Contribution of Foreign Direct Investment to the Economic Growth of Sub-Sahara African Countries*

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Abstract

The study is concerned with testing the impacts of Foreign Direct Investment on the economic growth of Sub Sahara African countries through its impact on saving. To this end, simultaneous equation model is estimated by treating growth of output and Gross Domestic Saving as endogenous variables and lagged value of FDI and other variables as exogenous variables. Data from twelve Sub Saharan African countries over the period of 1987-2001 is used for the test. The estimated result shows that FDI has negative but insignificant direct and total effect on the growth of output, but it has significant indirect effect on the growth of output through its impact on saving. As the assumption of efficient market and perfect mobility of factors of production seldom hold for these countries, the impact of FDI on economic growth is unsatisfactory and, therefore, it is difficult to generalize from the experience of some Asian countries that FDI has positive contribution to economic growth of other developing countries like Sub-Sahara Africa.

Key words*: Sub-Sahara Africa, Foreign Direct Investment, Saving, Economic Growth*

Introduction

Despite the fact that the role of external finance and other resources in promoting economic growth in developing countries has long been recognized and debated over years, the capital-scarce Sub Sahara African (SSA) countries have undertaken policy reforms to attract foreign direct investment (FDI). The effort has further increased during globalization. The purpose of seeking FDI was believed

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to be to utilize it as a source of development finance that fills the resource gaps (saving, finance and foreign exchange gaps)[1].

Domestic saving was declining in Africa steadily beginning from the first half of the 1980s. The gross domestic saving (GDS from now on) to GDP ratio dropped from an average of 25.9 % of the GDP in 1976-83 to 17.7% in 1984-91 to 15.8% in the period 1992-1995.[2] This is very low[3] and it was declining compared to the average saving rate of 20%, 19.7%and 18% for Latin American countries and 26%, 27.3% and 32.2% for South and South East Asian countries in the respective periods. As a result of those and other demand and supply determining factors (See UNECA, 1995 & 1996), the economies of African countries were continuously declining beginning from the second half of the 1970s.Compared to the 1970s average economic growth rate of 4.3 %, both the 1980s (2%) and the 1990s (1.7%) were periods of poor economic performances.[4] In the period of economic recovery of mid 1990s, saving to GDP ratio fell from an average of 19.6% in 1990 to 16.3% in 1995. After 1998 of East Asian financial Crises, on average the economy of SSA was recovering, average growth rate of 2.9% is registered during1999-2002. However, with an average GDS of only 12.3% during 1996-1997 and almost 10% during 1998-99, sufficient saving and investment did not support the period of economic recovery of the 1990s.

The fall in saving or investment was accompanied by very low efficiency and rate of return of investment -the incremental capital output ratio is estimated at more than 12% for the whole period 1980-1992(UNECA, 1992, 1995 &1996). It is believed that FDI plays positive role in filling the resource gap and also can have positive impact in improving the efficiency of investment through its positive superfluous effects. The principal objective of the study is to find out the impact of FDI on economic growth of SSA countries, both direct (as capital), and indirect (through its contribution to domestic saving) by using panel data. In other words, it is strived to test the overall hypothesis that FDI has both direct and indirect positive contributions.

The significance of this study is that at the time of globalization, where FDI is flowing into the developing countries more than ever, its effect on the growth of output is difficult to generalize for all developing countries, as far as host countries economic environments are not the same. This study is in fact limited to examining the contribution of FDI to economic growth via its impact on saving, inviting further research through its contribution to the transfer of technology and promoting exports.

The study is organized as follows; review literatures, methodology, model & data, analysis of descriptive and econometric results are discussed in order. Finally, summary and policy recommendations are given.

Theoretical and Empirical Literature

Economic growth theory suggested growth can occur or driven by one or more of the following ways. It may be stimulated by (1) investments that augment and improve the productivity of national physical resources (Harrod, 1948; Domar, 1947). (2) Innovation and technological changes, which not only improve the productivity of existing activities, but also create competitive advantages in new ones (Sollow, 1956; Swan, 1956; Romer, 1994); (3) the development of labor skill or investment in human resources (Lucas, 1988); (4) international trade knowledge spill-over, which enables countries to exploit their existing comparative advantage and develop new ones leading to more efficient utilization of domestic resources (Grossman and Helpman, 1991). Recently, the institutional schools argue supporting the function of market through institutions is good basis for development and economic growth, (Todaro, 1998; Roderick, 2000). Smooth functioning of interventions and removal of hassle costs in the activities of the private sector (e.g. corruption). Sub Sahara African countries' economic growth is lagging behind the rest of the world due to their deficient performance in terms of these basic factors of development. Constraints such as, low physical and human capital formation, inadequate infrastructure, political instability and civil wars, inefficient administrative and institutional set ups and inappropriate economic policies contributed to the weak aggregate economic performance (Ghura and Hadjimichael, 1996).

Theoretical literatures suggest that FDI contributes to economic growth of host countries from its contribution to capital formation (either by filling foreign exchange and saving gap, and by increasing the propensities to saving) and spillovers in technological & international trade.

According to the three gap models, these gaps have to be filled from foreign resources transfers in the form of foreign aid, FDI and grants. The final impact of these foreign resources is to create productive capacity in the short and medium terms (Agenor and Montiel, 1996). However, as the contribution of FDI to the host country's economy is controversial, those with the counter argument on saving (Griffin and Enos, 1970; Weisskoff, 1972) argue that, first, FDI lowers domestic saving and investment rates by stifling competition through exclusive production agreements with host countries' governments, failing to reinvest much of their profits, generating domestic incomes for groups with lower propensities to save, inhibiting the expansion of firms that might supply them with intermediate products. Second, the management and entrepreneurial skills provided by foreign firms may have little impact on developing local sources of these scarce skills & resources and may in fact inhibit their development by stifling the growth of endogenous entrepreneurship. Third, the contributions to fiscal revenue is less than what it should be due to liberal tax concessions, transfer pricing, and tariff protection by host governments. Finally, although the initial impact of foreign firms investment is to improve the foreign exchange position, in the long run, its impact may be to reduce it. Both capital and current accounts may worsen because of the overseas repatriation of profits, interest, management fees and other funds (Todaro, 1994).

Saving constraint hampering the accumulation of the necessary physical and human capital and foreign exchange constraint hampering the import of capital goods and technology- as the main constraints to the growth of output, and hence the demand for foreign capital- are developed by

Bruno and Chenery (1962) as the two-gap models and further elaborated by Chenery and Strout (1966). After the debt crises of 1980s, recent model of fiscal gap is forwarded (Bacha, 1990); it is also part of the problem of resource accumulation emanating from the financial constraint.

Beginning from the earlier times, the position of the gap models was challenged by some economists such as Griffin and Enos (1970) and Weisskof (1972) and Fry (1993) through the line of argument that foreign capital flows in the form of aid and FDI have a depressing effect on the saving propensities of the developing countries, thus leading to a reduction of domestic saving rates. This in turn leads to lower rates of capital formation and lower rates of growth, according to this argument.

FDI is believed to contribute to domestic saving in that first, foreign firms invest from their retained earnings. Second, when FDI flows to host country employment increases and this is a new sources of income that will potentially increase savings, through their activities of pension planning, instituting direct deposit into savings accounts, altering the distribution of income in favour of savers, official payroll deduction and purchase of insurance (UNCTAD, 1992). In addition, foreign firms are themselves investors, utilizing both their internally generated savings, which they obtain through borrowing from their country and issuing equity. Foreign firms can also contribute to government revenues through tax payments, contractual fees, etc. and indirectly through tax paid by their employees and suppliers. The contribution depends on the host country's tax rate, other policies and the level and characteristics of subsidies and outlays. Empirical evidences on the impact of FDI on saving are mixed. It is discussed as follows.

The coefficient of FDI is detected to be negative in Stoneman (1975) who uses cross-sectional single equation model for 118 observations of 1950s & 1960s but didn't consider the interdependence between saving and growth in this modeling while Papanek's (1975) results suggest that domestic savings and various capital inflows have positive & significant impact on growth, which is similar to the findings of Gupta (1975), except small and insignificant coefficient of FDI than aid.

Gupta and Islam (1983), after criticizing the statistical shortcoming of previous studies, detected both the direct and indirect impacts of FDI by considering endogenity. Before coming to the estimation of simultaneous equation model, they estimated single equation model. Based on this estimation and cross-sectional data for forty-two developing countries, they estimated a model with nine explanatory variables[5] over growth rate; six equations were estimated here.[6] The results of these single equation models were that all the coefficients of FDI were positive but statistically insignificant, while that of domestic saving was significant. They also estimated single equation models by separating countries into three income groups[7] and three geographical regions (Africa, Latin America and Asia) by adding income per capita as a variable to capture the difference in the level of development of the countries. Their conclusion was that foreign aid is the most important form of foreign capital inflows, if the aim of the countries is to accelerate growth in the developing countries (underlying cautious interpretation).

The other model used in similar study by Papanek (1972), Bacha (1974), Gupta (1975) and Gupta and Islam (1983) was simultaneous equation approach. Gupta and Islam estimated eight groups[8] of simultaneous equation models, which treated various socio-economic variables as endogenous variables. In all these models, the coefficients of FDI in growth equation are positive but insignificant except for income group II (which is negative and insignificant). From estimation for different geographical area, the coefficients of FDI in the growth equations are decreasing in order from Asia, Latin America to Africa. The summary of their findings is that the domestic saving as well as foreign capital makes positive contribution to growth but the contribution of saving is relatively more important.

Lee, Rana and Iwaski (1986) estimated a simultaneous equation models for a sample of Asian countries. The result of their estimation shows that of many variables included in the growth equation, FDI had the greatest positive impact in raising total factor productivity, which in turn increases the growth rate of the economy. Fry (1993) estimated a model for real growth rate of GNP for sixteen[9] sample developing countries taking the ratio of FDI to domestic investment. The result indicates that FDI doesn't exert a significantly different effect from domestically financed investment on the rate of growth. Using eleven countries from the same sample as a control group resulted in no different outcome, but larger negative coefficient, which could result from lower investment productivity due to debt and balance of payment crisis.

For five Pacific Basin developing market economies, the same estimation indicated an outcome of positive but insignificant coefficient of FDI. The overall conclusion of Fry (1993) was that for countries outside the Pacific Basin large inflow of FDI decreases national saving, domestic investment and rate of investment all decline and hence FDI has negative consequence.

Hussain and Jun (1992) used regression model panel data analysis for South Asian and ASEAN countries taking saving and growth as endogenity. Three kinds of estimation are estimated: one is using aggregate data from both countries, that others are using separate data from South Asian and ASEAN countries. Their results suggested that economic growth in the region had been significantly related to exports and FDI. For the two sub-regions separately the impact of FDI on growth is different. It has positive and insignificant impact on saving but positive and significant impact on growth rate of the ASEAN countries while for South Asian countries it has negative and insignificant impact on both saving and economic growth.

In relation to financial markets, Alfero et al (2002) using cross-country data between 1975- 1995, examined the relationship between FDI, financial markets, and economic growth and found that FDI alone plays an ambiguous role in contributing to economic growth; however, countries with well-developed financial markets gain significantly from FDI. According to the researcher, the results are robust to different measures of financial market development, the inclusion of other determinants of economic growth, and consideration of endogeneity.

In relation to incentive disincentive package by countries with or without the intention of attracting FDI, Fry (1993) showed in the same study that FDI raises the rate of economic growth in the absence of financial repression (measured by real deposit rate of interest) and trade distortions (measured by black market exchange rate premium) after testing two different models for both financial repression and trade distortions for the sixteen sample countries.

A question that comes to our mind from our observation of the variation in the responses of different economies to FDI is whether the impact of FDI differs across countries of different regions depending on the structure of their economy. From the empirical evidences, one possibility is that FDI seems to have substantial positive impact on saving and economic growth rates of countries with relatively developed manufacturing sector (for instance, South East Asian/NICs). For these countries the impact of FDI on economic growth can be positive due to the possibility of substantial diffusion and transfer of technology. However, its impact on mining and tertiary sector commodity dependent FDI of SSA countries is undetected, which is the objective of this study.

Methodology, Models and Data

This study will use simultaneous equation model based on panel data regression analysis. The sample includes twelve countries[10] and the data is collected for the period 1987-2001. The major sampling criterion is the availability of data. The model used is adopted from the model used by Lee, Rana, and Iwasaki (1986), which is also used by Husain and Jun (1992). The quality of the model is that it detects not only the direct impact of FDI on growth, but also its indirect impact on growth through saving and this eliminates specification bias emanating from the interdependence between saving and growth. In the, variables like dependency ratio and imported capital (excluding foreign FDI, aid and grants) are included as they are relevant to SSA economy, as different from the specification of previous studies. Second, the variable FDI as a ratio of GDP enters the model of previous studies in its current form (not lagged), which implies sufficient time isn't given to observe its impacts. The model used in this study tries to overcome these shortcomings.

The growth model developed for the South and South East Asian countries is export oriented endogenous production function (see Ram, 1985), While the saving function is traditional Keynesian type with the inclusion of theoretically relevant but omitted variables in the above studies, and it consists of two endogenous and seven exogenous variables.

$$(\Delta GDP/GDP)_{it} = \phi_0 + \phi_1 (S/GDP)_{it} + \phi_2 (\Delta OF/GDP)_{it} + \phi_3(\Delta FDI/GDP)_{it-1} + \phi_4 (\Delta X/GDP)_{it} + \phi_5 L_{it} + \phi_6 (\Delta K/GDP)_{it} + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots \quad (1)$$

$$(S/GDP)_{it} = \Pi_0 + \phi_7(\Delta GDP/GDP)_{it} + \phi_8 (\Delta OF/GDP)_{it} + \phi_9(\Delta FDI/GDP)_{it-1} + \phi_{10}(\Delta X/GDP)_{it} + \phi_{11}(GDPPC) + + \phi_{12} (DEP)_{it} \quad \ldots\ldots\ldots\ldots\ldots \quad (2)$$

These models are rewritten in the following way:

$$GDPR_{it} = \phi_0 + \phi_1 S_{it} + \phi_2 \Delta OF_{it} + \phi_3 \Delta FDI_{it-1} + \phi_4 \Delta X_{it} + \phi_5 L_{it} + \phi_6 \Delta K_{it} + \varepsilon_{it} \quad \ldots\ldots\ldots \quad (3)$$

$$S_{it} = \Pi_0 + \phi_7 GDPR_{it} + \phi_8 \Delta OF_{it} + \phi_9 \Delta FDI_{it-1} + \phi_{10} \Delta X_{it} + \phi_{11} GDPPC + \phi_{12} (DEP)_{it} + V_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (4)$$

Where, $\mathbf{GDPR_{it}}$: the Growth rate of Real GDP; $\mathbf{OF_{it}}$**:** change in official development assistance as a percentage of GDP; $\mathbf{FDI_{it-1}}$: change in lagged value of FDI inflows as a percentage of GDP; $\mathbf{S_{it}}$:Gross Domestic Saving; $\mathbf{X_{it}}$: change in total export revenue as a share of GDP; **L:** labour force growth rate; $\mathbf{K_{it}}$: change in Value of imported capital as a share of GDP; $\mathbf{DEP_{it}}$: dependency ratio; $\mathbf{GDPPC_{it}}$: real GDP per capita; and, ε_{it} and $\mathbf{V_{it}}$ are error terms. '**i**' is representing individual countries in the sample such that **i**=1,…,N; while t is time such that **t**=1,…,T. As both equations are overidentified, the appropriate method of estimation is Two Stages Least Square (2SLS).

The data for the FDI is collected from World Investment Directory, 1996, and World Investment Report, 2003, both of them are the publications of UNCTAD. Data for other variables except dependency ratio are collected from African Development Indicators 2003 or The World Bank CD-ROM, 2000.

Now, the hypothesis regarding each variable will follow; the impact of capital inflows in the form of FDI and official development finance on the economic growth of developing countries is controversial. Negative impacts can arise due to decapitaliazation and disarticulation, i.e. lack of linkages (Stoneman, 1975; Bornschier, 1980; O'hearn, 1989).) For the SSA, the contribution of FDI inflows to the capital formation or domestic saving is straightforward as the level of domestic saving is very low. This is to say that FDI can increase GDS. The contribution of FDI to saving and capital formation in the region can be outweighed by its negative contribution to the balance of payments in the short run. The overall impact of FDI on economic growth is therefore difficult to predetermine. The same is true for official development assistance.

The relationship between saving and growth is positive even though there is a problem of simultaneity. A virtuous cycle results as growth leads to more saving and this enhances economic growth. The existing line of thought to the problem of causality is if saving is a major determinant of growth in a particular economy, increasing saving is a major policy issue. But, if it is not the major driving force, focusing on other factors is relevant as Schmidt-Hebbel and Serven (1996) stated it. However, many studies are postulating that private saving largely follows economic growth. Carrol and Weil (1993), on their tests of causality between growth and saving and World Bank (1994) from its observation found that traditionally low private saving has little chance to change unless economic growth is preceded by any other means. This steady reveals a case when most of the GDS is generated from FDI.

For those countries better export performance has a positive impact on supply side by enabling them to import intermediate inputs and capital goods. This increases output; and the higher the output the higher the saving rate, *ceterus paribus*. In the growth equation the growth of export can be positive or negative, depending on the long run technological impact of export on output. For typical developing

countries the growth of output depends on the level of imports of these items (Porter and Ranny, 1982). This is expected to capture the contribution of capital to the growth of output by augmenting the labor force. In the model positive relationship is expected between the growth rate of this variable and economic growth of SSA countries.

In the life cycle saving model, the age composition of a population is postulated to have significant influence on household saving behavior. The two extreme groups (the youth and the elderly) have low income and save little, while those in the middle have high productivity and save more. These two groups are the compositions of dependents, and the larger the number of dependents in a household the lower is the saving rate, under the assumption that there is stable or slightly missing consumption. Besides, aggregate saving is affected by age distribution of the national population (Modigliani, 1970). Thus the life cycle model predicts a negative relationship between saving rate and dependency ratio. If the bequest motive dominates among the elderly, however, an increase in the dependency ratio may actually increase private saving rate rather than decrease it (Deaton, 1995). Empirical evidence is conflicting and the issue is left unresolved (Harrigan, 1995 cited in Mwega, 1995). For SSA countries, both the age group and the cultural behaviors matter. The contribution of the dependents to output is not simple-both children and old age laborers have important contributions. Therefore, the sign of the coefficient of dependency ratio is not predetermined.

Descriptive Analysis and Econometric Results

Table 1 summarizes the sample countries' pattern of FDI and its importance in relation to saving and growth during1987-2001. Those countries with very low level of GDS and rarely diversified export sector fill their resource gap through foreign capital inflows in the form of FDI and ODF. The role of FDI is filling the resource gap of countries like Lesotho and Nigeria, while pushing up capital formation further for countries like South Africa, Zambia and Cameroon. The contribution of the annual FDI to the sample countries' GFCF (Gross Fixed Capital Formation) ranges from 4.8% (South Africa) to 50% (Lesotho) with an average of 14% for the sample countries. Here, except in four sample countries (Lesotho, Nigeria, Cote d' Ivoire and Swaziland), in the rest of them, contribution to GFCF is below the average of 14%. This shows that the contribution of FDI to the economic growth of most of the sample countries via its contribution to GFCF is low. This has an implication that there are other important factors that determine the output growth of SSA countries. To summarize, there is clear pattern that FDI is associated with saving than with economic growth based on both simple observation and graphical analysis of the descriptive data. What does the econometric estimation indicate?

Table 1

When we come to econometric results, the coefficients of the exogenous variables in the structural form growth equation (Table 2 below) indicate their direct effect on the growth of output, while those in the structural form saving equation indicate their direct effect on GDS.

Table 2

The structural equation may be less reliable due to the possible gap arising from estimating the instrumental variable, which more significantly observed in case of the growth equation. We have to be careful in interpreting especially the relationship saving and growth. In the estimated result of the structural equation (Table 2), growth is significantly explained only by imported capital goods. The impact of saving on the growth of output is positive but insignificant and this doesn't support previous findings (Serven and Solimano, et al 1996); however, for comparison purpose, in the rejected OLS, GDS is significantly positively affecting growth. The descriptive data however tend to confirm the former result. During the 1987-2001, Botswana, Mauritius & Swaziland countries respectively registered average GDP growth rate of 6.7%, 5.34% and 5.22% and respective saving rate of 39%, 24.5% and 9.06%. Other lower growth rat countries such as Gabon, Nigeria, Cameroon and South Africa had GDS of 39%, 24% 19 % and 19% respectively and average rate of output growth of 2.43, 3.65, 0.12 and 1.9 percents, despite higher GDS rate. We have to know that most of those countries are oil exporters, a sub sector most of which is dominated by foreign firms.

The result also shows the critical role played by imported capital goods in the economic growth of the sample countries. The imported capital goods carry new technology and the new technology increases labor productivity (Todaro, 1994). For SSA countries, imported capital goods are ways of adapting new technologies, which makes the labor & land more productive. It has substantial impact on the productivity of the abundant cultivable land and the labor force.

The direct impact of last year FDI on the current growth of output of the sample SSA countries (the *direct effect*) is negative but insignificant. The estimated structural form saving equation suggests that growth of output and lagged FDI have positive contribution to the GDS. In the saving equation, the coefficient of official development finance is negative and significant at 5%. Those who argue against it suggested foreign aid depresses domestic saving and consequently reduces the resources available for capital formation. The finding of this study supports the argument that official development finance has direct negative impact on GDS of SSA countries. Previous empirical evidences support both arguments of positive and negative impacts. Fry (1980), Giovannini (1985) found significant negative contribution of foreign assistance to saving of the developing countries, while Weiskopf (1972), Gupta (1987) found that it has positive contribution.

Table 3

The coefficients of the variables in the estimated reduced form equations have similar signs with their coefficients in the estimated structural form equations. The variable that has significant positive impacts on the growth rate of the sample SSA countries is the level of imported capital goods. It carries the theoretically expected sign and it is significant at 1% level. Income per capita, which has less theoretical relationship with economic growth, has a negative and significant coefficient. It suggests that countries with high income per capita growth rate has low GDP growth rate, probably due to the high base. In both structural and reduced form saving equations FDI has positive and significant contribution to GDS. This is contrary to what Ghazali (1996) found by using *current* FDI for developing countries, but similar in ***implication***.

In the reduced form saving equation, official development assistance carries negative sign and it is significant at 1% level. This shows that the total effect of official development assistance on GDS is negative. The set of reduced form equations more importantly show that FDI has negative but insignificant total effect on the economic growth of SSA countries. In the total effect, we find the first component as the direct effect of FDI, i.e., the coefficient of lagged FDI in the structural form growth equation, which is negative. The second component is the indirect impact of FDI on the growth of output through its impact on GDS; this computed component is positive, but insufficient to outweigh the direct negative direct impact on the growth of output. Thus, the total effect of FDI on the economic growth of the sample countries (its coefficient in the reduced form growth equation) is found to be negative, albeit insignificant. The finding that the indirect contribution of FDI to the growth of output through saving is positive confirms the hypothesis in the introductory part of this study. For the developing countries of South East Asia, however, the impact of FDI on growth was positive and significant (Husain and Jun, 1992).

Before suggesting any possible reason, it is worthwhile to notice the assumption of the model. The model assumes that the market is efficient in resource allocation; there is free capital mobility and perfect information flow. In this regard, the FDI inflows into different sectors are assumed to have equal marginal contribution (equal marginal product of invested capital) to the total output of the host country. The assumption implies that foreign investors are free to allocate their investment resources in any sector in such a way that they can maximize their benefit. But in SSA countries, the market is full of distortions and these assumptions seldom hold. Moreover, there is high government intervention in these economies until the very recent liberalizations. In most of these countries, foreign investors are restricted by policy from engaging in some sectors (usually the service sectors such as communication, transport, etc). In addition to these problems, in some countries, the government fixes minimum investment capital, below which foreign investors are not allowed to invest[11]. This leads to the inefficient allocation of foreign capital. This is the problem with the assumption of the model. The reason for the large repatriation can be caused by market distortion, excess policy intervention of the government and unfavorable investment conditions.

The literatures underline the importance of the market efficiency in maximizing the benefit from FDI. Dunning (1985) insists on the government policies to ensured efficient market operation in restructuring and growth, ranging all the way from converting under-investment in education and training to countering the adverse effects of monopoly power. Fry (1993) underlined avoiding trade and financial distortions generate maximum macroeconomic benefit from FDI. Therefore, policies of the governments with regard to the market operation of the SSA countries matters in generating optimal benefits from FDI.

Market inefficiencies may be reflected through the following possible factors that reflect the negative contribution of FDI to the growth of output of the SSA countries; these factors are: (1) the repatriation

of the largest part of the retained earning as a ratio of FDI inflows (which is part of GDS). For the SSA countries on average about 75% of the retained earning of the period 1991-97 (a maximum of 90.1% and minimum 61.1%) is repatriated. If market is efficient there is no incentive to do that. For other developing regions, the average figure is 33% (UNCTAD, 1999b; p 168). The high level of repatriated retained earning of the foreign firms decreases the contribution of FDI to capital formation (Todaro, 1994; Ghazali, 1996**)**. (2) The contribution of FDI in filling the foreign exchange gap by its spillover effect on exports is suggested by the pro FDI argument. The impact of FDI on the export sector of the SSA countries can be hampered by the role of FDI in limiting the countries on a single export item such as oil and mineral products by appreciating the exchange rate of the currency and this may restrict these countries to few commodities for their export earning, instead of contributing to the expansion of exports through diversification. Ghazali (1996) suggests encouraging DFI to engage in the tradeable sector, probably manufacturing exports. In addition, in the short run the repatriation or capital flight makes the balances of payment of the country deteriorate. (3) The impact of FDI in filling the financial gap is usually outweighed by the generous incentives given by host SSA countries to attract FDI. This can outweigh the positive contribution. (4) The technological and managerial skill spillover effects are also limited due to the low share of the manufacturing sector in SSA economies. The possibility of inappropriateness of technologies, which can reduce productivity, also exists (Todaro, 1994**)**. (5) Most SSA countries are the victims of debt burden. As far as they pay out large part of their export revenue for debt servicing than for capital formation, the impact of the revenue from FDI may not be fruitful. (6) The negative impact can be attributed to the weak overall economic performances of the SSA. During the 1980s and at the beginning of 1990s, SSA countries economy was in depression. Empirical evidences show that economic growth is lagging behind due to economic and non-economic factors (Collier and Gunning, 1997); and 7) Foreign direct investment crowds out domestic private investment in some countries of SSA (See UNCTAD, 1998). Under these circumstances, FDI inflows can't play significant role in economic growth because it doesn't substitute domestic efforts.

When we look into the contribution of FDI to the output growth of developing Asian countries, it is basically founded on conditions that are not similar to the SSA countries. One of these is the high level of reinvested earning of the foreign firms in these countries, i.e., on average only one third of the large volume of profit from FDI was repatriated in the period 1991-97, unlike three fourth level in the case of SSA (UNCTAD, 1998). These countries have also reached a stage where they can exploit the benefit of technology that arises due to FDI. Foreign firms investing in these countries are also competing to get the upper hand in exploiting their technology ownership advantages, which may decrease the cost of getting the new technologies for the host countries. In those countries, the contribution of FDI is supported by the macroeconomic performances (for instance, there was high level of saving and investment).

In addition, the difference in terms of infrastructure, human capital, attitude towards hard work, economic, political and institutional set ups increase their bargaining power on incentives to foreign

investors and therefore they cannot be the victim of generous incentives. Therefore, the finding that FDI has insignificant impact on the economic growth, which is inconsistent with the finding of the Gupta and Islam (1983) and Hussain and Jun (1992) for South and South East Asian countries. This implies, from the finding of the study, the effect of FDI on the economic growth cannot be generalized, as the host countries economic environment are not the same.

The significance of lagged FDI in both structural and reduced form equations of saving supports the theoretical argument that FDI increases domestic saving. The components of GDS that can rise through the impact of FDI are the retained earning of foreign firms, retained earnings of domestic firms and domestic personal saving (see Dornbusch and Fisher, 1996). However, if it is the saving of foreign firms component of GDS that is rising more than the other components, the possibility that domestic saving has positive impact on the host country's economic growth can diminish or for that matter it can be negative, because most of the foreign saving from FDI in SSA countries is repatriated (see Table 6). Therefore, the conclusions that FDI has direct positive contribution to the domestic saving, and hence to the growth of output can be misleading.

In short, the result from the estimated structural form equations revealed that FDI has negative but weakly significant direct impact on the growth of the sample SSA countries while it has positive and significant direct impact on their GDS. As such, FDI needs to be encouraged by the SSA governments; but its contribution becomes more important on condition that there is reinvestment of the retained earning, which is largely repatriated in case of the SSA countries. The reinvestment has two advantages. First, it increases the capital formation. Second, when there is reinvestment the impact of capital flight that depresses the balance of payment of the host country will be low.

Table4

Table

The diagnostic test of the reduced form equation estimates of both growth and saving equations fail to reject the null of two-way fixed effect model against the estimated one-way fixed effect model in growth equation and random effect for saving equations (Table 4) [12].

Summary and Policy Implication

The estimated reduced and structural equations of this model show that lagged FDI has negative but insignificant direct effect, positive and significant indirect effect through saving and negative but insignificant total effect on the economic growth of the sample countries. It also shows that FDI has positive and significant direct and total effect on GDS. This confirms the argument that FDI has positive contribution to the national economy by increasing saving. However, the fact that retained earning of foreign firms is part of GDS and large part of this saving is repatriated (as supporting data shows) and this decreases the contribution of FDI to economic growth through saving. Indeed, we have to know full profit repatriation has come to be one of the preconditions practically to attract FDI (Khor, 2000, p.71). The ***repatriation of profit*** that is part of the ***GDS*** vanishes the possible contribution of FDI to the capital formation. In addition, the immediate consequence of the repatriation

of the profit (capital flight) has negative effect on the balance of payment of these countries if we compare with the incentive to tax free imports. The finding that FDI has negative and insignificant impact on the economic growth of SSA while it has positive and significant effect on the GDS is not true for the South and South East Asian countries. Possible reasons to the overall negative total effect of FDI on the growth of output of SSA countries are: (I) repatriation of large share of the retained earning, (ii) limitation of host country to a few number of export items through appreciation of the exchange rate, (iii) superfluous incentives, (iv) low share of the manufacturing sector- so that possibly low technology spillover effects if not depressing; and the extent of linkage to the domestic manufactories is low; (v) high debt burden, and (vi) weak macroeconomic performance over the period.

Basically, the model assumes that the market allocates resources efficiently and there is free mobility of factors. In this regard, the foreign direct investment inflows into different sectors is assumed to have equal marginal contribution (equal marginal product of invested capital) to the total output of the host country. The assumption implies that foreign investors are free to allocate their investment resources in any sector in such a way that they can maximize their benefit. But for the SSA, countries the assumption doesn't hold. There is low factor mobility and information is imperfect. Moreover, there is high government intervention in the economy. And the areas of intervention may not be selective and not benefit balancing for both the foreign investors and hosts (Khor, 2000). In most of these countries, foreign investors are restricted by policy from engaging in some sectors. In addition, governments fix minimum investment capital, below which foreign investors are not allowed to invest. This leads to the inefficient allocation of foreign capital. Large repatriation rate is one possible outcome of the absence of free mobility of capital in the host country. Many studies suggest the need for selective policies to optimize positive gains from FDI and to minimize its negative effects (Khor, 2000).

Costs of FDI can outweigh the benefits under the above conditions and its impact on the economic growth can be negative in spite of its positive and significant contribution to domestic saving. But, in its relationship to the growth of output, the empirical evidence on the contribution of FDI to the export performance and the adoption of technology of the SSA countries is not tested in this study. Therefore, concluding on the overall impact of FDI on the economic growth is difficult. However, what the empirical evidence assures us is that the impact of FDI on the growth of output indirectly i.e. through its impact on saving is positive.

From the finding, the direct contribution of FDI to economic growth is negative and insignificant. But its indirect contribution to growth through saving is positive and significant. The fact that the direct contribution of FDI to economic growth is negative and insignificant shows that SSA countries need to be careful in considering FDI as the strategy for economic growth. But, its significant contribution to gross domestic saving shows FDI is relatively better compared to other foreign resources such as foreign aid. If SSA countries strengthen saving institutions, employees of foreign firms and domestic

firms can get opportunities to save more from their income; and this saving will be good source of investment.

The finding also shows that the contribution to gross domestic saving is not adequate enough to out shine. As a supporting evidence show this is due to high level of repatriation of retained earning. There is a need to minimize repatriation of retained earning by making their home countries attractive for investment and bargaining on the level of repatriation. The first version of this study examined the factors that determine the FDI inflows into the SSA countries during the last two decades (See Mekonnen, 2001); factors of policy focuses are thoroughly discussed. Here, governments need the have selective policies in an objective to attract FDI in that it should have balancing benefits of both the foreign investors and the host countries. The other issue that is relevant and important to consider is the question of equity (see Kohr, 1996). The choice is between high level of investment of foreign capital that resulted in holding high share of the resources of the sovereign countries (based on larger equity share) and reducing economic and social evils such as unemployment and poverty. One can examine the case of Ethiopia from this perspective, for instance.

However, further researches on the contribution of FDI to growth through exports and technology are important to be considered for exhaustive judgment on contribution of FDI to the SSA countries economy.

ENDNOTES

[1] There is basic argument against FDI (see Todaro, 1994)

[2] From 1960s to the early 1990s, GDS more than doubled in East Asia relative to GDP- from 14% of GDP in early 1960s to more than 35% in the 1990s.During the same period saving rate stagnated in Latin America and collapsed in SSA (WEO, 1999a).

[3] Various studies suggested reasons for this. For instance, according to Ghura and Grennis (1993) regression result of pooled data for thirty-three African countries confirmed a negative relationship between the real exchange rate misalignment and economic performance.

[4] Estimates suggest that (ADB, 1999,p.23) African countries with good policy environment need investment to GDP ratio in twenties to sustain just the current rate of growth.

[5] Saving to GDP ratio, FDI, foreign aid, other forms of capital inflows, growth rate of the labor force and the multiples of GNP per capita and the first four variables.

[6] One of these equations included saving and the three forms of foreign capital inflows, the other three equations include each of the three forms of capital inflows one by one and, still the other one includes growth rate of the labour force in addition to saving and the three forms of foreign capital inflows & the last one included all variables.

[7] Y<USD 300:income group I; 300 < Y < 600- II, and Y>600- III; where Y is percapita income.

[8] Estimates vary with the kind of methods (OLS, 2SLS), income group (three different income group countries) and three geographical regions (Africa, Asia, & Latin America).

[9] Argentina, Brazil, Chile, Egypt, India, Korea, Mexico, Nigeria, Philippines, Pakistan, Sri Lanka, Indonesia, Malaysia, Thailand, Taiwan & Venezuela.

[10] Includes Botswana, Cameroon, Cote D' Ivoire, Gabon, Ghana, Lesotho, Mauritius, Nigeria, South Africa, Senegal, Swaziland and Zambia.

[11] What do we know-the highest marginal benefit a host country can attain is at a lower level of FDI capital than determined by the regulation?

[12] The software is developed to estimate fixed effect models in panel data using two stage least square estimation, not random effect (See Green, 1998).

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Table 1: The Features of FDI Inflows and Stock and Its Relationship with GFCF, GDS & Growth of Output in Sub-Saharan African Countries

	Country	Stock of FDI 1998 Billion USD	%age Share of FDI in GDP		Averaging-al inflows of FDI (% of GDP) 1987-98	Contribution of FDI to GFCF (%)	Relationship between Lagged FDI & Output Growth	GDS as a %age of GDP	Relationship between Lagged FDI & GDS
			1987	1998					
1.	Botswana	1.96	7.84	1.58	1.74	5.2	Negative for 1986-92 positive for 1992-98	38.5	Positive
2.	Cameroon	1.23	0.93	0.57	0.12	1.9	Positive after 1992	19.3	Inconsistent
3.	Cote d' Ivoire	2.97	0.85	2.84 (Year 1997)	1.23	18.4	Both positive and negative trends are observed	16.3	Positive
4.	Gabon	1.82	2.4	3.82	1.9	5.4	Positive 1992-98	38.9	Positive after 1991
5.	Ghana	1.2	0.09	0.8	1.24	12.8	Unclear relationship	7.9	Positive
6.	Lesotho	2.2	1.6	33.8	15	50.0	Positive after 1992 and unclear relationship then	29.5	More or less positive
7.	Mauritius	0.4	0.94	0.29	0.9	5.0	Unclear relation	28.8	not clear
8.	Nigeria	19.6	5.2	2.54	4.21	27.4	-	22.4	More or less negati-ve relationship
9.	South Africa	17.05	-0.23	0.03	0.4	4.8	no clear relationship	19.2	not clear
10.	Senegal	0.71	-0.09	1.47	0.74	8.8	Positive after 1992-98	8.9	Positive after 1990
11.	Swaziland	0.48	10.93	4.21	4.6	16.6	more or less Positive relationship	22	Inconsistent
12	Zambia	1.77	3.61	5.91	3.8	11.5	Inconsistent relationship	-	Positive after 1991

Source: Own computation based on data from African Development Indicators, various years

Table 2: Regression Results of the Structural Form

	Exogenous Variables									
	S	**GDPR**	**OF**	**FDI_{t-1}**	**L**	**X**	**DEP**	**K**	**GDPPC**	**Cont**
Endogenous Variables										
Growth Rate (GDPR)										
	0.18	---	0.26	-0.77	-0.34	-0.21	---	0.32	---	**-0.4769**
	(1.255)		***(0.42)***	***(0.25)***	***(1.00)***	***(-1.1)***		***(4.4)****		***(-1.06)***
	F (32,147)= 2.80(0.000), NT=180, R^2 =0.37									
Saving Rate (S)										
	---	-0.15	-0.3	0.47	---	0.038	0.083	---	0.002	48.1
		(-1.609)	***(-2.54)***	***(3.4)****		***(0.576)***	***(1.138)***		***(0.58)***	***4.646***
	F (18,125)=49.9, *NT=180, R^2=0.92*									

Table 3: Regression Estimates of the Reduced Form

	Exogenous Variables							
	OF	**FDI_{t-1}**	**L**	**X**	**DEP**	**K**	**GDPPC**	**Cons.**
Growth Rate (*GDPR*)								
	-0.2	-0.02	0.65	-0.05	-0.65	0.16	-0.027	105.5
	(-1.19)	***(-0.02)***	***(0.66)***	***(0.36)***	***(-0.724)***	***(4.272)****	***(-2.57)*****	**1.14**
Lagrangean Multiplier Test: 17.5(0.000) 7 degrees of freedom; Fixed VS Random Effect test =0.065, NT=180								
Saving Rate (S)	-0.29	0.51	-0.34	0.024	*0.15*	-0.05	-0.006	-380.1
	(-2.53)*	***(3.737)****	***(-2.17)*****	***(0.37)***	***(1.93)*** ***	***(-1.9)*** ***	***(2.023)*****	-1.91***
	F (32,147)=49.76, NT=180 R^2=0.92							

Note: Figures in parentheses under each coefficient are t-values, while the remarks ***, **** and ******* signify that the t-values are significant at 1%, 5% and 10% level, respectively. Note also that in this econometrics analysis the R^2 defined for the 2SLS does not have the usual interpretation.

Table: 4 Tests of Two –Way Fixed Effect Model against One- Way Fixed Effect Model

Model	Hypothesis	Chi ^{2}(12)	CV.(at 12)	Decision
Reduced Form				
(1) Growth Equation	Fx VS Ra Effect test	-	-	=0.06; **Reject** the null of fixed effect model (at 5%)
(2) Saving Equation	(5) Vs (4)	35.9	23.859	Fail to reject the null of two-way (almost at 1%)

Table 5: The Validity and Diagnostic Tests of the Models

Models/Equations	Model Test(F-test)	Log-Likelihood ratio Test	White Heteroscedasticity
1.**Structural Form**			
Growth Equation	2.80 (0.000)	*X and group effects:* ***-749.1***	Corrected
Saving Equation	49.9(0000)	" " " " *: :* ***-573.0***	Corrected
2.**Reduced Form**			
Growth Equation	Random eff.	Random eff.	Corrected
Saving Equation	49.76(0000)	" " " " : -569.6	Corrected

*Note: (5) is two-way (time effect) effect model, whereas (4) is only cross- country fixed effect model.

Table 6: Comparison of Repatriated Earnings and FDI Inflows, 1991-97*(Mil. of USD and Percent*

Region	1991	1992	1993	1994	1995	1996	1997	1991-1997 (An.aver)
Developed countries								
Repatriated earnings	37 898	45 317	44 508	53.882	65 438	74 332	74 627	56 572
FDI inflows	84 931	88 002	119 685	110 463	181 284	171 902	211 271	138 220
Ratio of earnings to FDI inflows (%)	44.6	51.5	37.2	48.8	36.1	43.2	35.3	40.9
Developing countries								
Reapatriated earning	14 539	16 820	18 644	21 524	32 281	36 970	33 021	24 828
FDI inflows	29 444	39 036	56 844	77 838	81 698	101 984	129 913	73 823
Ratio of earnings to FDI inflows(%)	49.4	43.1	32.8	27.7	39.5	36.3	25.4	33.6
Africa								
Repatriated earnings	1 574	1 803	2 791	3 132	3 134	3 434	2 899	2 681
FDI inflows	2 358	2 868	3 149	4 759	3 468	3 767	4 742	3 587
Ratio of earnings to FDI inflows(%)	66.8	62.9	88.6	65.8	90.4	91.2	61.1	74.7
Asia and the pacific								
Reatrated earnings	8 398	9 548	9 259	10 213	20.342	22 675	15 842	13 754
FDI inflows	14 027	21 621	40 204	44 731	48 087	56 558	64 445	41 382
Ratio of earnings to FDI inflows(%)	59.9	44.2	23	22.8	42.3	40.1	24.6	33.2
Latin America and Caribbean								
Repatriated earnings	4 559	5 455	6 574	8 146	8 732	10 781	14 200	8 350
FDI inflows	12 983	14 397	13 321	28 068	29 784	41 148	60.277	28 568
Ratio of earnings to FDI inflows (%)	35.1	37.9	49.4	29	29.3	26.2	23.6	29.2
Central and Easten Europe								
Repatriated earnings	43	51	76	163	460	592	941	332
FDI inflows	1 462	1 561	3 290	4 484	11 505	8 786	10 347	5 919
Ratio of earnings to FDI inflows (%)	3	3.3	2.3	3.6	4	6.7	9.1	5.6

Source: World Investment Report, 1999