substitution in Latin America and Africa, the apparent success of the more outward-orientated Asian NICs, and the debt crisis of the early 1980s, attitudes towards multinationals changed again. More attention

was directed to research suggesting that various positive external effects or 'spillovers' of foreign investment were important determinants of the development of host country industry (**Blomstrom, 1989**). The importance of multinational corporations for the international diffusion of technology, as well as their central role in world trade, was emphasized. A general conclusion of this change in focus has been that foreign direct investment is now perceived as being an important determinant of economic growth in developing countries.

2.2 Contribution of FDI to Economic Growth

Available literature indicates that authors have adopted various approaches in exploring the relation between foreign capital and economic growth in the Asian developing countries. Several have investigated the relationship between foreign capital, domestic savings and capital formation, while others have examined the relationship between foreign capital and investment efficiency. Yet others have examined directly the relationship between foreign capital and economic growth.

The impact of foreign capital on the economic growth of developing countries as well as the relative significance of the various types of foreign capital is controversial. Assuming that every dollar of foreign inflows augmented resources available for capital formation by a dollar and further that such inflows did not influence the incremental capital-output ratio, earlier studies have shown that foreign capital had a favorable effect on growth (**Rosenstein-Rodan, 1961; Chenery and Strout, 1966**). Both of these assumptions have been challenged

(Leff, 1969; Griffin, 1970; Weisskopf, 1972; and Areskoug, 1973). Foreign capital could substitute for domestic saving for two reasons: First, the inflow of foreign capital could induce governments to relax their tax efforts, increase their consumption expenditure, and/or liberalize imports. Second, foreign private investment could crowd out domestic investment and if saving is determined by available investment opportunities, this could cause domestic savings to fall. Foreign capital could also contribute to inefficiency by introducing inappropriate techniques and technology and managerial systems. Under these circumstances, foreign capital could have an adverse effect on growth.

Dunning (1970) evaluated the relationship between US FDI and economic development gained through technology in Europe using data in 1950s and 1960s. His findings were positive. According to Dunning's study, Europe has leaned heavily on the US for technology in this period. US FDI in Europe were strongly concentrated in the research intensive and growth sectors. Hence strong technological impact caused rapid growth in Europe.

Empirical evidence on the impact of foreign capital on growth has focused on estimating a neoclassical production function where economic growth is determined by the accumulation of the factors of production, i.e., labor and capital, with the latter differentiated by source, domestic or foreign. Studies (Papanek, 1973; Stoneman, 1975; Dowling and Hiemenz, 1983; Gupta and Islam, 1983) have generally indicated that foreign inflows have contributed favorably to the economic growth of the Asian and Pacific developing countries.

A regression analysis done for the advanced developed countries (ADCs) by **Lee, Rana and Iwasaki (1986)** found that foreign capital inflows had made a positive contribution to the growth of ADCs. According to this study, while FDI has contributed to growth both by augmenting resources available for capital formation and increasing the incremental capital output ratio, which is the annual change in GDP divide by the gross fixed capital formation. The evidence also implies it has tended to decrease incremental capital output ratio.

The advent of endogenous growth theory (**Barro and Sala-I-Martin, 1995**) has encouraged research into the channels through which FDI can be expected to promote growth in the long run. If growth determinants are taken as endogenous, and FDI is thought of as a composite bundle of capital stocks, know-how and technology (**Balasubramanyam, 1996**), there are different ways in which FDI can be expected to affect growth in theoretical models. In general, the impact of FDI on growth is expected to be manifold. The impact is expected to be greater, the greater the value-added content of FDI-related production, and productivity spillovers associated with FDI by which FDI leads to increasing returns in domestic production. Also, FDI is believed to be a very important source of human capital augmentation and technological change in developing economies, since it promotes the use of more advanced technologies by domestic firms and provides specific productivity-increasing labor training and skill acquisition.

Through capital accumulation in the recipient economy, FDI is expected to be growth-enhancing by encouraging the incorporation of new inputs and technologies in the production function of the recipient economy. In the case of

new inputs, output growth can result from the use of wider range of intermediate goods in FDI-related production (Feenstra and Markusen, 1994). In the case of new technologies, FDI is expected to be potential source of productivity gains via spillovers to domestic firms.

Macroeconomic studies – using aggregate FDI flows for a broad cross-section of countries – generally suggest a positive role for FDI in generating economic growth especially in particular environments (De Gregorio, 1992). For instances, Borensztein, De Gregorio, and Lee (1998) find that FDI increases economic growth when the level of education in the host country—a measure of its absorptive capacity—is high. The World Bank's latest *Global Development Finance* (2001) report summarizes the findings of several other studies on the relationships between private capital flows and growth, and also provides new evidence on these relationships.

While Blomstrom, Lipsey, and Zejan (1994) find no evidence that education is critical, they argue that FDI has a positive growth-effect when the country is sufficiently rich. In turn, Alfaro, Chandra, Kalemli-Ozcan, and Sayek. (2000) find that FDI promotes economic growth in economies with sufficiently developed financial markets, while Balasubramanyam, Salisu, and Dapsoford (1996) stress that trade openness is crucial for obtaining the growth-effects of FDI.

Macro-empirical analysis of the effects of FDI on growth is largely based on the single equation time averaged cross-section estimation approach, with or without instrumental variables. For example Balasubramanyam, (1999,1996) use

cross-sectional annual data averaged over the period 1970-85 for a sample of 46 developing countries and find that the size of the domestic market, the competitive climate in relation to local producers and interactions between FDI and human capital exert an important influence upon growth performance. Their analysis indicates that FDI is more productive in countries that have pursued export promotion rather than import-substitution policies.

Borensztein, De Gregorio and Lee (1995) developed an endogenous growth model in which FDI increases long run growth through its effect on the rate of technological diffusion from the industrialized world to the host country. They use seemingly unrelated regression (SUR) with instrumental variables (IV) estimation to conduct cross-country analysis of 69 developing countries with panel data averaged over two separate time-periods 1970-79 and 1980-89, where the dependent variables are per-capita GDP growth rates over each decade. They conclude that FDI by itself, has positive but insignificant effect on economic growth. Only when a country has a minimum threshold stock of human capital is FDI an important determinant of economic growth; in that case, it actually contributes to growth more than domestic investment does. In addition, the authors find that FDI has the effect of increasing total investment in the economy more than one for one. At the macroeconomic level, growth regressions carried out by **Borensztein, De Gregorio, and Lee (1998)** and **Carkovic and Levine (2000)** find little support that FDI has an exogenous positive effect on economic growth.

Another dominant view is the dependency hypothesis emphasizes the risks that multinational enterprises (MNEs) pose to the developing countries. In the short run, an increase in FDI will increase investment and consumption, consequently result in higher economic growth. However, as FDI accumulates, there will be adverse effects on the rest of the economy that reduce economic growth. In the long run, the effect of FDI is negative. This is due to intervening mechanisms of dependency, in particular, domestic "decapitalization" and "lack of linkages" (Bornschier, 1980). MNEs monopolize rather than inject new capital resources, displace rather than generate or reinforce local business, and worsen those countries' balance of payments problems.

Fry (1993) investigated differential impacts of FDI in Southeast Asia. He concluded that FDI raises the rate of economic growth in the absence of financial repression and trade distortions in the sixteen sample developing countries taken together. He further stated that financial repression as measured by the real deposit rate of interest and trade distortions as measured by the black market exchange rate premium can both cause FDI to immiserizing, when the domestic country is distorted, FDI inflows are associated with a low or negative growth. When real interest rates are positive, however, FDI can accelerate the rate of economic growth more when restrictions on the sectoral location of this investment are relaxed.

2.3 Foreign Capital, Domestic Savings and Capital Formation

There are some economists who suggested that there is an adverse effect of foreign capital inflows on domestic savings of a developing country. According to **K. Griffin and J. Enos (1970) and Thomas Weisskopf (1972)**, there is a possible reduction in domestic savings, both private and public, as a result of foreign capital inflows. FDI is said to reduce the incentives to save and also stimulate a higher consumption level for imported goods, made available through the foreign capital inflows. In other words, foreign capital inflows and domestic savings are seen as substitutes. The underlying rationale for this hypothesis is that the foreign capital supplements the country's available resources, and it can be assumed that a portion of the additional financial resources will be allocated toward current consumption. With current consumption increases at a given income level, domestic savings would fall. However, there is no empirical evidence of this negative relationship (**Papanek, 1973; Morriset, 1989**).

Several attempts have been made to estimate the relationship between savings and foreign capital in the Asian developing countries. In one study, using time series data from 1960-1980, it was found that in all four sample countries (Bangladesh, Republic of Korea, Nepal and Thailand), foreign capital had a negative effect on domestic saving (**M.Fry, 1984**). In other words, foreign capital had a negative effect on domestic saving. In another study, using cross-section data from 18 Asian countries, it was found that while foreign private capital had a favorable impact on the Asian saving rate, official aid had a highly negative or a substitutive effect (**Gupta and Islam, 1983**).

The relationship between foreign capital and capital formation in the Asian developing countries has also been examined (**E. Go, 1985**). It was found that foreign financial flows tended to augment investment. The results, using pooled data from 13 countries for the period 1968-1982, indicated that 1 per cent increase in foreign capital inflows increases the investment rate by two-tenths of 1 per cent.

A comprehensive study by **Bosworth and Collins (1999)** 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. The authors 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 appears to bring about a one-for-one increase in domestic investment; there is virtually no discernible relationship between portfolio inflows and investment (little or no impact); 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. Bosworth and Collins conclude: "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."

2.4 Theory of Foreign Capital

The role of foreign capital as a determinant of growth in the developing countries is a controversial subject. A group of economists in the 1950s and 1960s showed that foreign capital inflows had a favorable effect on the growth rate. These economists assumed that all capital inflows constituted net additions to a less developed country's (LDC's) productive resources without in any way substituting for savings made available from domestic sources and further that such inflows had no effect on the incremental capital-output ratio of the recipient country. This favorable effect was illustrated sometimes through the use of the Harrod-Domar mode and at other times through the use of the two-gap models where inflows facilitated and accelerated growth by removing the foreign exchange and/or domestic saving-investment gap.

This position, however, came under attack in the early 1970s. A group of economists argued that given any plausible welfare function, which includes present and future consumption among its arguments, optimal allocation of resources would lead to the conclusion that part of the foreign capital will be allocated to present consumption and the remainder to augment resources available for investment.

Two hypotheses were advanced to explain how foreign capital could lead to a decline in domestic savings. First, foreign capital could induce governments to relax their tax efforts and increase their consumption expenditure or else to liberalize imports. Second, private foreign investment pre-empts investment

opportunities and displaces domestic investment. If saving is determined by available investment opportunities, this would cause domestic savings to fall.

2.4.1 Foreign Capital and Growth

It is generally accepted that growth is a function of investment and other factors. Foreign capital inflow, by bringing in new investible funds and foreign exchange, would help the less developed country to achieve higher investment rates and thus accelerate growth.

As Alexander Hamilton said "Foreign capital instead of being viewed as a rival ought to be considered as a most valuable auxiliary, conducing to put in motion a greater quantity of productive labor and a greater portion of useful enterprise than could exist without it."

The orthodox position, for example, Rosenten-Roden (1961) and Chenery and Strout (1966), see foreign capital inflow as a supplement to local capital resources. According to them, all capital inflows constitute to local net additions to less developed country's productive resources, thus increasing its growth rate.

The effect of foreign capital inflow on growth can be seen through the well-known Harrod-Domar model which is

$$\Delta y = n \Delta K = nI \quad (1)$$

and two identities,

$$I - S = M - X \quad (2)$$

$$F = M - X \quad (3)$$

where Δy = change in output

$\Delta K = I$ = change in capital stock or investment

n = incremental capital output ratio i.e. the multiplier which relates
the investment rate to growth.

S = total savings

M = total imports

X = exports

F = foreign capital inflow

Substituting equation (2) and (3) in (1), we get

$$g = \Delta Y/Y = n (S/Y + F/Y)$$

g = output growth rate i.e. $\Delta Y/Y$

S/Y which in a closed economy, at equilibrium is
equal to the investment rate I/Y

Given an investment rate, which is equal to the saving rate and capital output ratio, the resultant growth rate can be determined. If the existing savings rate is insufficient to meet the desired growth rate, the domestic savings-investment gap can be bridged with foreign capital inflows.

In the above formula, as long as n is independent of S/Y and FCI/Y , both domestic and foreign resources have favorable effect on growth. FCI augments domestic savings and increases the investment rate, which accelerates economic growth.

Foreign capital inflows can also lead the LDCs to eventual self-sustained growth. Higher investment rates achieved with foreign capital supplements would

increase the domestic savings rate. Eventually, the higher domestic savings rate should be the main source of funds for investment activities without needing any further inflows of foreign capital.

Thus, Mc Kinnon (1964) wrote: Aid or private investment is likely to be offered on the assumption that a higher growth rate in the receiving country will eventually become self-sustaining, i.e., domestic savings and export capabilities will rise to the point where foreign capital transfers become unnecessary for this growth rate to be maintained.

Most LDCs, do not have adequate capital goods to meet the desired investment level. In addition, there are limited substitution possibilities between imported and domestic inputs. The required inputs have to be imported by financing with foreign exchange.

Based on the 'two-gap' model developed by Hollis Chenery and his associates, FCI makes up for any foreign exchange shortages by bringing in foreign exchange to pay for the necessary imports of capital and intermediate goods.

FCI, particularly FDI may be accompanied by technical assistance and expertise, scarce managerial skills, marketing know-how and international market linkages, and the creation of new export opportunities.

This orthodox position has been challenged by radical economists like Griffin and Enos (1970) and Weisskoff (1972), among others, who take the view that FCI is a substitute and not a compliment to domestic capital resources. They argue that FCI has exercised a depressing effect on the savings propensities of

developing countries, thus leading to a reduction of the domestic saving rates and lower rates of capital formation, and consequently, lower rates of growth.

Many studies have attempted to examine the relationship between foreign capital, capital formation and growth. While Voivodas (1973) and Go (1985) have estimated an investment function where foreign capital is one of the independent variables, Stoneman (1975), Papanek (1973), Dowling and Hiemenz (1983) and Gupta and Islam (1985) have estimated a neoclassical production function of the type $Y = f(K_d, K_f, L)$, where Y denotes output, K_d domestic savings, K_f foreign capital and L labor force. These studies using pooled cross-section time-series data have found that foreign capital is associated with rapid capital formation and growth in developing countries.

Go has estimated an equation of the type $I = f(GNPR, F, OF)$, where I denotes the investment rate, $GNPR$ real GNP, F net foreign flows and OF investment outflows. Her results using data from Asian countries indicate that a 1 per cent increase in foreign capital inflows increases the investment rate by two-tenths of 1 per cent.

The regression analysis, which permits a simultaneous determination of the economic growth and domestic saving rate, used by Jungsoo Lee, Pradumna B. Rana and Yoshihiro Iwasaki in examining the effects of foreign capital inflows on developing countries (1986), shows that foreign capital inflows have made a positive contribution to the growth of Asian developing countries. Among various types of foreign capital, the positive role was most significant in the case of foreign direct investment (FDI). The regression analysis also found that foreign

aid, export performance, growth of labor force and domestic savings contribute favorably to growth.

Table 2.1 summarizes the available studies on the relationship between foreign capital and growth. They indicate that both the domestic saving rate and the various components of foreign capital have had a favorable effect.

Table 2.1: Impact of Foreign Capital on Growth: Review of Earlier Studies for Asia

Variables ¹	Papanek	Stoneman ²	Dowling-Hiemenz ³	Gupta
Constant	1.5 (1.5)	0.642 (0.71)	0.47	-0.02 (1.26)
S/Y	0.21 (4.2)	0.275 (6.81)	0.24 (4.54)	0.30 (3.59)
FPI	0.35 (1.7)	1.142 (2.58)	0.72 (2.72)	0.65 (1.49)
RFI	0.13 (0.8)	-	-	0.24 (1.04)
FPIC	-	0.018 (0.91)	-	-
GLF	-		-	0.70 (1.92)
GDPN	-		-	0.000006 (0.9)
R2	0.46	0.668	0.43	0.70

¹. S/Y denotes the saving rate, AID is foreign aid as percentage of GNP, FPI is foreign private investment including long-term borrowing as percentage of GNP, RFI is other financial flows (primarily short-term and errors and omission as percentage of GNP), EPIC is cumulated foreign private investment, GLF is growth of labor force and GDPN is per capita GDP.

². AID includes RFI

3. Do not include RFI or short-term flows as an explanatory variable.

2.4.2 Foreign Capital and Savings

Definition and Model Specification for Savings

Overall savings, represented by gross domestic savings (GDS), is defined as the difference between income and consumption, i.e.:

$$Y = C + I = C + S$$

$$S = Y - C = I$$

where S = gross domestic savings

Y = GDP

C = consumption

I = investment

The saving rate is defined as S/Y, i.e. gross domestic savings scaled against GDP.

The traditional Keynesian-type saving function is augmented by export variables, per capita income, rate of income growth, the population structure and many other variables.

According to the absolute income hypothesis, the savings rate increases with the per capita income level by assuming that the marginal propensity to save (MPS) is higher than the average propensity to save (APS). Thus, as per capita income increases, the relatively higher marginal savings rate will pull up the average propensity. Since the average propensity is the same as the savings rate, i.e. $APS = S/Y$, the savings rate can thus be expected to be positively related to per capita income.

Under the "life cycle hypotheses" developed by Modigliani and Brumner, the savings rate is a positive function of the rate of income growth. This hypothesis maintains that saving results mainly from a desire to provide for consumption in old age. A growing economy, by generating higher lifetime incomes, can therefore be expected to have positive effects on savings. This hypothesis is also expected changes in the structure of the population to effect the savings rate. This effect can be tested by using either "the dependency rate" or other measurements such as the rate of population growth, the labor participation rate and others as proxies.

Export performance is also expected to have a favorable influence on the savings rate. Exports, especially of primary products, often result in highly concentrated incomes, and standard savings theory shows that the propensity to save from such income is high (Papanek 1972). Also, countries whose export performance is good tend to face fewer foreign exchange constraints on investment and therefore tend to provide more of an incentive to save.

Clarification of Foreign Capital Coefficient in the Savings Equation

FCI received by recipients will be either wholly or only partly consumed. A portion of FCI used for consumption may substitute for domestic savings, while the remainder may augment capital formation and accelerate growth. It was argued that the portion of FCI used for consumption will reduce the savings rate of the recipient country, and not the savings level even if all the FCI is consumed. The absolute volume of savings will only be reduced if all FCI is consumed while part of the hitherto saved locally available resources is also consumed.

Newly (1977) clarified the difference between an absolute and a relative reduction in the savings rate. He pointed out if the FCI coefficient in the savings equation lies between 0 and -1.0, it merely indicates that only a part of the FCI has been consumed. This means that FCI has only negatively affected the savings rate, but has not reduced the absolute level of savings. Here, FCI appears to have had a substitute effect on savings. But if the coefficient value is less than minus unity (-1.0), it means that the volume of investible resources or total savings has been reduced by the inflow of foreign capital. this explanation can be clarified by using the following equation where

Total investment = total savings or

$$I = S + F$$

where S = domestic savings

F = foreign capital which is assumed to be equal to foreign savings.

Therefore, the total effect of FCI on investment can be shown as:

$$\partial I / \partial F = \partial I / \partial S \cdot \partial S / \partial F + \partial I / \partial F$$

$$= \partial S / \partial F + 1$$

$$\text{since } \partial I / \partial S = \partial I / \partial F = 1$$

Thus, as long as $\partial S / \partial F$ is less than minus unity (-1.0), any flow of foreign capital will reduce the total investible resources or total savings.

Finally, should the foreign capital coefficient in the savings equation found to be significantly positive, then one could say that foreign capital has a catalytic effect on domestic savings. Here, foreign capital appears to complement domestic savings.

Table 2.2 shows the results of past studies with the foreign capital coefficient mostly between 0 and -1.0. This suggests that only a part of foreign capital was consumed, resulting in a reduction of the savings rate, but not in the absolute levels of savings.

Savings Hypotheses

Savings are needed to maintain capital stocks and to reduce the country's dependency on foreign capital and foreign owned assets. However, with the low incomes of LDCs, domestic savings are usually insufficient to finance capital formation, and this gap is bridged by inflows of foreign capital.

There is considerable literature on the role of foreign capital inflow in supplementing domestic savings in developing countries. Orthodox theory has

treated FCI as a complement to domestic savings to finance investment, which will accelerate the economic growth rate of a country.

Departing from the orthodox position, Trygve Haavelmo (1963) hypothesized that domestic savings depend directly on income and relate negatively to foreign capital inflows. His hypothesis relating investment, GNP and capital inflows can be written as:

$$I(t)=[Y(t)+H(t)] \quad (1)$$

where I = gross investment

Y = GNP

H = capital inflows.

Haavelmo saw investment as a function of income, including what a country gets from abroad, and domestic savings could be negative if H or FCI is large enough.

Rahman (1968) interpreted this to mean that domestic savings depend not only on income, but also, negatively on FCI and tested this hypothesis. For this purpose he made a slight modification, postulating that:

$$I(t) = aY(t)+bH(t) \text{ and since } I(t) = S(t)+H(t)$$

Where $S(t)$ = domestic savings.

The domestic savings function can be written as:

$$S(t) = a Y(t)+b'H(t)$$

where $b' = b-1$. Hence $S(t) = aY(t)+b'H(t)$

(2)

Using equation (2) to test Haavelmo's hypothesis, Rahman concluded that it was quite likely that foreign capital was used not only to augment investment, but

also as a substitute for domestic savings. From this, he advanced the behaviouristic hypothesis that governments in developing countries may voluntarily relax the domestic savings effort when more foreign aid is available than might be the case otherwise.

A number of other authors, Areskoug (1973) and Griffin and Enos (1970), estimated a saving function in the form $S = f(Y, F)$, where S denotes the domestic saving rate (obtained by expressing an indirect estimate of domestic saving as percentage of GDP), Y the growth rate, and F the foreign capital as a percentage of GDP, using cross-section data.

They found that the estimated coefficient of the F variable was negative but less than unity in absolute terms, so they concluded that foreign capital substituted partly for domestic saving. Similar conclusions were reached by Weiskopf (1972) who estimated an ex ante saving function using both cross-section and time-series data from LDCs. Papanek (1972) improved on the earlier studies by disaggregating financial flows into three components, but the results of his regressions using pooled data relating to the 1950s and 1960s showed that all three components had a negative effect on the domestic saving rate.

By and large, it is safe to conclude that although most studies have found a negative relationship between foreign capital and domestic savings, only a few of these studies have found that the coefficient of the foreign capital variable is less than minus unity and that foreign capital reduces total savings. These findings, therefore, suggest that when analyzing the impact of foreign capital on economic growth a more pragmatic approach should be taken. While a portion of foreign

saving is used for consumption and may substitute for domestic saving, the remainder augments capital formation and growth.

Two different authors have attempted to estimate the relationship between savings and foreign capital in the Asian region. Fry (1984) using time series data from 1960-1980 found that in all four countries in his sample (Bangladesh, Republic of Korea, Nepal and Thailand) foreign capital had a negative effect on domestic saving. Only in one country (Bangladesh), however, was the substitution effect less than minus unity.

Gupta and Islam (1983) using cross-section data from 18 Asian countries (including Japan) have found that while foreign private investment has had a favorable effect on the Asian saving rate, and that AID has had a highly substitutive effect. The magnitude and sign of the AID variable in the Asian case, however, come as a surprise because they find it to be positive in other developing regions. They, however, offer no explanation. When the authors estimated a saving function with total financial flows as the explanatory variable, they did not find a substitute effect.

Table 2.2: Impact of Foreign Capital on Domestic savings:
Review of Some Previous Studies

Variables	Rahman	Gupta	Papanek (1)	Papanek (2)	Papanek (3)	Gupta & Islam
Intercept	0.1427 (NA)	0.11083 (12.6)	-6.4 (-1.4)	13.3 (-3.2)	11.4 (12.1)	0.230 (8.36)
F/Y	-0.2473 (-2.568)	0.0310 (0.39)	-0.73 (-6.7)	-0.64 (-7.5)		
AID					-1.00 (-7.1)	-2.604 (-2.49)
FPI					-0.65 (-3.5)	1.042 (0.57)
RFI					-0.38 (-1.6)	-1.426 (-1.81)
Ln y			4.1 (5.1)	3.69 (5.7)		
Ln (POP)			0.52 (1.3)	1.6 (4.3)		
Primary export				0.28 (7.3)	0.20 (5.4)	
Other exports				1.13 (5.7)	1.50 (7.0)	
Adj R ²	N.A.	0.055	0.45	0.72	0.62	0.31