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MAURITIUS AS A SUCCESS STORY FOR FDI: WHAT STRATEGY AND POLICY LESSONS CAN EMERGING MARKETS LEARN?

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ABSTRACT

This study uses a policy approach to examine the role of Foreign Direct Investment (FDI) in the 'Mauritian economic miracle' years of 1970-2000. In the early stage of industrialization, the Mauritian government turned the island into an Export Processing Zone. The objective was to attract foreign direct investors in the textile and clothing industry who would then export the finished manufactured products to European and North American markets. This study analyzes how the spillover and linkage effects between FDI, productivity, domestic investment, and exports impacted economic growth. The results indicate that it was FDI stock, rather than FDI inflows, that led to the growth success. In addition, it was the heavily FDI-driven export sector which was the driving force of economic growth. The study also highlights the challenges that Mauritius faced during its development path, lessons that emerging countries can learn and policy recommendations on how to reposition Mauritius going forward.

Keywords: FDI spillovers, exports, growth, emerging markets

INTRODUCTION

Mauritius has recurrently been cited as a development success story by the World Bank and the International Monetary Fund (Subramaniam, 2001; Zafar, 2011). This small island economy has been a historical evidence against the pessimistic prognosis of Nobel Laureate James Meade who regarded the Mauritian economy as a case of the Malthusian trap (Meade, 1961, 1967). He predicted that the economy would have poor development prospects due to its heavy dependence on its sugar-based agricultural sector, high vulnerability to trade shocks, rapid population growth rate and rising ethnical tensions. Yet, in addition to maintaining national stability and social cohesion, the island economy has sustained a high and stable economic growth rate averaging 5 percent annually between 1970 and 2000 (World Bank's World Development Indicators, 2002). This period, often called the "Mauritian economic miracle," has generally been attributed to the role of foreign direct investment (FDI) transforming the country from a stagnant mono-crop economy to one with sustainable growth and development. Supporters of FDI argue that FDI, as a composite bundle of capital stock, knowledge and technology (Balasubramanyam *et al*, 1996), has the potential to act as an engine of economic growth by providing the necessary conditions for the economy to move up the value chain.

When the island gained independence from Britain in 1968, the economy was characterized by high unemployment, chronic balance of payments deficit, low levels of savings and investment as well as low economic growth averaging to less than 0.3 percent annually (WDI, 2002). The then newly formed government soon realized that the heavy dependence on sugar exports and the import-substitution policies would not remedy the poor economic health of the country. Significant structural changes had to be made to compensate for the lack of domestic natural resources. In order to address the domestic problems, the government took a daring decision to adopt an export-oriented strategy, starting with the establishment of the Export Processing Zone (EPZ) in 1970. The aim was to attract export-oriented foreign direct investors and to rely on the potential benefits of FDI through spillover and linkage effects.

Special fiscal and financial incentives were offered including tax holidays on corporate profits, exemption from income tax for distributed dividends, highly subsidized infrastructural provisions, duty-free imports of inputs, unlimited repatriation of profits and unrestricted ownership. These investment incentive schemes attracted not only FDI but also domestic entrepreneurs to the textile and clothing industry. Over the 1970-1977 period, the EPZ sector took-off, driven by increase in FDI, domestic investment, exports and employment. The balance of payments situation improved noticeably during this period. Over the next three decades, the contribution of the EPZ sector to GDP was remarkable; it increased from 2.6 percent in 1976 to 13 percent in 1990 (Dabee and Greenaway, 2000) and averaged 12 percent annually up to 2000. The EPZ sector is still the second most important foreign exchange earner of the economy, next to the sugar industry.

However, in the 1990s, the economy began to slow down. The very factors which initially attracted FDI altered to such an extent that they began acting as a deterrent. Rising cost conditions, productivity lags, the phasing out of the Mauritian preferential access to European markets and the erosion of the tax holidays reduced the competitiveness of the economy and led to erratic inflows of FDI. Concerns were raised given that FDI plays an imperative role in generating employment and enabling the transfer of knowledge and technology (Ancharaz, 2003). In small developing economies such as Mauritius, this type of investment represents an important source of capital, particularly when the economy is striving to embark on a diversification strategy towards high value added sectors.

In order to devise Mauritius' future development strategy, it is important to assess what impacts FDI had on the economy especially during the boom years of 1980-2000. This study investigates whether FDI had growth-enhancing effects in the Mauritian economy. This is done by also accounting for the contributions of domestic investment and exports and the potential spillover effects of FDI on these. Because of the limited availability of disaggregated datasets, this study adopts a policy oriented approach.

FDI AND GROWTH: THEORY AND EVIDENCE

Theoretical Framework

A number of channels through which FDI can lead to growth-enhancing effects have been analyzed. The theoretical evidence shows that there are three main channels through which FDI can promote growth: by quantitatively increasing the factor inputs through additions to the stock of economic assets, by qualitatively improving the use of existing factors of production, and by increasing the productivity of the domestic factors of production already in use.

The first channel can be argued to be in line with Solow (1957) type neoclassical growth models. The contribution of FDI inflows is essentially regarded as quantitative given that they effectively represent additions to the capital stock of the host country. In these models, no regards are given to the endogenous qualities of FDI and no distinction is made between domestic investment and FDI in terms of their effects. Consequently, the impacts of FDI inflows on economic growth are not substantially different from domestic investment. Because such models assume diminishing returns to capital, FDI has no permanent impacts on economic growth. The second and third channels are to some extent interrelated. The presence of FDI leads to qualitative improvements of the domestic resources which in turn boost their productivity in host economies. For instance, foreign direct investors can improve upon the quality of human capital through the introduction of labor training, managerial practices and organizational arrangements and these can subsequently lead to an increase in labor productivity.

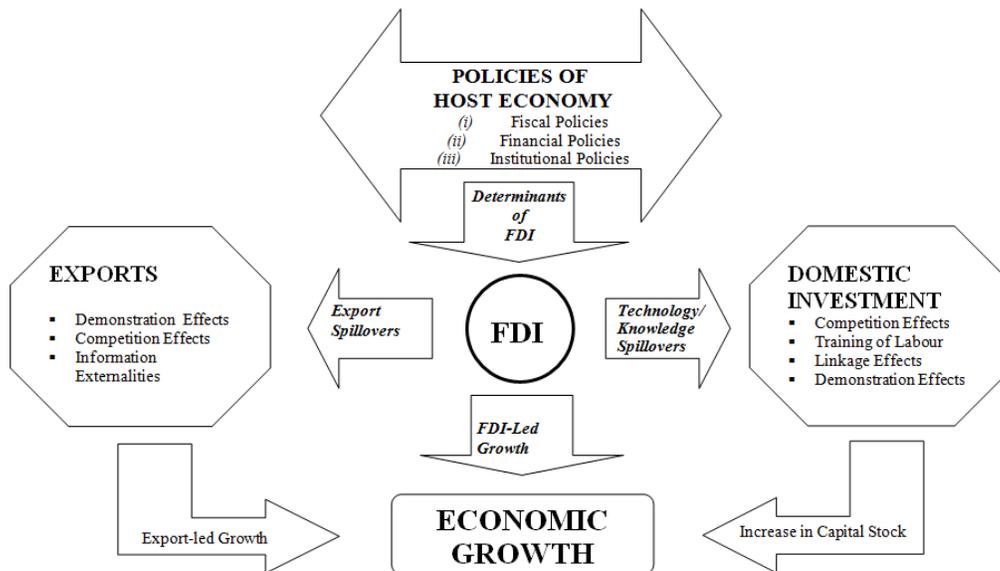
Among these three channels, it is productivity growth that is of utmost importance for the long-run advances in economic growth. The role of FDI in this process is crucial as it can lead to an expansion in productivity either through a number of direct or indirect channels (Blomström *et al*, 1999). The direct channel refers to the improvement in efficiency through the reallocation of resources while the indirect channel refers to the spillover effects of knowledge and technology.

In the analysis of economic growth, one can neither overlook the roles played by domestic investment and exports nor their relationship to FDI in this process. Sun (1998) summarizes this nexus as follows: FDI inflows can stimulate domestic investment through spillover or linkage effects in the production chain when the multinationals (MNCs) enter the host economy. Besides, it is claimed that FDI firms may possess a better knowledge about foreign markets, more experience in product development, and better expertise in international marketing in addition to a superior awareness in inter-country differences in cost conditions. Hence, their presence in host economies can enhance the exposure of domestic firms to trade practices and consequently boost their export capacities as noted by Athukorala *et al* (1995). The relationship between FDI, exports, domestic investment and growth in host countries is summarized in Figure 1.

As domestic firms absorb the spillover effects from FDI, there could be an increase in domestic investment due to a quantitative or qualitative improvement in the use of resources. Likewise, local firms also benefit from export spillovers. Hanson and Lundin (2003) made an interesting observation claiming that more productive firms will increase their export

propensities, while less productive ones will target mainly the domestic market. Overall, inward FDI improves the allocative and productive efficiencies of domestic firms leading to higher productivity, reduced transaction costs, improved quality and standard of products, and enhanced export competitiveness of domestic firms on the international market. Together, these factors are expected to promote economic growth.

Figure 1. The Role of FDI in Host Countries



Source: Authors own representation

Microeconomic Studies

A large number of empirical studies have examined the impacts of FDI on economic growth but the results are at best mixed. These studies can be categorized into microeconomic or macroeconomic studies. Empirical evidence at the microeconomic level falls into two categories: case studies and microeconomic studies. These studies use firm and industry level datasets, mainly cross-sectional and panel, to analyze the impacts of FDI on economic growth primarily in the form of spillover or linkage effects. Overall, the results are at best mixed.

Among case studies, Gershenberg (1987) carried out a survey on indigenous senior managers in Kenyan manufacturing firms and found that MNCs provide more labor training than private local firms. He also found that labor tends to stay with MNCs rather than migrate to domestic firms. Larrain *et al* (2000) also observed that FDI inflows in Costa Rica motivate an increase in human capital. Investment by Intel generated new labor training programs coordinated by higher education institutions and consequently attracted new suppliers in the economy. Hanson (2001), however, argued that the prospects of technological spillover effects were limited due to a lack of domestic competitors and suppliers. He drew these conclusions based on the analysis of three major Latin American FDI experiences, namely those of General Motors and Ford in Brazil and Intel in Costa Rica. The last two case studies seem to highlight

that a threshold level of development is crucial in order to enhance the absorptive capacity of domestic economies.

Other case studies reveal that greater benefits can be derived from the presence of FDI if the investment climates are healthy and if government policies are geared towards the promotion of linkage effects. The study of Lim and Fong (1982) demonstrates that foreign affiliates helped three electronics investors in Singapore to become exporters by enabling them to achieve economies of scale, better technology, improved quality and better prices. Rhee and Belot (1990), however, showed that the impacts of foreign affiliates can be beyond the individual firm. In their case study of eleven developing countries, they found that FDI inflows act as a catalyst and reinforce the expansion of the export-oriented industries. The increase in export intensities of the textile industries in Mauritius and Bangladesh, the plywood industry in Indonesia and the flower industry in Columbia is mainly the outcome of demonstration effects and migration of technical staffs. Based on these case studies, FDI can increase productivity by training labor, promoting an efficient allocation of resources and creating linkage effects.

The empirical findings of microeconomic studies on the spillover effects of FDI, too, are mixed. Earlier microeconomic studies tend to focus on the statistical relationship between proxies of foreign presence and productivity to assess the impacts of FDI in the host countries. Caves (1974) and Globerman (1979) pioneered the empirical literature using cross-sectional data from Australia and Canada respectively. Both studies found evidence that greater foreign presence is correlated with greater productivity in the host countries. Over the years, the two-sample (foreign and domestic firms) models were refined and various proxies for productivity and foreign presence were used.

The use of cross-sectional datasets has been common in many empirical studies including Blomström and Persson (1983), Blomström (1986), Blomström and Wolff (1994) and Kokko (1994) on Mexico, Sjöholm (1999a, 1999b) on Indonesia and Driffield (2001) on the UK. However, although all of these studies claim to reveal positive spillover effects of FDI inflows, they do not control for time-invariant factors. Thus, a positive relationship may be wrongly interpreted as an increase in FDI inflows causing productivity to increase when, in fact, it might be the high level of productivity that has attracted FDI.

In the search of more precise estimates, later studies used panel data analysis, especially at the firm level, as did Aitken and Harrison (1999) for Venezuela, Kathuria (2000) for India and several researchers for the UK-based studies, namely, Girma *et al* (2001), Girma and Wakelin (2000, 2001), and Harris and Robinson (2004). In fact, Görg and Strobl (2001) argue that the use of panel data analysis is the most appropriate estimation procedure to analyze the true extent of productivity spillovers. It allows the researcher to follow the changes in productivity growth of domestic firms across time. Moreover, it enables the investigation of a number of factors that might affect the spillover effects as well as controls for endogeneity bias.

Among the panel data studies mentioned above, only three of them reveal a reduction in the productivity of domestic firms arising from the entrance of FDI firms, namely those of Aitken and Harrison (1999), Djankov and Hoekman (2000), and Barry *et al* (2005). Others find either a positive or an inconclusive evidence. Aitken and Harrison (1999) argue that the result of negative spillover effects is due to negative competition effects. The superior knowledge that

FDI firms possess in terms of production and marketing techniques allow them to operate at a lower marginal cost than domestic rivals. Consequently, to maintain their market share the latter are forced to reduce production which increases costs. Barry *et al* (2005) also find a negative impact of FDI on productivity but they argued that FDI firms do not compete with domestic firms in the product market. Instead, competition arises in the labor market, particularly for skilled labor. Increased demand for skilled labor by MNCs drive up the wage rate, compelling domestic firms to match it in order to stay in the market. Hence, the chance of survival of smaller firms is minimal and thus they are crowded-out of the industry.

Some studies demonstrate no or inconclusive evidence of productivity spillover effects of FDI. Kokko *et al* (2001) argue that the trade regime of the host country determines the magnitude and extent of productivity spillovers. They argue that if an economy has an import-substitution regime, productivity spillovers can be expected to be positive due to competition effects, assuming that FDI does not crowd-out domestic firms. However, as the economy opens up and adopts an export-promotion strategy, fewer opportunities for productivity spillovers would arise since MNCs would more likely focus on the marketing and distribution networks rather than on the production technologies. Consequently, the presence of FDI does not affect domestic productivity. An underlying assumption of this view is that foreign firms rely on imported inputs and restrict factor mobility domestically.

It must be noted that most empirical studies focused on the horizontal spillover effects whereby FDI firms increase the productivity of domestic firms within the same industry (see Blomström and Sjöholm (1999) and Keller and Yeaple (2003)). The importance of inter-industry or vertical spillovers is highlighted in the World Investment Report 2001 (World Bank, 2001). However, emphasis was on the backward linkages which were reported to be important means of diffusing knowledge, information and skills so as to increase the efficiency and growth potential of the host economies. Empirical evidence on vertical spillovers is limited. The findings of Driffield (2001), Driffield *et al* (2002) and Harris and Robinson (2004) suggest that inter-industry spillovers may be more important than intra-industry spillovers in the UK manufacturing sectors. However, the fact that these studies use industry level data there is a possibility that their estimates are subject to aggregation bias.

There is a relatively under-explored strand in the literature which focuses on the export spillover effects of FDI. Typically, the existing empirical studies analyze the export-enhancing role of FDI at the macroeconomic level. The presence of FDI firms can improve the international competitiveness of domestic firms by means of export information externalities, demonstration and competition effects. Aitken *et al* (1997) did the pioneering study on export-spillovers of FDI using a micro-oriented approach. Using plant level data in the Mexican manufacturing industry, they observed that the export activities of MNCs led to an increase the export propensities of domestic as well as foreign firms in the same sector. Bernard and Jensen (2004), on the other hand, found that there is no strong evidence of export spillovers, even though no distinction is made between domestic and FDI firms.

The role of R&D activities by MNCs has also been investigated in the process of export spillovers to domestically owned firms. The study of Barrios *et al* (2001) found evidence that the export and R&D activities of MNC firms failed to affect the likelihood of domestic firms in the

UK to become exporters although other foreign owned firms appeared to benefit from both activities when operating in the same sector. R&D activities undertaken by domestic firms themselves and the spillover effects from R&D by MNCs have a statistically significant impact on export propensities only to developed countries like the EU and OECD members. Interestingly, Greenaway *et al* (2004) found out that this controlling variable, together with the relative importance of MNC production in the domestic market, have a positive and significant correlation with the export propensities of domestic firms. However, the main channel for this spillover effect is through competition between the domestic and foreign owned firms rather than through export externalities.

Macroeconomic Studies

At the macro level, several studies have investigated the relationships between FDI and economic growth. In these studies, it has been difficult to exclude domestic investment and exports because doing so would not only result in model specification biases but also a lack of understanding of the functioning and structure of an open macroeconomy. However, the approaches used are numerous and are dependent on the underlying objective of the research. Earlier studies based their analysis of the long-run relationship between the variables by pooling the datasets. This methodology is used in Balasubramanyam *et al* (1996) and Borensztein *et al* (1998). However, exports have not been considered as an explanatory variable in their models. Balasubramanyam *et al* (1996) find that FDI is a more powerful driving force in the growth process than domestic investment. Borensztein *et al* (1998) observe that the presence of FDI crowds in domestic investment and, through the interaction with human capital, FDI has a greater growth-enhancing effect than domestic investment.

The macro impacts of FDI on economic growth appear to vary under specific conditions (de Gregorio, 1992). One such condition is the choice of trade policy regime which can influence the magnitudes and impacts of FDI on economic growth. There is empirical support for Bhagwati's (1973) hypothesis that countries that follow export-promotion development strategies are likely to attract higher levels of FDI and promote their utilization more effectively than countries that follow inward-oriented strategies. Indeed, Balasubramanyam *et al* (1996) find support of this hypothesis in a sample of forty-six countries over the 1970 to 1985 period. However, the use of cross-sectional datasets in their analysis implicitly assumes that the countries are homogeneous and consequently the results are subject to estimation bias. This methodology is further criticized given that it does not capture the dynamic effects which originate from a shift from the import-substitution to the export-promoting strategies.

As an alternative, it has been suggested that a systematic time-series analysis based on individual countries may provide more reliable estimates of the impacts of FDI on economic growth if the time span is long enough to capture the dynamic effects. Kohpaiboon (2002) undertakes such a study in the Thai economy over the period spanning 1970 to 1999 and concludes that Bhagwati's hypothesis indeed holds. However, for many developing countries, time-series studies proved difficult due to the lack of consistent datasets to investigate the long-run relationship between the variables.

Studies such as Blomström and Kokko (2003) reveal that an important condition for growth-enhancing effects of FDI is the existence of a human capital threshold as it determines the absorptive capacity of the host economy to assimilate and adapt to the technological and knowledge spillover effects from FDI (Van den Berg, 2001). Borensztein *et al* (1998) investigate this condition in a panel of sixty-nine developing countries spanning the period 1970 to 1989 and find evidence that indeed a minimum threshold of human capital is crucial for FDI to have a positive and significant impact on growth. Secondary schooling is used as a proxy for testing the threshold level. Xu (2000) provides further support of this finding and argues that a minimum human capital threshold is necessary to benefit from technology transfer but he also finds that most LDCs do not meet this requirement in the panel of 40 countries he studied.

The literature also highlights the importance of a development threshold necessary for host developing economies to maximize the positive externality effects of FDI. Blomström *et al* (1994) uncover that FDI has a larger growth-enhancing effect in countries with a higher level of per capita income in a cross-country analysis of 78 developing countries. However, Marino (2000) finds that the existence of a minimum developmental threshold is not an imperative condition for FDI to result in a positive growth effect. De Mello (1996, 1997, 1999) explains that this rationale is based on the fact that MNCs may represent technological enclaves in host countries leading to significant production and plant size differentials but limited productivity spillovers.

A relatively new strand in the empirical macro literature illustrates that FDI promotes economic growth through backward linkages in host countries that have sufficiently developed financial markets (Alfaro *et al*, 2010). While the study by Hermes and Lensink (2003) is consistent with this, Carkovic and Levine (2002) find that there is no strong significant evidence that a developed financial market is a precondition for FDI to have a positive impact on economic growth. In fact, in their study, FDI does not have a growth-enhancing effect.

The existence of diverging conclusions within the empirical literature can be partly attributed to the different econometric methodologies used in analyzing the FDI-growth nexus. De Mello (1999) argues that the estimation of time-series production functions based on the endogenous growth theory leads to simultaneity and omitted variable biases. To obtain consistent and efficient estimates, Gujarati (1995) suggests the use of two-stage least squares or Instrumental Variables. However, within the endogenous growth framework, it is difficult to find suitable Instrumental Variables which are correlated with FDI and not with economic growth. Hence, it is argued that the use of reduced-form models such as vector autoregression (VAR) may generate more suitable estimates in an endogenous context. Using panel causality tests and error correction models, Sooreea-Bheemul and Sooreea (2013) find positive pair-wise causality relations between FDI, exports and growth in a set of developing and emerging countries.

The use of cross-sectional analysis, too, has not been free from criticisms. Its implicit homogeneous assumption of common socio-economic, political, financial and institutional structures calls into question the reliability of the estimates in the FDI-growth relationship. The use of panel data analysis is expected to provide more efficient estimates as it captures the country-specific differences which are expected to evolve through time (De Mello, 1999). Nonetheless, one has to be careful because even though the inclusion of certain variables

improves the power of the tests, their significance would be questionable if they lead to misspecified models.

In order to reach efficient and consistent estimates, a correctly specified model should therefore accompany the use of an appropriate econometric methodology. While the Cobb-Douglas type production function forms the basis of the majority of the studies surveyed, there is no clear-cut rule on which dependent variable to use. Chen *et al* (1995) uses GNP in levels as the dependent variable and finds evidence of a significant growth-enhancing effect of FDI in China in the present of policy reforms. However, other researchers criticized this approach since it does not account for country size and ignores relative changes which are captured through growth rates. Hence, Balasubramanyam *et al* (1996) use the GDP growth rate as a proxy for growth while the studies of Borensztein *et al* (1998), De Mello (1996b) and Marino (2000) use the growth of per capita GDP as the dependent variable.

Similarly, much contention exists about which explanatory variables to employ. While most studies make use of the ratio of FDI to GDP (or GNP) as a proxy for FDI inflows, Chen *et al* (1995) use the lagged value of FDI to capture the dynamic relationship between the two variables. However, criticisms may arise if the number of lags is not systematically determined. In our study, we conduct sensitivity analysis with both FDI to GDP ratio and its lags but also argue that FDI stock might be more appropriate because of the spillover effects associated with it and its long run developmental implications.

It should be noted that most macroeconomic studies reveal a positive relationship between FDI and economic growth. However, there exist a few exceptions. Dutt (1997) finds that economic growth rates are significantly and negatively related to foreign capital stocks. De Mello (1996) also finds an insignificant impact of FDI on economic growth in Chile when the Instrument Variables technique is used. Carkovic and Levine (2002) criticize the fact that several existing macroeconomic studies “do not fully control for simultaneity bias, country specific effects and the routine use of lagged dependent variables in growth regressions.” When correcting for these potential biases, they find that FDI does not lead to growth-enhancing effects.

In sum, both the micro and macro studies show that the potential impacts of FDI on economic growth are subject to a number of conditions including threshold levels, absorptive capacity of host countries, the technology gap and geographic proximities between domestic and foreign firms, trade policy regimes, sample period and size, estimation techniques and variables used. FDI can impact growth directly or indirectly. The indirect effects can be through technology and knowledge spillovers through domestic investment or through export spillovers especially if the FDI is export-led. However, overall, there is limited evidence of positive spillover effects. It would be interesting to analyze what kind of spillover effects FDI has generated in the Mauritian case. In the next section, we analyze the trends and patterns of FDI in Mauritius.

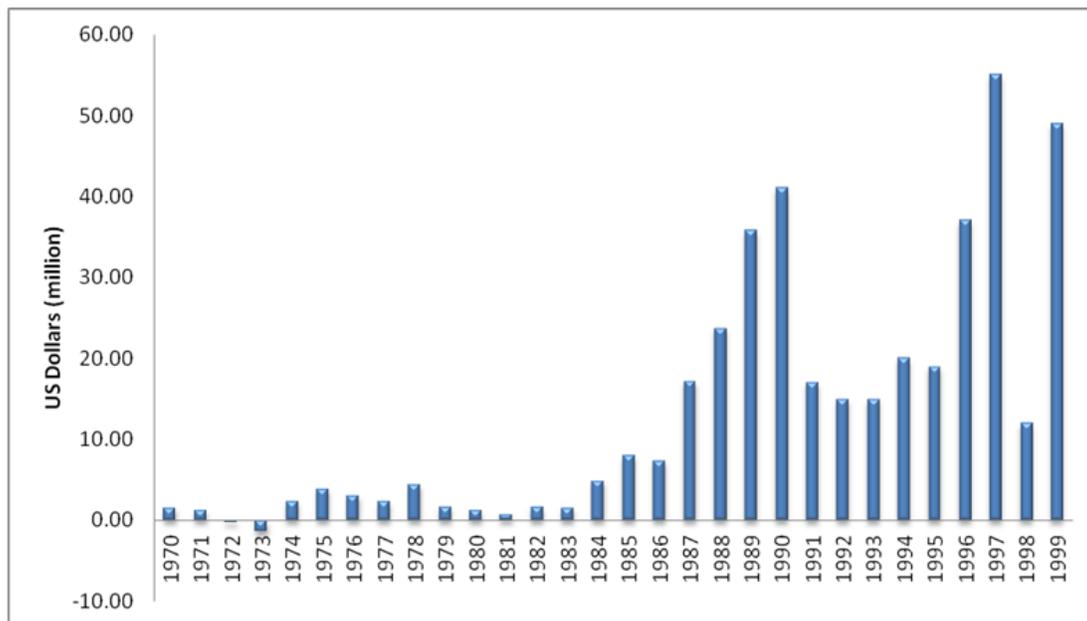
FDI TRENDS AND PATTERNS IN MAURITIUS

FDI Inflows

The pattern of FDI inflows in Mauritius during the EPZ success story is shown in Figure 2. Two conclusions clearly emerge from this chart. First, FDI inflows have been very modest during the 1970s and early 1980s before rising sharply in the late 1980s. Second, although FDI inflows have increased considerably in the post-1984 period, they have been quite erratic, reaching as high as \$56 million in 1997 and dropping as low as \$12.8 million in 1998. Overall, FDI inflows have rarely exceeded \$30 million in any one year or 2 percent of GDP between 1970 and 1999 (World Bank's WDI, 2002).

During the 1970s, FDI inflows were not impressive in spite of the establishment of the EPZ and the numerous policy incentives given to foreign investors possibly because of the lagged effects of policy decisions and the relatively high volatility and uncertainty of the Mauritian economic growth (see Figure 6).

Figure 2. Foreign Direct Investment Inflows in Mauritius



Source: Compiled from World Development Indicators (2002)

In the early 1980s, the situation deteriorated due to adverse economic conditions leading to a further fall in FDI inflows from \$1.2 million in 1980 to \$0.7 million in 1981. The Mauritian Rupee had to be devaluated by 20 percent in 1981 in order to correct fundamental balance of payments disequilibrium. As a consequence of this policy decision, the economy's export competitiveness on the world market improved considerably. FDI inflows also more than doubled in 1982. Between 1983 and 1990, new policy incentives were given to compensate for the phasing out of the 10-year tax holiday which resulted in a phenomenal surge of FDI inflows

from \$1.6 million in 1983 to \$41 million in 1990. This increase in FDI inflows can also be attributed to the adoption of the IMF's Structural Adjustment Program (SAP) in 1983 which successfully improved the economy's foreign investment climate by eliminating trade and investment regulations, boosted foreign exchange earnings by promoting exports, and reduced government deficits through cuts in spending.

However, in the beginning of the 1990s, the growth of the EPZ sector became sluggish. In 1993, FDI inflows leveled off only at \$14.7 million. The annual average inflows over the decade starting in 1990 were \$27 million due to several large projects being implemented. In 1996, total FDI inflows increased to \$36.7 million as a result of a one-off investment flow from Singapore for a racecourse project. A further increase of 45 percent was recorded in 1997, with an inflow amounting to \$56.6 million of which \$43 million represented the purchase of 20 percent share capital in the State Bank of Mauritius by Nedcor, a South African bank. In 1998, total FDI declined to \$12.8 million but increased more than four fold in the following year due to two major foreign investments: one in a local commercial firm and the other in a tuna processing and caning firm.

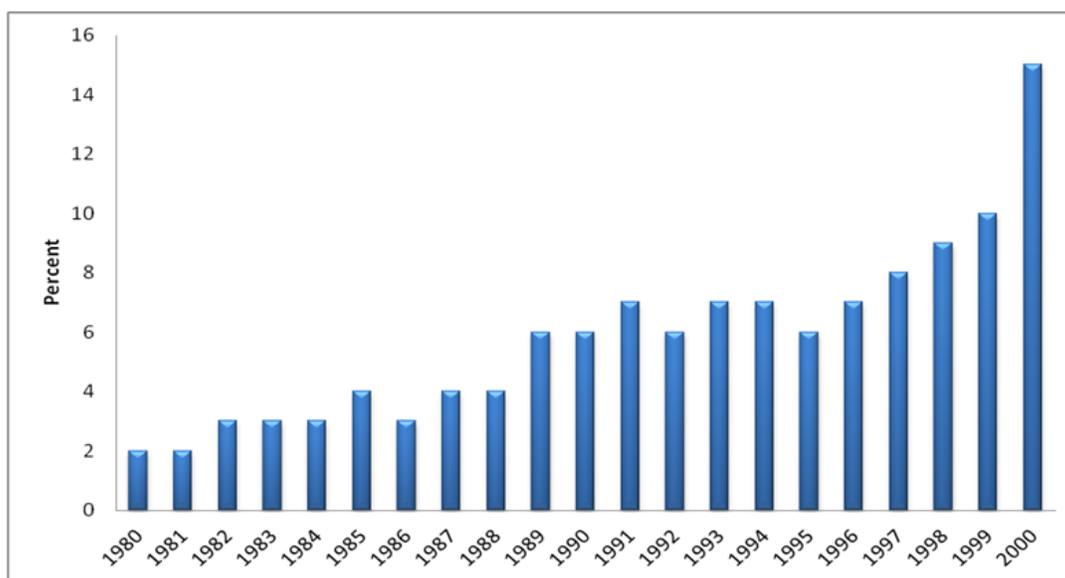
In an attempt to diversify the economy via the development of the Information and Communications Technology (ICT) sector, the Mauritian government liberalized the telecommunications sector through the privatization of the state monopoly Mauritius Telecom. In 2000, 40 percent of its shares were sold to France Telecom, leading to an unprecedented influx of FDI totaling to \$276.8 million (not shown here). In 2001 and 2002, the FDI inflows slowed down to \$32.1 million and \$27.7 million respectively. For the next few years, the Mauritian government forecasted an increase in FDI inflows mainly due to the enactment of the African Growth and Opportunity Act (AGOA) in 2000 and the development of the ICT sector. Numerous fiscal and other incentives were being provided to meet this end.

Inward FDI Stock

The inflows of FDI provide a measure of the extent of FDI participation in the economy. A more appropriate measure of its economic significance and degree of economic integration is the ratio of inward FDI stock to GDP. This is because inflows are quite volatile and do not account for the size of the economy. FDI stock is a better indicator of the long term development potential of the economy because an increase in FDI stock suggests better access to new ideas, technologies and distributional facilities. Figure 3 reports the ratio of FDI stock to GDP starting from 1980 only (due to unavailability of data for earlier years).

Unlike FDI inflows (as shown in Figure 2), the pattern of FDI stock to GDP is quite different. The share of inward FDI stock to GDP has been rising continually and strongly, increasing by more than sevenfold over the 1980-2000 period. This indicates the possibility of an increase in technical progress in the domestic economy. From 1980 to 1988, this ratio was quite stable, fluctuating between 2 and 4 percent but then rose to 6 to 7 percent between 1989 and 1995. After 1996, a sharp increase is observed as the share of FDI stock to GDP more than doubled over the next four years.

Figure 3. Share of Inward FDI Stock to GDP



Source: Compiled from UNCTAD Statistical Database for FDI (2002)

Did Mauritius Lose its Competitiveness as an FDI Destination?

To better understand the ultimate impacts of FDI on the Mauritian economy, it is important to examine its sectoral breakdown. The sectoral distribution of FDI shown in Tables 1 and 2 reflects the diversification strategy adopted by the Mauritian government to develop the island.

Table 1. Sectoral Distribution of Foreign Direct Investment Inflows in Mauritius
(Mauritian Rupees: Million)

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EPZ	270	130	203	92	41	245	51	0	27	300	8
Tourism	152	68	8	152	129	70	35	20	75	27	10
Banking	0	51	3	0	0	0	55	1122	117	215	0
Telecom	0	0	0	0	0	0	0	0	0	0	7204
Other	187	48	16	27	190	10	517	22	73	701	43
Total	609	297	230	271	360	325	658	1164	292	1243	7265

Source: Compiled from Central Statistical Office, Mauritius

Table 2. Sectoral Distribution of Foreign Direct Investment in Mauritius
(Percentage)

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EPZ	44.3	43.8	88.3	33.9	11.4	75.4	7.8	0.0	9.2	24.1	0.1
Tourism	25.0	22.9	3.5	56.1	35.8	21.5	5.3	1.7	25.7	2.2	0.1
Banking	0.0	17.2	1.3	0.0	0.0	0.0	8.4	96.4	40.1	17.3	0.0
Telecom	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.2
Other	30.7	16.1	6.9	10.0	52.8	3.1	78.5	1.9	25.0	56.4	0.6
Total	100	100	100	100	100	100	100	100	100	100	100

Source: Compiled from Central Statistical Office, Mauritius

Tables 1 and 2 indicate a clear structural change in the Mauritian economy between 1990 and 2000. In the early 1990s, the EPZ sector had the most FDI, both in Rupee terms as well as a percentage of total FDI inflows in the country. FDI in tourism was the second largest type of FDI inflows. Over time, however, while both the tourism and EPZ sectors experienced a decline in FDI, the EPZ sector's FDI declined much more than the tourism sector's FDI. In the late 1990s, FDI switched away from EPZ and tourism and into the service sector – particularly in the banking and telecommunications sector. In 2000, FDI into telecommunications accounted for more 99.2 percent of total FDI inflows.

The underlying economic argument explaining the structural transformation of the Mauritian economy lies in the erosion of the initial package of incentives given to the EPZ sector. As a consequence, this sector lost its attractiveness to foreign investors. Rising labor cost conditions, stabilizing labor productivity (see Figure 4), the erosion of the preferential access to the European and US markets, and strong competition from regional competitors in the textile and clothing manufacturing industries forced the Mauritian government to diversify the economy towards a higher value added service sector.

In the textile and clothing industry, foreign workers play an important role in raising productivity. They speed up the production line of the whole group as they are usually paid piece-meal. Overall, there exists a strong positive association between the share of FDI stock to GDP and labor productivity as revealed by an estimated correlation coefficient of 0.86 in the EPZ sector and 0.91 in the whole economy. However, according to the International Labor Organization (ILO, 1997), labor productivity in the EPZ sector of Mauritius remains lower than other competing countries because of the high rate of labor turnover and poor work discipline, inadequate training, and the slow progress in the modernization of obsolete production techniques.

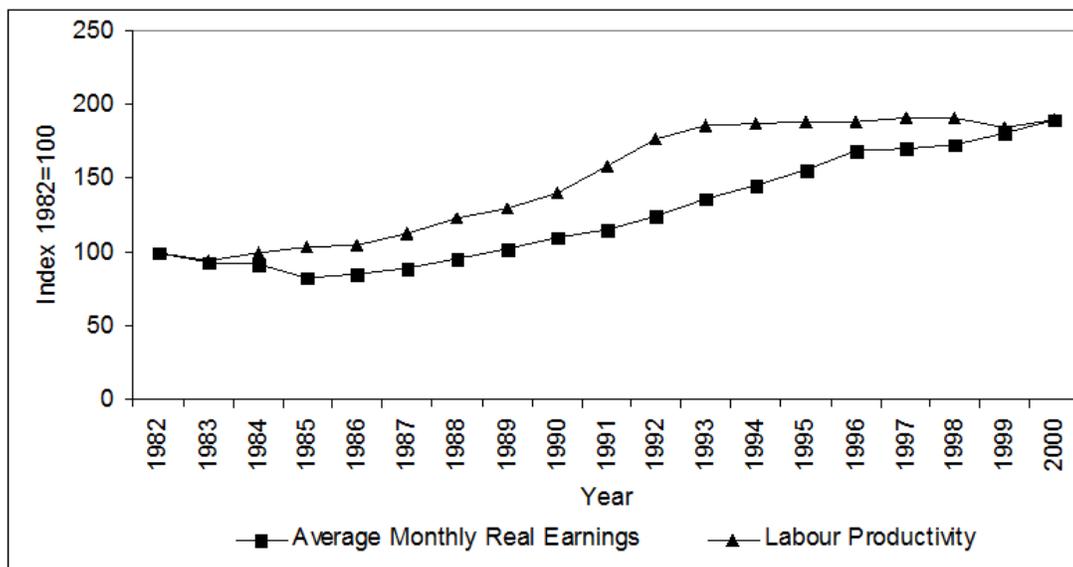
In the EPZ sector, changes in labor productivity act as a wage determinant. As real GDP per worker increases, the economy moves up its development path causing an increase in earnings. In the Memorandum on Wages Policy (2004), a publication by the Mauritius Employers' Federation, the Mauritian economy has been portrayed as a victim of its own success; while the economy is developing, it is also losing its edge due to rising labor cost.

Figure 4 shows that the growth rate in real earnings and the growth rate in labor productivity seem to have eventually converged by the year 2000. If the earnings index overtakes the labor productivity index it would reduce the competitiveness of the economy and possibly deter foreign direct investors from investing. Indeed, Lall (1999) observed that “the competitive advantage given by low wages for unskilled or semi-skilled workers should certainly be exploited, but it is only a starting point. Such an advantage is temporary and evanescent; it cannot support rising wages or better living standards unless skills and technologies are upgraded to allow labor to be used in more productive, higher value-added activities.”

This partially explains why Mauritius is facing difficulty competing with countries like Bangladesh, China, and Vietnam in the production of T-shirts and moderate quality garments for basic mass markets. In fact, Madagascar, Mozambique and other SADC countries are more competitive locations and this is causing an exodus of FDI from Mauritius into these destinations. In fact, even some Mauritian textile companies have relocated to these countries.

In the initial years of industrialization the Mauritian economy appeared to have all the necessary assets to attract FDI: a well-educated workforce, social and political stability, global economic integration through the WTO and regional trade agreements with Southern African Development Community (SADC) and Common Market for Eastern and Southern Africa (COMESA), policy incentives for foreign investment and export, a dynamic private sector plus a strong institutional and legal framework. However, over the 1990s the average FDI inflows have been high only because of the large one-off investment projects.

Figure 4. Labor Productivity and Earnings in EPZ Sector, 1982-2000



Source: Compiled from Central Statistical Office, Mauritius

The Ministry of Economic Development, Financial Services and Corporate Affairs identified a number of reasons that explains the Mauritian economy's weakness in attracting FDI. First, even though the government introduced numerous and highly differentiated investment incentives schemes to attract FDI, their promotion strategy has not been efficiently managed. Up until recently, several independent agencies carried out their own investment promotion which led to distortions in the market and sent conflicting signals about the sectors and activities that the government was keen to promote. Second, the processing and approval of applications for FDI projects takes between 9 to 32 weeks in Mauritius in contrast to 3.5 weeks in Singapore, 4 weeks in Sri Lanka and 4.5 weeks in Thailand. This bureaucratic problem is more pronounced within the EPZ sector. However, the establishment of the Board of Investment (BOI) in 2001, under the Investment Promotion Act 2000, has partially helped to alleviate this problem by being a responsible government authority for promoting and facilitating FDI in Mauritius. Finally, although labor productivity in Mauritius increased over time, it was not enough to match the rate at which wage rate increased. Ancharaz (2003) shows that labor shortages have caused wages to go up much more than labor productivity in the EPZ sector. Moreover, many EPZ enterprises have been unable to adopt more capital-intensive and

technologically superior production methods (Ancharaz, 2003). In general, capital productivity for the whole economy registered a declining trend between 1988 and 2000 (see Table 3).

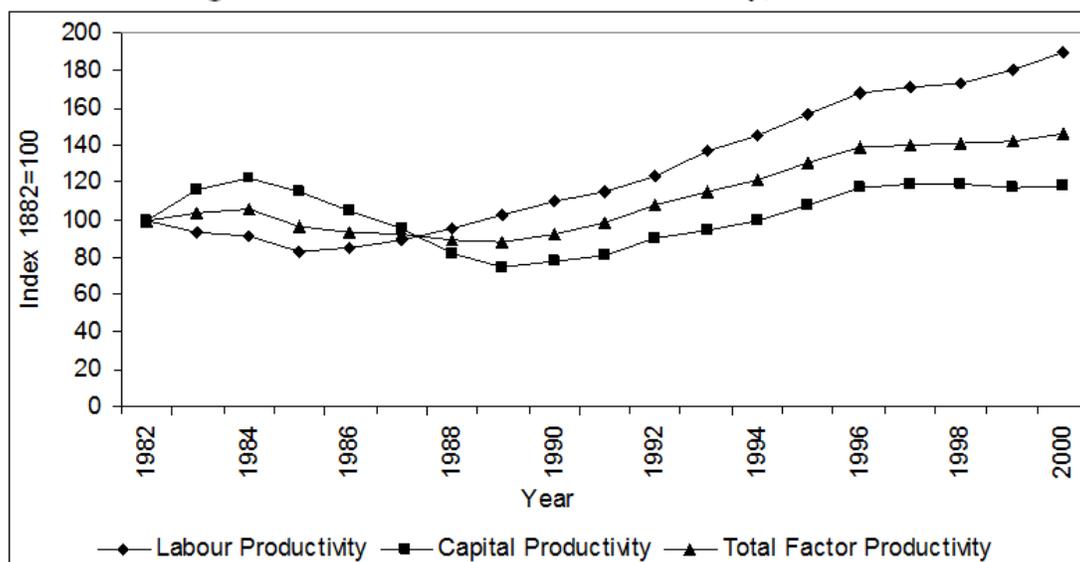
While labor and capital productivities account for only individual factor inputs, total factor productivity (TFP) estimates the contribution to output per unit of combined capital and labor units as well as other qualitative factors, for instance, effective management, efficient work performance and training programs. The average TFP growth for the total economy during 1982 and 2000 was 0.6 percent per annum (see Table 4). However, the growth of TFP in the EPZ sector was much higher, at 2.2 percent (see Figure 5). Since most the EPZ sector was FDI-driven and also geared solely for export, it is very likely that FDI in the EPZ sector was largely responsible for the overall growth of the economy which was export-oriented. Moreover, the fact that the EPZ sector productivity rose from 1989 onwards, it indicates that productivity in Mauritius was subject to factors (other than capital and labor inputs) that are endogenous to the production process.

**Table 3. Labor, Capital and Total Factor Productivity in Mauritius
(Whole Economy)**

Year	Labor Productivity		Capital Productivity		Total Factor Productivity	
	Index	Growth	Index	Growth	Index	Growth
1982	100.0		100.0		100.0	
1983	96.0	-4.0	99.1	-0.9	97.5	-2.5
1984	95.5	-0.5	101.8	2.7	98.6	1.1
1985	95.8	0.3	105.7	3.9	100.8	2.2
1986	96.6	0.9	109.9	4.0	103.5	2.7
1987	98.5	1.9	112.2	2.1	105.6	2.0
1988	101.0	2.5	110.8	-1.2	106.0	0.4
1989	102.4	1.4	104.3	-5.9	103.4	-2.5
1990	106.8	4.4	102.0	-2.2	104.2	0.8
1991	109.4	2.4	98.0	-3.9	103.1	-1.0
1992	114.6	4.8	96.7	-1.3	104.4	1.2
1993	118.0	2.9	94.1	-2.6	104.0	-0.3
1994	121.7	3.1	91.2	-3.2	103.5	-0.5
1995	127.3	4.6	91.2	0.0	104.9	1.4
1996	134.2	5.4	90.7	-0.5	106.2	1.2
1997	140.0	4.3	89.9	-0.9	106.8	0.6
1998	146.0	4.3	90.3	0.4	108.7	1.8
1999	148.1	1.4	86.7	-4.0	107.0	-1.6
2000	160.2	8.2	90.1	3.9	112.0	4.7
2001	168.2	5.0	91.0	1.0	113.3	1.2

Source: Compiled from Central Statistical Office, Mauritius

Figure 5. Trends in EPZ Sector Productivity, 1982-2000



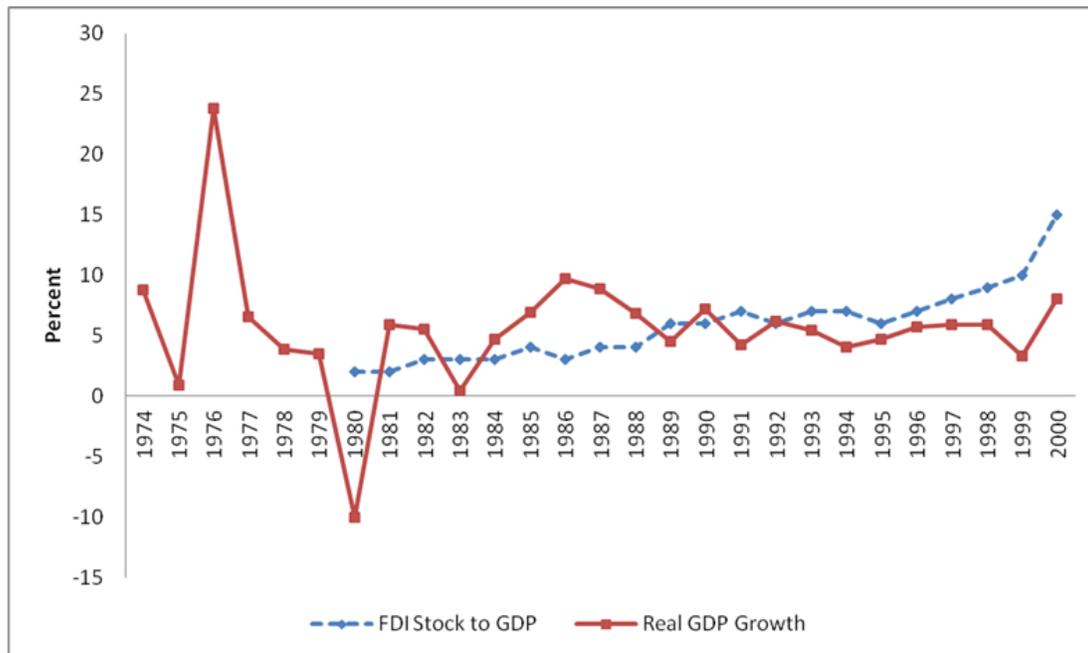
Source: Compiled from Central Statistical Office, Mauritius

The theoretical literature supports the view that FDI endogenously increases productivity growth by means of technical and knowledge spillover effects which can have a permanent impact on economic growth of host countries. In order to enhance the diffusion of technology to domestic firms, the government of Mauritius, with the support of the World Bank, set up the Technology Diffusion Scheme (TDS) in 1994. Its main objectives were to facilitate access to technology in order to improve productivity, quality, design and response time, and to assist in the diversification of export production. An evaluation of the scheme by Biggs (1999) shows that despite the initial problems in design and implementation the scheme had a positive and significant impact on TDS-assisted firms as considerable increases in both sales and exports were recorded and the average increase in exports was more than twice the national average.

ANALYSIS OF THE IMPACTS OF FDI IN MAURITIUS

This section conducts an empirical analysis of the effects of FDI on economic growth in Mauritius. Our analysis in the previous section suggests that FDI might have crowded-in domestic investment as well as created positive spillovers for exports and through these channels it might have been responsible for the sustained economic growth in the 1980s and 1990s. Figure 6 shows that the share of FDI stock in GDP has averaged around 5.8 percent between 1980 and 2000 (data prior to 1980 is not available). More importantly, it has been trending upward since the 1980s (see Figure 6). Real GDP growth, on the other hand, has been relatively volatile in Mauritius with wild swings in the 1970s before stabilizing in the 1990s.

Figure 6. Real GDP growth and Share of FDI Stock in GDP



Source: Compiled from World Development Indicators (2002) and UNCTAD (2002)

In this study we test for the impact of FDI on economic growth in Mauritius using an augmented Cobb-Douglas production function based on Balasubramanyam *et al* (1996):

$$Y = f(L, K, F, X) \quad (1)$$

Y represents real GDP as a function of labor inputs (L), domestic capital stock (K), foreign capital stock (F) and exports (X). Exports are introduced in the model following the large literature on the export-led growth hypothesis and because exports account for more than 60 percent of GDP in Mauritius. Taking logs and differencing, we obtain the following growth equation:

$$g_t = \alpha + \beta GL_t + \gamma DIG_t + \phi FDIG_t + \psi GX_t + \varepsilon_t \quad (2)$$

where g_t represents the growth rate of real GDP at time t , GL represents the growth rate of the labor force, GX represents the growth rate of exports and ε_t is the random error term. Because it was difficult to obtain data on domestic capital stock, we use the share of domestic investment to GDP (DIG) as the proxy for the growth rate of domestic capital stock. We account for foreign capital stocks in two ways. First, we use the share of FDI inflows in GDP ($FDIG$) as the proxy for the growth rate of foreign capital stock. Secondly, as we identified earlier in this study that FDI inflows were more erratic in Mauritius while FDI stocks were sustained over the years and they might have important spillover effects and long term developmental implications, we re-specify equation (2) in terms of the growth rate of FDI stock ($GFDIS$):

$$g_t = \alpha + \beta GL_t + \gamma DIG_t + \phi GFDIS_t + \psi GX_t + \varepsilon_t \quad (3)$$

In the above equations, the coefficients represent the output elasticities with respect to the factor inputs. In the empirical analysis, our main focus is on the parameter ϕ which captures the impact of FDI on economic growth. The dataset for FDI as a share of GDP spans the 1974-2000 period. However, the dataset for FDI stock could be available starting in 1980 only. Hence we need to interpret the Ordinary Least Squares regression results reported in Table 4 with caution. Before estimating the equations, each of the variables was tested for unit roots and found to be stationary.

Table 4. Estimates of Augmented Growth Equations						
Dependent variable: g						
Independent variables	Column I	Column II	Column III	Column IV	Column V	Column VI
<i>FDIG</i>	0.841 (1.071)	0.887 (1.037)	0.684 (0.752)			
<i>DIG</i>	0.265 ⁺ (1.944)	0.263 (1.532)	0.435* (2.112)	0.123 (1.404)	0.135 ⁺ (1.741)	0.134 ⁺ (1.601)
<i>GX</i>	0.293* (3.800)	0.296* (3.603)	0.354* (3.919)	0.205* (3.991)	0.277* (6.259)	0.280* (6.247)
<i>GL</i>	2.506 ⁺ (1.829)	2.353 (1.479)	1.126 (0.628)	0.853 (0.946)	-0.456 (-0.575)	-0.818 (-0.931)
<i>FDIG(-1)</i>		-0.440 (-0.193)	-1.231 (-0.451)			
<i>FDIG(-2)</i>			-1.853 (-0.750)			
<i>GFDIS</i>				0.035 ⁺ (1.646)	0.049* (2.798)	0.055* (2.879)
<i>GFDIS(-1)</i>					-0.024 (-0.862)	-0.037 (-0.970)
<i>GFDIS(-2)</i>						0.025 (0.729)
N	31	30	29	20	19	18
R-squared	0.428	0.400	0.454	0.613	0.808	0.834
R-bar squared	0.340	0.275	0.306	0.510	0.734	0.744
Diagnostic Tests (LM Version)						
Serial Correlation	0.228 [0.632]	0.219 [0.639]	1.065 [0.302]	0.176 [0.674]	2.081 [0.149]	1.649 [0.199]
Functional form	8.272 [0.004]	10.302 [0.001]	6.260 [0.012]	0.233 [0.629]	2.423 [0.120]	1.387 [0.239]
Normality	39.647 [0.000]	36.760 [0.000]	16.735 [0.000]	0.103 [0.950]	0.591 [0.744]	0.823 [0.662]
Heteroskedasticity	0.581 [0.446]	0.502 [0.479]	0.230 [0.632]	3.701 [0.054]	3.609 [0.057]	3.200 [0.074]
Notes: The t -ratios are given in () and the p -values in the diagnosis tests are given in []. * and ⁺ represent significance at the 5 and 10 percent levels respectively						

The results in columns I and IV are based on equations (2) and (3) respectively. Columns II, III, V and VI report the findings when these equations control for the lagged effects of FDI to account for possible dynamic effects. Given that the time-series windows are relatively small, the lag length did not exceed two years. The diagnostic test results are also reported. The findings reveal that while the coefficients of the share of FDI to GDP (i.e. *FDIG*) are statistically insignificant, the coefficients of the growth rate of FDI stock (*GFDIS*) are positive and significant. The high volatility in FDI inflows explains the differences in these results. Overall, the results indicate that FDI stock has a positive impact on economic growth in Mauritius, consistent with the findings of Blin and Ouattara (2009). Table 4 also points to two other important results: the role of domestic investment and the role of exports in the economic growth process of Mauritius. Domestic investment has a positive, albeit weak, impact on growth, again consistent with the findings of Blin and Ouattara (2009). Our results also indicate that exports are the prime driving force of growth of the Mauritian economy.

Although more systematic firm-level research is needed to assess the impact of FDI on domestic investment and exports in the Mauritian context, it is important to note that FDI resulted in the creation of many small- and medium-sized enterprises (SMEs) in the EPZ sector and the tourism industry. FDI in the textile and clothing industry created a network of SMEs whose main responsibility was to lend support to the large foreign investors. Local firms were commissioned to work on a contract basis to meet the large demand for shirt orders, whereby their tasks in the supply chain were to cut, make up and trim the pieces. Reportedly, this is how the smaller domestic firms learnt about the design and quality that were in demand on the international market.

Managerial expertise was hired from the foreign firms in order to ensure that quality and standards were maintained. It soon appeared that the Mauritians had a sharp learning curve, the workers and managers quickly mastered the manufacturing and managerial techniques. As a result, domestic investment started to crowd-in. Local firms even bought out foreign firms and partnered in joint-venture collaborations. Some started to set up their own businesses. FDI in the EPZ sector also allowed domestic firms to benefit from easier access to information regarding the international distribution and marketing networks. Foreign subsidiaries had better knowledge of consumer taste, potential competitors, regulations and the market structure of targeted markets. This privileged information spilled over to the indigenous firms. However, the foreign firms had higher costs mainly because their managers were entitled to perks which were not customary to Mauritian managers. On the other hand, domestic firms were able to inspire confidence in the local financial institutions about their prospects and were able to receive credit facilities to start up new businesses or upgrade to ownership positions.

During the 1980s, the presumed crowding-in effect of domestic investment in the EPZ sector was mainly the result of the (i) training of labor at the production and managerial levels, (ii) demonstration effects as local firms were able to imitate the designs of foreign firms or partners in joint ventures, and (iii) forward linkage effects as the quality and standard of products improved. The demonstration effect, on the other hand, enhanced export competitiveness of the domestic firms. However, the competition effects were not significant given that FDI was not

market-seeking; backward linkage effects too were minimal as the industry relied mainly on imported raw materials.

In the 1990s, the situation changed quite drastically. From 1992 to 2000, there was an estimated negative correlation of -0.35 between FDI and domestic investment and a correlation of -0.11 between FDI and total investment in the EPZ sector (based on authors' calculations not reported here for the sake of space). However, it should be noted that this negative relationship could be the result of the high volatility of FDI (domestic investment followed essentially an upward trend over this period).

The strongest result of our estimation is that exports are the most important factor in the Mauritian economic success story. Since FDI was mostly in the EPZ sector and the EPZ firms made products exclusively for exports, and exports are the driving force of economic growth in Mauritius, we can infer that FDI played an important role for the promotion of export and growth. Testing of each of these hypotheses would be an agenda of future research; however, Ancharaz's (2003) study also confirms that FDI has been instrumental in the export development of Mauritius.

One of the major contributors of the success of exports to growth was the preferential access Mauritius had to the EU market (under the Sugar Protocol of the Lomé Convention and other preferential textile agreements) and to the U.S. through the Multi-Fibre Agreement (MFA). Moreover, in order to promote FDI-led exports and the competitiveness of domestic firms, the government of Mauritius formed several institutions during the 1980s and 1990s. Three of these were the Mauritius Industrial Development Authority (MIDA), the Export Processing Zone Development Authority (EPZDA), and the Small and Medium Industry Development Organization (SMIDO). The MIDA, established in 1985, is responsible for the promotion of exports of goods and services, advising the government on export development policies and serving as a liaison with exporters to have a better understanding of their needs. It also conducts market development activities and assists in capacity building of exporters. The EPZDA, established in 1990, is responsible for assisting manufacturers in supply chain management, enhancing backward linkages and facilitating the clustering of enterprises. Besides, its role is also to enable EPZ firms to take advantage of higher levels of technology via computerized production equipment and the use of Information Technology in order to become more competent in export-oriented activities. The SMIDO, established in 1993, assists small entrepreneurs in setting up their businesses as well as provides relevant training and advisory services. It also helps in developing their products and exports possibilities.

The role of these institutions has become more significant as the preferential access to the EU and U.S. markets disappeared over time (The Lomé Convention expired in 2000 and the MFA phased out in 2005). However, the U.S.'s Africa Growth and Opportunities Act (AGOA) of 2000 helped the Mauritian clothing and textile industry by providing an average of 17.5 percent customs duty advantage relative to non-African suppliers, subject to strict adherence to rules of origin.

The degree of success of export-led FDI in Mauritius has been criticized for its failure to develop backward linkages in the EPZ sector. This is mainly because demand for intermediate inputs is import-based: Mauritius imports most of its machinery, raw materials, equipment and

semi finished products which are exempt from import duty. In addition, the fact that FDI in Mauritius during the boom years was mainly in the EPZ sector (with a focus on wearing apparels), it limited the prospect of spillover effects to enable a vertical diversification strategy. Malaysia, Taiwan and Hong-Kong have been more successful in adopting such a strategy by moving away from clothing towards the production and assembly of electronic goods. Production of these manufacturing goods is skilled-based and has higher value added content.

POLICY LESSONS AND RECOMMENDATIONS

Lessons

This study has examined the role of FDI in the economic growth success period of Mauritius. It has also examined the role of domestic investment and exports in the growth process. The results indicate that FDI stock, as opposed to FDI inflows, had the most profound contribution to the Mauritian economy. This implies that the accumulation of FDI over time did serve as a powerful mechanism to promote growth through spillovers, technology and knowledge transfers. Moreover, our study shows that since FDI was mostly in the EPZ sector where firms made products (clothing and textiles) exclusively for exports, and exports are the driving force of economic growth in Mauritius, we can conclude that FDI played a crucial role in the promotion of exports and growth.

It is also important to point out that Mauritius emerged as a success story because there was a healthy public-private partnership. The government created a host of institutions such as the MIDA, EPZDA and SMIDO that endorsed Mauritius as an FDI destination, allowed domestic firms and foreign investors to mutually benefit from another, and promoted Mauritian products in international markets. Another key piece to the Mauritian economic miracle is the package of fiscal and financial incentives that the Mauritian government devised to lure export-oriented foreign direct investors to the country. Mauritius also negotiated and benefited from preferential access to EU and U.S. markets for its products.

However, we also observed that, over time, the pattern of FDI in Mauritius has switched away from the EPZ and tourism sectors to the service sectors, in particular, the telecommunications industry. EPZ foreign investors have moved to lower cost locations because of rising labor cost in Mauritius. Besides, there had been massive one-off foreign investments in several years and these created spikes in FDI inflows.

Recommendations

Going forward, Mauritius needs to adopt a vertical diversification strategy towards higher value added products to increase the export productivity of foreign and indigenous firms. In the EPZ sector, this means integrating the textile and clothing industry vertically backward (for instance, by going into yarn spinning which is capital intensive) in order to create backward linkages and to benefit from the new trade agreements under the U.S.'s Africa Growth and Opportunities Act.

In recent years attention has been geared towards information and communications technology (ICT), financial services, offshore banking, freeport, and FDI in higher education. Both the government and the business community have recognized the structural change in Mauritius and that the country needs to embark on its second phase of industrialization. In order to maximize the benefit from FDI and its linkage and spillover effects, the institutional framework is essential. Besides, the opportunities available within regional alliances are non-negligible and should be properly tapped. In this regard, to enable Mauritius to benefit once again from FDI, policy should be designed along the guidelines outlined below. These policy recommendations have been grouped in four broad categories as follows:

Cost and Productivity

Since an increase in labor costs, with unmatched levels of productivity, has been identified as the main reason for the drop in FDI in some years, policies should be devised to enhance labor productivity. In the short-term, this can be increased through the training of the semi-skilled work-force via short and intensive workshops. A longer term solution would involve the introduction of more systematic skills development programs in the education curriculum, particularly at the secondary school level. Labor laws should be made more flexible to increase mobility across sectors. For instance, workers should not lose out on pension schemes when shifting to a more dynamic sector.

The ICT sector has a relatively small pool of skilled IT professionals. The Ministry of Education and Scientific Research and the Ministry of IT and Telecommunications are working in close collaboration to build an IT literate workforce. In primary schools, IT is introduced both as a subject and as a tool for teaching. However, this project has a long term gestation period. A wider scale implementation, though costly, is required. In this capacity building process, the University of Mauritius, the University of Technology, the Industrial and Vocational Training Board and private IT training centers should all be participating actively. In the short run, Mauritius may need to rely on imported professionals for the ICT sector. However, policy makers have to ensure that the sector does not become over reliant on foreign labor.

With the advent of the ICT sector, Mauritius needs to lower telecommunication costs for both national and international services as well as for internet usage. Further liberalization of the telecom sector will help the ICT sector become internationally competitive and cost efficient.

The Mauritian diaspora represents an important pool of expertise and capital which can be imported back or tapped with the right incentives. Indeed, several countries employed this strategy of 'returned brain-drain' to develop their IT industry (for instance, India, China, Singapore and Malaysia).

Synergies at the Domestic, Regional and International Levels

Lessons should be learnt from the EPZ experience that the phasing out of the tax holidays led to an exodus of FDI firms and hence the importance of domestic investors should not be overlooked. Joint ventures or more commitment between domestic firms and foreign investors can bring out important synergies and help avoid Ireland's mistake where FDI firms benefitted at

the expense of the domestic firms (Alfaro *et al*, 2005). Subcontracting relationships of FDI firms and the SMEs will consolidate linkage effects.

To avoid one-off investments, Mauritius should encourage major international players with a long-term interest as they are more likely to bring in more stable returns, create better linkage effects and promote knowledge and technological transfer. In the ICT sector, big companies such as Infosys Limited of India, Outremer Telecom and Teleforma from the U.S. have started operations in Mauritius. More such companies should be attracted.

A new trend that has started in Mauritius is FDI in higher education. Foreign universities, especially from the U.K. and India, have started investing in Mauritius because there is a large pool of students who cannot afford the costly education in advanced countries and Mauritius is relatively cheaper alternative to get a quality education. FDI in education can have a direct impact on growth as well as positive spillovers on other sectors of the economy.

Mauritius should leverage its membership in various regional organizations such as Common Market for Eastern and Southern Africa (COMESA), Southern African Development Community (SADC), Indian Ocean Commission (IOC) and Indian Ocean Rim-Association for Regional Cooperation (IOR-ARC) to promote itself not only as an FDI destination but also to promote its exports to the member countries.

Institutional Framework

The bureaucratic procedures for attracting FDI to Mauritius have discouraged foreign direct investors. The lack of selection criteria for FDI programs has led to the wearisome ‘watch and wait’ approach for investors. It is only recently that the Board of Investment (BOI), the national investment promotion agency of Mauritius, was created in order to simplify and improve upon the procedures for foreign investors to invest in Mauritius. Yet, more transparency is needed in terms of the selection criteria of new FDI programs and less time is required for the approval of FDI projects.

Recent studies by Alguacil *et al* (2011) suggest that host country governments should develop policies that not only promote inward FDI but also improve their political and economic framework. Subramaniam (2001) argues that Mauritius has been successful because it has a ‘deep’ set of institutions that other sub-Saharan African nations lack. Hence, it is important for Mauritius to continue maintaining a high level of institutional infrastructure as it embarks on its second phase of industrialization. This includes a sound political system, a democratic society and a high protection against expropriation. It should continue to maintain a system where the business community is assured that there will be a sound continuity of policies irrespective of which political party is in power.

Fiscal, Financial and Other Incentives

For Mauritius to stand out as a competitor in attracting FDI in the African region, it needs to develop a greater awareness and aggressively promote its fiscal, financial and other incentives to the international business community. It needs to maintain a sound macroeconomic climate with price stability, trade and investment openness, competitive interest rate structure, good and

reliable banking and credit institutions, competitive tax advantages and a transparent and vibrant stock market enabling fair and international trading. A recent study by Agatheea *et al* (2012) indicates that Initial Public Offerings (IPOs) on the Stock exchange of Mauritius are underpriced. Such market misallocations need to be corrected.

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