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DIRECT FOREIGN INVESTMENT'S IMPACT ON PRIVATE CAPITAL FORMATION IN SUB-SAHARAN AFRICA.

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Background and Objective

Foreign direct investment (FDI) refers to the ownership of assets in a foreign country. It occurs in two ways. One way involves the acquisition of domestic firms by foreign investors, including the purchase of stocks in domestic corporations in which the foreign investor has significant equity. The other method of foreign direct investment is the construction of new production facilities in the foreign country - either brand-new subsidiaries or expansion of existing subsidiaries. Foreign direct investment involves not only a transfer of resources but also the acquisition of control. In most cases, the subsidiary not only have a financial obligation to the parent company, but it is part of the same organizational structure.

Multinational corporations are the major players in foreign direct investment. They often establish new businesses in foreign countries or provide the foreign subsidiaries with capital, in the expectation of creating a profitable integration of their operations. Many factors determine multinational corporations' decision about where to locate foreign subsidiaries or undertake significant foreign direct investment. The key factors in the location of foreign subsidiaries include low unit labor costs, adequate economic infrastructure, large domestic markets, government regulations, and political instability in the host country. Most big corporations now

have foreign subsidiaries supplying components to the parent company or producing the same good or service. For example, the big petroleum companies have refineries all over the world and the big automobile companies depend on imported components produced by their own foreign subsidiaries.

A large proportion of foreign direct investment involves two-way flows among industrial countries: Japanese and European firms expanding their subsidiaries in the United States and U.S. firms expanding their subsidiaries in Europe and Japan. In recent years, however, foreign direct investment in developing countries has increased substantially. In the first half of the 1980s, for instance, developing countries received about 26 percent of world foreign direct investment and in the second half of the 1980s, 16 percent. In the early 1990s, the share of these countries increased rapidly and reached a peak of about 40 percent in 1993. The reasons for the increased foreign direct investment in these countries can be traced to the adoption of liberal economic policies by many countries, in particular the encouragement of foreign capital, and the growing recognition by the industrialized countries of the potential for rapid growth in these economies.

The flows of foreign direct investment to developing countries, however, have been unevenly distributed. The fast growing Asian economies have greatly benefited from these increases. Of the total of $161.34 billion in foreign direct investment flowed to developing countries during 1983 to 1990 period, $89.61 billion (55.5 percent of the total) flowed to Asian countries. The large domestic markets together with strong industrial capabilities, good infrastructure and liberal investment policies helped these countries to secure large inflows of foreign direct investment.

Sub-Sahara African countries, on the other hand, have not been able to attract foreign direct investment on a large scale. For example, during 1983 to 1990 period only $10.07 billion or 6.2 percent of the total, flowed to these countries. Many factors have restricted these countries from receiving large inflows of foreign direct investment. They include, among others, "the falling global demand for most of

their primary exports, often coupled with high level of external indebtedness; their persistently small domestic investment and slow economic growth; their small domestic markets; their poorly developed physical infrastructure, often including difficult and expensive transport and communication links with the outside world; a poorly skilled labor force; and, continuing civil conflicts, political crises and natural disasters (especially drought)" (UNCTAD, 1994, p. 62 and p. 95).

The rapid increase of foreign direct investment since the late 1970s has prompted much research on its contribution to economic growth. In particular, the research linking foreign direct investment to the economic performance of developing countries has been large and highly diverse, as much so in its methods of analysis as in its conclusions. A number of studies inspired by H. Chenery and M. Syrquin (1975), G. Ranis (1976), C. Kindleberger (1979), and Gerald M. Meier (1989), advocated that FDI constitutes a transfer not only of physical capital but also of new technology, managerial talent, and foreign market access that otherwise would not be available to developing countries, or would be available only at significantly greater cost. To the extent that FDI involves transfer of scarce resources, output and employment in the host developing countries will be "stimulated directly from the production by foreign corporations and indirectly with the multiplier effects from the spending of the income generated in the economy" (Peter Hess and Clark Ross, 1997, p.495).

FDI also boosts investment in other industries "by putting nonused resources to work, by encouraging local suppliers to act as suppliers and distributors for foreign corporations, and by helping disseminate efficient foreign product techniques and management styles to local businesses" (John M. Rothgeb, Jr. 1989, pp. 82-3). Meanwhile, FDI directed at heavy intermediate or capital goods industries is more likely to facilitate additional investment than FDI directed at specific consumer goods industries.

FDI improves the balance of payments and current account substantially if it is directed towards the production for exports or import replacement (Peter Hess and Clark Ross, 1997, p.496). The government budget balance also improves through high tax revenue from corporate profits, salaries of employees, and sales tax on finished goods and services.

Other studies however concentrated on the adverse effects of FDI on economic growth (Harry G. Johnson, 1970; R.E. Caves, 1971; K. Griffin, 1972; H. Magdoff, 1976; V. Mahler, 1980). Among the many criticisms of FDI that have been mentioned are the following: displacement of domestic resources and discouragement of local entrepreneurship; the creation of a foreign enclave with little or no economic contact with the local economy; the inadequate effort made to train and develop local managerial and technical talent and draining off to other countries the best talent that is developed; the failure to participate more actively in community development, or alternatively, participating too actively in local matters; the lack of co-operation with host governments and a failure to co-ordinate investment and production policies with the development priorities of the country; the creation of less competitive markets in the long-run within the host country; and an inappropriate demonstration effect in consumption. In recent years, the argument focused on the cost of attracting foreign capital. The wide range of incentives (tax concessions, supply of raw materials at subsidized prices, access to foreign exchange) that developing countries adopt to attract foreign investment have invariably led to inefficient allocation of resources. Furthermore, the surplus of capital produced in these countries has been "drained off by foreign interests" in the form of "profit repatriation and interest payments". This has reduced their ability to marshal the domestic investment needed to promote economic growth.

The objective of this paper is to investigate the important aspects of macroeconomic effects of foreign direct investment on capital formation in Sub-Saharan African countries. Such an investigation is necessary because the nature of

the relationship may have important implications for future economic growth of the region. To achieve this objective, a model is constructed consisting of FDI as one of the explanatory variables in the determination of domestic investment. Using data from the World Bank, the International Monetary Fund (IMF), and the United Nations Conference on Trade and Development (UNCTD), Division on Transnational Corporations and Investment, this paper estimates the contribution of FDI to growth of domestic investment in this region. On the basis of the results, inferences are made as to the measures that could be employed to stimulate capital formation in the region.

The remainder of the paper proceeds as follows. In section II, we present a brief overview of domestic investment and FDI flows to Sub-Saharan African countries over the last two decades. The empirical model is specified and estimated using aggregate data of Sub-Saharan African countries in sections III and IV. The last section is devoted to a summary of the main findings and some concluding remarks.

FOREIGN DIRECT INVESTMENT FLOWS TO SUB-SAHARA AFRICAN COUNTRIES

Table 1 shows the performance of Sub-Saharan Africa with regard to capital formation. This region experienced a decline in gross domestic investment during the 1980's. Domestic resources failed to meet the investment requirements. As a result, most of the countries in this region relied heavily on foreign aid and grants to facilitate the process of capital accumulation.

Table 1

Investment and Saving in Sub-Saharan African Countries

Year	Gross Domestic Investment (% of GDP)	Gross Domestic Saving (% of GDP)
1980	20.2	21.7
1981	20.5	14.8
1982	17.2	10.7
1983	13.7	9.8
1984	10.4	10.9
1985	11.6	12.4
1986	14.6	11.4
1987	15.6	13.0
1988	15.6	12.3
1989	15.6	13.1
1990	14.2	16.6
Annual Average		
1975-79	21.5	18.9
1980-85	15.6	13.4
1986-90	15.1	13.3

Source: UNDP and World Bank, African Development Indicators, Washington D.C.: World Bank, 1992, pp.22 and 26.

This region was not able to attract foreign direct investment (FDI) on a large scale to facilitate the process of capital formation. It attracted a mere 6.2 percent of the FDI flow to developing countries despite the rapid increase of foreign investment flow to developing countries in the 1980's (Table 2).

Table 2

FDI Inflows to Developing Countries, 1983-90 (Billions of US Dollars)

	All LDC	Africa	Asia	Europe	Middle East	Latin America
1983	16.29	1.19	5.84	0.16	5.59	3.51
1984	16.13	1.11	5.47	0.22	6.10	3.23
1985	12.25	0.75	5.06	0.19	2.23	4.02
1986	13.24	0.55	7.16	0.21	2.29	3.12
1987	18.33	1.39	12.67	0.20	-0.14	4.22
1988	25.33	1.20	16.15	0.47	1.45	6.06
1989	31.13	2.68	18.80	1.05	1.87	6.73
1990	28.65	1.20	18.55	1.18	0.39	7.32
1983-90	161.34	10.17	89.61	3.68	19.78	38.21
% of total	100.00	6.20	55.50	2.30	12.30	23.70

Source: IMF, Balance of Payment Statistics, Yearbook (Washington D.C., IMF, 1990 and 1991) and UNCTD, Center on Transnational Corporations, World Investment Directory, 1994.

Not only is the FDI flow to this region low, but the bulk went to a handful of oil and mineral exporters. For example, only five countries - Nigeria, Egypt, Angola, Cameroon and Gabon, received over 60 percent of FDI flows between 1980 and 1992. Four-fifth of this total flowed to two oil-exporting countries - Nigeria and Egypt (Table 3). These countries' share accounted for over 80 percent of the flows into Africa during the first half of the 1980's.

Many of the region's current difficulties in attracting FDI can be traced to the persistently slow economic growth and failure to participate in the globalization process. This region recorded GDP growth rates of 2.5 percent per annum during 1986-90 period and 1.2 percent during 1991-93. These rates are substantially lower compared to other regions in Asia and Latin America. Now, 45 Sub-Saharan African countries' GDP accounts for only 1.44 percent of global GDP. Their share of world trade that was almost 3 percent in the mid-1950s fell to 1 percent in 1995. The slow progress, often coupled with high level of external indebtedness, poorly developed physical infrastructure, an inadequate supply of skilled labor force, and political instability have prevented this region from receiving large inflows of FDI.

Modeling the Foreign Private Investment and Domestic Capital Formation Relationship

The basic macroeconomic identity shows that the sum of all the expenditures on national output is equal to the sum of the income generated in the production of national output. That is,

$$C + I + G + X - M = GDP = C + S + T + R + F$$

Where C = personal consumption expenditures

I = gross private domestic investment

G = government purchases of goods and services

X - M = net exports (exports minus imports)

S = gross private domestic saving

T = net taxes (tax revenues less government transfers)

R = net transfers to foreigners (or the rest of the world)

F = net factor payments to foreigners (or the rest of the world).

Table 3
Foreign Direct Investment Inflows
to Selected African Countries (Millions of Dollars)

	Annual Averages				
	1982 –87	1988	1989	1990	1991
Africa	1878	2776	4891	2160	2713
Oil Exporting	1551	2079	3521	1239	1840
Egypt	809	1190	1250	734	253
Nigeria	371	377	1882	588	712
Other Countries	327	697	1370	921	873
Botswana	58	40	42	38	40
Ivory Coast	49	52	19	21	20
Liberia	21	290	656	225	8
Morocco	42	85	167	165	320
Zambia	40	93	164	203	34

Source: UNCTAD, World Investment Report 1994, Transnational Corporations, Employment and the Workplace, New York: United Nations: 409-10.

By canceling out the common personal consumption expenditure term and solving for gross private domestic investment and grouping related terms yield:

$$I = S + (T - G) + (M - X + R + F)$$

That is, gross private domestic investment is determined by the level of gross private domestic saving (S), net public saving (T-G), and net foreign saving (M-X + R + F). Gross private domestic saving consists of household disposable income not used for consumption and business saving (depreciation and undistributed corporate profits). Net public saving is reflected in the government budget balance. A surplus in government budget means that there is extra public resource available to finance domestic investment. A deficit in the government budget implies that additional resource is needed to finance the difference between net taxes and government expenditure on goods and services. Net foreign saving measures a country's current account balance (represented by imports less exports plus net transfer payments to the rest of the world and net factor payments to the rest of the world). If a country has a current account deficit (net foreign saving greater than zero), then during that year, imports and net transfers and net factor payments to foreigners exceeded the exports revenue and the country became a net debtor with the rest of the world. In contrast, a current account surplus indicates that in that year the exports revenue exceeded the other expenditures and the country was a net creditor with the rest of the world.

Most of the developing countries are not able to fund their domestic investment entirely with domestic saving. Their governmental budget balances are mostly in deficit. Most of these countries also face trade deficits, that is, imports of goods and services exceed exports of goods and services. The trade deficits are usually not offset by net factor income from the rest of the world, and so, result in current account deficits. Besides foreign aid, these countries borrowed from foreign financial institutions to fund their domestic investment. However, the costs of foreign borrowing became extremely high. The world real interest rate has risen from 1.5 percent during the period 1970-80 to 4.8 percent in the period 1981-91

(Maxwell J. Fry, 1993, p.6). It is against this background that developing countries started to rely on foreign direct investment to bolster domestic capital formation.

In this paper we attempt to make a quantitative appraisal of the contribution of foreign direct investment to growth of domestic investment in Sub-Saharan African countries. Our basic assumption is that private foreign investment will increase these countries' total available resources and consequently promote economic growth. The empirical model takes domestic investment over the period 1980 to 1990 as a dependent variable and tests it against a set of explanatory variables including, of course, direct foreign investment.

A more formal expression of domestic investment in developing countries is specified as follows:

$$DIY = B_o + B_1FDIY + B_2DSY + B_3DBTY + B_4DDCY + B_5AIDY\ B_6WIR + B_7NEXY + B_8GGDP + B_9INFL + u$$

Where DIY = Domestic investment as a share of GDP.

FDIY = Net inflow of foreign direct investment as a ratio of GDP.

DSY = Domestic saving as a ratio of GDP.

DDCY = Percentage changes in domestic credit.

DBTY = External public (and publicly guaranteed) debt outstanding and disbursed as a percentage of GDP.

AIDY = A measure of aid inflows, that is, the grant equivalent of gross Official Development Assistance (ODA) as a percentage of recipient GDP.

WIR = World real interest rate.

NEXY = Net exports as a ratio of GDP.

GGDP = Real GDP growth rate

INFL = Rate of change in GDP deflator

u = A well behaved random error term.

We assume that external debt will dampen domestic investment because a large debt burden will act as a sort of expected "tax" on future output. The same may hold true of high inflation rates. On the other hand, foreign aid may benefit domestic investment as a result of direct lending to the private sector or as a supplier of intermediate and capital goods. Faster growth and enhanced credit would raise investors' enthusiasm. Exports and imports are expected to rise as countries go through successively higher stages of development and experience faster growth rates.

THE EMPIRICAL RESULTS

The method used in our study is an econometric model designed to capture the effect of foreign direct investment on domestic investment in Sub-Saharan African countries. The results shed light on the direct and indirect effect of FDI inflows on a sample of Sub-Saharan African countries. They also indicate some of the problems these countries encounter in developing policies to promote domestic investment.

Using the ordinary least square (OLS) method, domestic investment was first estimated with FDIY, DSY, DDCY, DBTY, AIDY, WIR, NEXY, GGDP and INFL as explanatory variables. Table 4 gives the results of the estimate for the period 1980 to 1990[1]. Contrary to our expectation, the coefficient for the key variable (direct foreign investment) turned out to be negative and insignificant. Based on the result, as FDI increases by one unit, domestic investment decreases by almost 3 units. This inverse relationship seems to suggest that any appreciation in the terms of FDI will worsen the domestic investment climate in this region.

For the complete sample, the foreign debt ratio, inflation, and the world interest rate tend to reduce the domestic investment ratio although they are not significant, as anticipated. The coefficient of GDP growth rate also turned out be negative, which undoubtedly is the wrong sign. Domestic saving, change in domestic credit, and the foreign aid ratios came out with the right sign although they are not significant in this estimate.

In the second round, both the GDP growth rate and the inflation rate were removed from the model because GDP coefficient has the wrong sign and the inflation rate was the least significant. The coefficient of the key variable, FDIY, has improved and turned positive. One possible explanation is that any increase in the inflation rate will adversely affect net foreign direct investment inflows. The external debt and world interest rate continue to have a negative impact on domestic investment, though this conclusion is not bailed out by the significant t-value. The coefficient of net exports turned out to be negative while the coefficients of the other variables did not show any visible change.

In the third round, we omitted the world interest rate from the model. The coefficient of FDIY turned out to be negative and insignificant, while the coefficients of DSY, DDCY, DBTY and AIDY became significant. When the ratio of foreign aid to GDP was dropped from the model in the fourth round, all the three independent variables that were previously significant turned out to be insignificant.

It appears that foreign aid is important in determining domestic investment. The coefficient of FDIY became positive but not significant. In the other domestic investment equations, the coefficient of FDIY remained positive. The results seem to suggest that FDI does not crowd out or substitute for domestically financed investment. However, it is not significant enough to warrant any conclusive evidence about the contribution of FDI to growth of domestic investment in this region.

Table 4

Domestic Investment Estimates

VARIABLE	NINE	SEVEN	FIVE	FOUR	THREE	TWO	ONE
FDIY	-2.856	0.839	-1.218	1.160	1.236	0.633	0.065
	(0.640)	(0.597)	(0.445)	(0.636)	(0.580)	(0.805)	(0.982)
DSY	0.136	0.183	0.037	0.440	0.430	0.550	
	(0.544)	(0.301)	(0.847)	(0.135)	(0.106)	(0.070)	
DDCY	1.766	0.290	0.389	0.338	0.301		
	(0.368)	(0.123)	(0.042)	(0.226)	(0.083)		
DBTY	-0.091	-0.171	-0.200	0.012			
	(0.451)	(0.474)	(0.034)	(0.856)			
AIDY	2.639	1.509	2.345				
	(0.322)	(0.083)	(0.014)				
WIR	-1.530	-1.025					
	(0.241)	(0.130)					
NEXY	0.096	-0.033					
	(0.589)	(0.294)					
GGDP	-1.621						
	(0.462)						
INFL	-0.138						
	(0.610)						
R	0.988	0.963	0.891	0.889	0.593	0.353	0.000

SUMMARY AND CONCLUDING REMARKS

In our study we have shown the theoretical discussion of the role of foreign investment in raising the rate of growth in developing countries. One may note that the benefit of foreign investment includes the receipt of scarce resources, especially physical capital, and modern technology, increased income, employment, and tax revenues, and the potential for improvement in the trade balance with export

expansion or import replacement. Among the possible disadvantages of foreign investment for developing countries are the discouragement of local entrepreneurship, low domestic investment as a result of repatriation of profit, and the creation of an enclave (as in the case of the oil industry) with few linkages to the rest of the economy.

The empirical investigation shows that FDI have no significant impact on growth of domestic investment of Sub-Saharan African economies. For the complete sample, FDI is associated with reduced domestic investment. However, when some of the explanatory variables used in the model are dropped FDI's contribution to growth of domestic investment turn positive. Therefore, based on the results, we can not infer that FDI inflows to Sub-Sahara Africa have stimulated domestic investment or have complemented other types of capital flows.

The overall conclusion of this study is that in Sub-Saharan Africa FDI inflows during the periods between 1980 and 1990 had no significant impact to warrant increased capital formation. However, the results do not undermine the relative importance of foreign capital in economic development. In fact, recent studies of Southeast Asian countries' experiences show that FDI flows provide good indicators of development performance and potential (Fry J. Maxwell, 1993). Therefore, policies aimed directly at stimulating these forms of capital flows are most likely to stimulate domestic investment in all forms. Also, implementing policies that generally improve the investment climate will increase FDI inflows to these countries.

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