

# An Analysis of the Impact of Foreign Direct Investment on India's manufactured exports

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## Abstract

In a globalizing world export success can serve as a measure for the competitiveness of a country's industries and lead to faster growth. Recently, a much optimistic view on the role of Foreign Direct Investment (FDI) on export performance in the host country has evolved. The Government of India moved in this direction in mid-1991 which has increased the FDI inflow into India. Viewing the increasing trend of FDI inflows into India, this study explores the impact of FDI inflows on the manufactured exports in India. This study finds that the impact of FDI inflows on manufactured exports is significantly positive. The study also suggests that the policy regarding domestic efforts to enhance manufacturing exports needs reassessment in line with the FDI policy framework in order to reap maximum and long-term benefits.

**Keywords:** Export performance, Foreign Direct Investment (FDI), International trade, Manufactured Exports

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## INTRODUCTION

Countries engage in international trade for a variety of reasons. Exports, in particular, are a means to generate the foreign exchange required to finance the import of goods and services, to obtain economies of specialization, scale and scope in production and to learn from the experience in export markets. In a globalizing world, furthermore, export success can serve as a measure for the competitiveness of a country's industries.

It may be noticed that export success among developing countries has been concentrated only in a few countries. But, the comparative advantage of most of the developing countries still lies traditionally in primary commodities and unskilled-labour-intensive manufactures. Over time, as they grow and accumulate capital and skills, and wages rise, their competitive base has to change. They have to upgrade their primary and labor-intensive exports into higher value-added items, and they have to move into new, more advanced, export-oriented activities. Both require greater inputs of skill and technology. Countries can attain these objectives in several ways: by improving and deepening the capabilities of domestic enterprises or by attracting Foreign Direct Investment (FDI) into export activities and upgrading these activities over time. These strategies may be complementary or alternatives. In most cases they are found together, but different countries deploy different combinations of domestic enterprise-led and FDI-led export development (UNCTAD, 1999).

While FDI traditionally played an important role in natural resource exports (ESCAP/UNCTC, 1985; ESCAP/UNCTAD, 1994), its role is growing in the exports of certain processed agricultural products. It is also playing an increasing role in services, especially in tourism (UNCTAD, 1998). But, the focus here is on manufacturing oriented exports as manufactured products are more relevant for a developing economy as an indicator of continued long-term dynamic growth in exports as well as the whole economy.

## THE INDIAN SCENARIO

The Government of India saw in FDI a potential non-debt creating source of finance and a bundle of assets, *viz.*, capital, technology, market access (foreign), employment, skills, management techniques, and environment (cleaner practices), which could solve the problems of low income growth, shortfall in savings, investments and exports, and unemployment. It was argued that FDI would also help India in the expansion of production and trade and increase opportunities to enhance the benefits that could be drawn from greater integration with the world economy. In other words, FDI would broaden the opportunities for India to participate in international specialization and other gains from trade. Besides FDI, export orientation has also been hailed as an engine of growth. The Newly Industrialized Economies' (NIEs: Singapore, Hong Kong, and Tai-wan) successful economic development has been attributed to these economies' success in pursuing an export-led growth strategy (Kohpaiboon, 2007).

But more importantly, it was part of the IMF and World Bank conditionality that the Government of India must resort to macro-economic reforms and structural adjustments in order to be bailed out from the severe

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economic crisis in 1990-91 (UNCTAD, 1999). So, in mid-1991 the Government of India resorted to full-fledged macro-economic reforms and structural adjustments with the announcement of the New Economic Policy (NEP). The liberalization policy automatically helped increase the FDI inflow into India. And indeed, the increased inflows of FDI into the Indian economy have led to the expansion of cross-border production by multinational enterprises and their networks of closely associated firms in India. But, whether the impact of all this is on manufactured exports is positive or negative is the question. In view of the facts observed above, this study makes an attempt to analyse the impact of FDI on the manufactured exports in India.

### THEORITICAL AND EMPRICAL FOUNDATIONS

This section deals with the studies previously conducted on the role of FDI in strengthening the manufacturing export performance of developing countries. It is pertinent to point out that many studies such as those of Athukorala and Menon (1995), Zhang and Song (2001), Zhang and Felingham (2001), Liu *et al.* (2001), Zhang (2005), Banga (2006), Piamphongsant (2007), and Kohpaiboon (2008) find that FDI promotes the manufactured exports of recipient countries. But, the pattern of manufacturing export success in the developing world is highly skewed. A small number of countries dominate manufactured export activity, with concentration level rising by level of technological sophistication. Balasubramanyam *et al.* (1996) find the effect of FDI on average growth rate for the period 1970-85 for the cross-section of 46 countries as well as the sub-sample of countries that are deemed to pursue export-oriented strategy to be positive and significant but not significant and some times negative for the subset of countries pursuing inward-oriented strategy. Similar findings have been shown by Athukorala and Chand (2000) and Kohpaiboon (2003, 2006a, 2006b).

Aitken *et al.* (1997) showed the external effect of FDI on export with example of Bangladesh, where the entry of a single Korean Multinational in garment exports led to the establishment of a number of domestic export firms, creating the country's largest export industry. Hu and Khan (1997) attribute the spectacular growth rate of Chinese economy during 1952 to 1994 to the productivity gains largely due to market oriented reforms, especially the expansion of the non-state sector, as well as China's "open-door" policy, which brought about a dramatic expansion in foreign trade and FDI.

In this direction, Greenway *et al.* (2004), and Kneller and Pisu (2007) suggest that MNCs, especially export-oriented ones, appear to generate positive export spillovers and significantly increase the probability of exporting for domestically-owned firms operating in the same industry. Conversely, Barrios *et al.* (2003) studied the case of Spain and found no evidence of

export spillovers to local firms from the existence of MNCs. Ruane and Sutherland's (2004) findings through using the case of Ireland agrees with Barrios *et al.*'s findings that there appears to be no evidence of export spillovers from MNCs to local firms in Ireland.

What leads to these mixed results? This can be seen from many studies that have portrayed that the export role of FDI, particularly by MNCs or TNCs from developed countries, has understandably been larger in complex industrial activities and hence contributed to positive spillovers and expanded the export base. In this connection Bernard and Jensen (2004), in their study observe that large, productive plants, plants which are owned partially or wholly by US MNCs, and/or plants with high labour quality all have higher probabilities of exporting and a higher propensity to export. This role has varied by country, and has been especially important in three types of activities: offshore assembly, mature infant industries and large – scale processing of natural resources for exports.

Offshore assembly for export is concentrated in electrical and electronic industries (Yeats, 1998), with some activity in automotive and other engineering products. This can be seen in the Indian economy also. In the hard disk drive industry, United States TNCs conduct innovative R&D at home, perform complex technological tasks in Singapore and less advanced ones in Thailand and, more recently, China (Wong, 1997).

The main area of offshore assembly activity of FDI can be viewed in EPZs. The impact of EPZs on the long – term export performance, however, is unclear. A once-for-all increase in exports based on low wages is not the same as sustained upgrading of skills and capabilities. The generous use of incentives to attract FDI to EPZs often raises doubts about the net contribution of EPZs to the country. Their sole benefit often lies in the employment of low-wage, low-skilled labour, with little spillover to domestic firms or to skill and technology development. A transition from labour-intensive assembly with very low value added to more value-added activities and deeper local linkages may not take place. Where it does, it takes time. In Bangladesh, where garment exports from EPZs began in the 1970s, there are signs only now that the industry is moving beyond the simple assembly of shirts (ILO, 1998 and van Heerden, 1999).

However, there are several cases where EPZs have deepened their linkages and technological levels over time. In Malaysia, electronics exporters have attracted other TNCs to deepen backward linkages, and have also increased sourcing from local firms. They have upgraded their technological activity and enlarged their product range. However, such development is not automatic: much depends on policies for upgrading skills and attracting the right kind of investor. Much of

Singapore's success is due to careful targeting of industries such as electronics, which accounts for over half of exports, and to inducements for TNCs to upgrade their technologies. In turn, this was feasible only because of government investments in skills, infrastructure and support institutions (ILO, 1998; van Heerden, 1999).

The second type of complex export-oriented activity involves mature infant industries and is an outgrowth of import substitution, from industries being restructured because of economic liberalization (Londero and Teitel, 1998). In most large import-substituting economies with a large foreign presence, such as Mexico and Argentina, TNCs lead the export surge. In some cases they induced upgrading of their suppliers and deepened their own technology into design and research activity in some major production centres (Mortimore, 1997, 1998).

The third type of activity involves large-scale processing of natural resources for export. Benavente *et al.*, (1997) in this connection observe that the liberalization of FDI served to attract considerable foreign interest in building state-of-the-art facilities in the Latin American countries. For example the development in mining projects in Chile, mining, oil and natural gas in Argentina, Mexico and Venezuela.

In total, as local firms grow and become international competitors, it becomes harder for them to obtain technology from TNCs through FDI. Independent R&D then becomes vital in order to copy, absorb and create technology; the leading firms set up large research and design department and invest heavily in innovation (Hobday, 1995; Kim, 1997). More recently, local firms have begun to use strategic alliances with leading foreign TNCs to expand their technology base. All in all, the autonomous strategy has given such developing economies much greater local content in sophisticated manufacturing and industrial depth and in manufacturing export performance. Leading electronics firms in the Republic of Korea and Taiwan Province of China are good examples of local firms using arm's-length technology transfer and exporting arrangements to build their capabilities (Hobday, 1995).

However, UNCTAD (1998) is skeptical about the positive contribution of FDI on manufacturing export performance as it opines that capital and consumption goods not available locally are imported, and profits remitted, thus cutting into the export earnings generated. Ernst *et al.* (1998) observe that the role of FDI was low in countries where local firms had good capabilities and could undertake subcontracting at low cost to the buyer. The FDI role tended to be larger when local capabilities were weak. Similarly, in Latin America FDI's role was high in low – quality segments where wage costs are the main competitive factor; there

is little design capability or independent marketing (Mortimore, 1998).

A study on China brings to notice both positive and negative trends in the same country with regard to the role of FDI on export performance. In east China, geographical advantage in export attracts FDI inflow and FDI promotes export. In addition, rise of FDI-GDP ratio increases regional share in industrial value added in east China. These effects contribute positively to regional income growth in east China although there is a direct crowding out effect between FDI and domestic investment (as input) in growth. In contrast, the negative impact of FDI inflow in central China on regional export orientation weakens its contribution to regional income growth (Mei Wen, 2002).

Hence, FDI through TNCs has the potential to contribute to export performance in host countries. Their role is particularly large in the most dynamic segments of export activity and, within those, in activities where increasing amounts of trade are inside corporate networks. How well developing countries use this potential depends largely on their own strategies and efforts. Opening up passively to international investment and trade is useful, but it is only a partial answer. Its main benefit lies in realizing existing comparative advantages based on natural resources and initial capabilities. Where capabilities are weak and static, FDI may well lead only to a short-lived hump in export performance. To build a more sustainable and dynamic export base, countries have to use proactive policies. They also need to improve their human capital and capabilities in order to attract higher quality investment. This allows them to attract more sophisticated activities and functions from foreign investors and to strengthen domestic enterprises as direct exporters and as suppliers to TNCs. Only the development of a local capability base will allow countries to plug into the dynamic segments of export activity. TNCs can, in turn, help in the further development of domestic capabilities, leading to a virtuous circle of rising incomes, higher-quality FDI and dynamic competitiveness in trade (UNCTAD, 1999).

## MATERIALS AND METHODS

The primary source of data for this study is the online database of the RBI (Reserve Bank of India) covering the 16 year period from 1991-92 to 2006-07. The data includes the Inflow of FDI into India, Real GDP, Manufacturing Value Added, and Commodity-wise Export of India during the study period.

The analytical framework of the study is based on the analysis of export performance on developing countries by UNCTAD (1999). The dependent variable in the first and second cases are taken as total manufactured exports and high-technology manufactured exports

respectively; independent variables in both the cases are taken to be inward FDI and manufacturing value added. Manufacturing value added would be proxy for the domestic efforts in expanding the manufacturing level in the country. The basic model is algebraically expressed as:

$$EX = \alpha + \beta_1 FDI + \beta_2 MVA \quad (1)$$

where, EX is the export of commodities, FDI is the inward FDI into India, MVA is the manufacturing value added,  $\alpha$  is the constant and  $\beta_1$  and  $\beta_2$  are the coefficients of the inward FDI and manufacturing value added, respectively. Based on the above equation this study takes total manufactured exports and high-technology exports as dependent variables in the forthcoming equations. Also a one year lag has been given to the FDI variable to allow for the lags in the execution of FDI projects. Hence, the model would read as:

$$MANX_t = \alpha + \beta_1 F_{t-1} + \beta_2 MVA_t \quad (2)$$

where, MANX = ratio of total manufactured exports to real GDP; F = ratio of FDI to real GDP; MVA = percentage of manufacturing value added;  $\alpha$  is the regression constant;  $\beta$ s are the respective regression coefficients; t is the time period in years.

**Table 1.** Consistency of date sequences of the variables (ADF TEST)

Variables	Actual	
	T	P - Value
MANX	-2.932*	0.100
HIMANX	-2.928*	0.100
FDI	-4.863***	0.000
MVA	-3.966**	0.034

\*\*\*, \*\* & \* Significance at 1%, 5% and 10% levels respectively  
P – values based on MacKinnon (JAE, 1996)

**Table 2:** The Impact of FDI on Total Manufactured Exports

Independent Variables	$\beta$	t	Sig.
(Constant)		2.750	0.018
$F_{t-1}$	0.819	5.866*	0.000
$MVA_t$	0.241	1.724	0.110

Dependent Variable: Total Manufactured Exports as % of GDP  
R Square = 0.768; F Value = 19.907; P Value = 0.000  
\*Significance at 1% level

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$$HIMANX_t = \alpha + \beta_1 F_{t-1} + \beta_2 MVA_t \quad (3)$$

where, HIMANX = ratio of high-technology manufactured exports to real GDP; the other variables are same as in equation (2).

The present study has employed the ADF test (Augmented Dicky Fuller test) to check the consistency of the data sequence of the variables. The results of the ADF tests for the variables are displayed in Table 1. It can be seen from Table 1 that the 't' statistic corresponding to all the variables are negative and their corresponding P-values fall within the permissible significance levels, which shows that all the variables do not have the presence of a unit root and are stationary

**Table 3.** The Impact of FDI on High Technology Manufactured Exports

Independent Variables	$\beta$	t	Sig.
(Constant)		2.857	0.014
$F_{t-1}$	0.816	5.864**	0.000
$MVA_t$	0.250	1.792*	0.098

Dependent Variable: High Technology Manufactured Exports as % of GDP.

R Square = 0.770, F Value = 20.056, P Value = 0.000

\*\* & \*Significance at 1% and 10% levels respectively

in their original form. Hence, all the variables have been taken in their original logarithmic form at 1993-94 prices for the analyses.

## RESULTS AND DISCUSSION

In the empirical analysis, attempts have been made to establish the impact of FDI on manufactured exports in India. The results of equation (1) are displayed in Table 2. The multiple determination model has yielded an R square value of 0.768 which implies that 77 percent of the variation in total manufactured exports ( $MANX_t$ ) is caused by the regressors involved in the model. The corresponding 'F' statistic is 19.907 and the corresponding P value is 0.000. Hence it is significant and implies that the model is a good fit for the data.

The 't' statistic corresponding to the partial regression coefficient of the regressor  $F_{t-1}$  is 5.866 and the corresponding P value is equal to 0.000 which implies that the regression coefficient is highly significant and so  $F_{t-1}$  is a variable which is a positive determinant of total manufactured exports ( $MANX_t$ ). It also registers as the only significant determinant of total manufactured exports ( $MANX_t$ ). The corresponding regression coefficient  $\beta_1$  is equal to 0.819 which means a one unit change in FDI would increase 0.82 unit increase in total manufactured exports.

The other partial regression coefficient of the model  $MVA_t$  manufacturing value added in the model has student 't' statistic value of 1.742 with P value equal to 0.110. This explains that the regression coefficient corresponding to the variable is not significant in determining total manufactured exports ( $MANX_t$ ). But, we cannot completely omit this variable because the regression coefficient corresponding to this independent variable is 0.241. So, manufacturing value added ( $MVA_t$ ) may influence total manufactured exports ( $MANX_t$ ) positively but it is not likely that it would always do.

The results of equation (2) are displayed in Table 3. From the analysis it is seen that the value of R square coefficient of the multiple determination is 0.665 which implies that 67 percent of the variation in high-technology manufactured exports ( $HIMANX_t$ ) is caused by the regressors involved in the model. The corresponding 'F' statistic is 11.897 and the corresponding P value is 0.001. Hence it is significant and implies that the model is a good fit for the data.

The 't' statistic corresponding to the partial regression coefficient of the regressor  $F_{t-1}$  in this case is 4.531 and the corresponding P value is equal to 0.001 which implies that the regression coefficient is highly significant and so  $F_{t-1}$  is a variable which is also a positive determinant of high-technology manufactured exports ( $HIMANX_t$ ). Here too, this variable registers as the only significant determinant of total manufactured exports ( $MANX_t$ ). The corresponding regression coefficient  $\beta_1$  is equal to 0.761 which means a one unit change in FDI would increase 0.76 unit increase in high-technology manufactured exports.

The 't' statistic value for the other partial regression coefficient in the model  $MVA_t$  manufacturing value added has a value equal to 1.792 with P value equal to 0.098. This explains that the regression coefficient corresponding to the variable is significant in determining high-technology manufactured exports ( $HIMANX_t$ ). The regression coefficient corresponding to  $HIMANX_t$  is 0.225 which implies that a one unit change in manufacturing value added would lead to a 0.22 unit increase in high-technology manufacturing exports.

From the above given inferences and the fact that the ratio of total manufactured exports to real GDP of India has increased from just 4.62 per cent in 1991-92 to 19.18 per cent in 2006-07, and that the ratio of high-technology manufactured exports to real GDP has risen from just 2.44 per cent in 1991-92 to 10.04 per cent in 2005-06 it can be gathered that FDI inflows into India have led to significant increase in total and high-technology manufactured exports. This suggests that FDI has improved India's export performance. The contribution of the domestic component in improving total manufactured exports, i.e., manufacturing value added

is remote. The manufacturing value added, however, contributes to high-technology manufactured exports positively at the 10 per cent level of significance. So, on the whole, while FDI have strong positive links with the total and high technology exports, domestic efforts, though have positive links, but not as strong as FDI.

The reason for this is probably because FDI inflows are not leading to spillovers into the Indian manufacturing sector as argued in the literature review. This is further supported by Gorg and Greenaway (2004). We cannot entirely blame it on FDI because the Indian macro economic policy framework has not been concentrating on the manufacturing sector for the past decade or so. The much needed investments to enrich manufactures in India are currently being diverted to other activities such as services (Papola, 2005), the reason being 'quick returns' in the service sector as compared to manufacturing. But, developing other areas at the cost of core areas like manufacturing may not be right for the Indian economy in the long-run.

## CONCLUDING REMARKS AND POLICY IMPLICATIONS

The empirical findings of this study show that inward FDI has significantly contributed to better the export performance of India between 1991-92 and 2006-07 and that the Indian manufacturing has not contributed significantly in enhancing export performance during the same period. It would be right in this connection to cite UNCTAD (1999), ".....FDI may well lead only to a short-lived hump in export performance. To build a more sustainable and dynamic export base, countries have to use proactive policies..... Only the development of a local capability base will allow countries to plug into the dynamic segments of export activity."

Further, arguments put forward by Huang (2003) and Rudolph (2006) suggest that giving importance to FDI inflows alone will not lead to any benefits for the domestic manufactures. Instead, it would start to give the opposite results, i.e., the contraction of the domestic manufactures. As argued by Balasubramanyam and Sapsford (2006) FDI is not a panacea for the development problem, it is a catalyst in the growth process. It enhances the efficiency of other inputs in the growth process through its well known role as a supplier of technology and know-how. Further, it must be noted that FDI inflows for export production are based on relative endowments, attracted by factor cost differentials and repelled by trade costs (Demekas *et al.*, 2007).

So, if the Government of India aspires to continue on the export oriented strategy and benefit from it in the long run, it needs to concentrate more on domestic efforts to expand manufacturing in line with the FDI policy framework. Also, considering that FDI policy of India

may not entirely be a choice of the Government of India as it may have to follow IMF and World Bank conditions and much international pressure, a reassessment of the domestic macro economic policy framework regarding manufacturing sector is the requirement of the hour. Most importantly, the Government of India must recognize that FDI can only complement domestic efforts to meet development objectives, they alone cannot do wonders. Hence, to develop the export performance of India sustainably and dynamically which would in turn lead to faster growth of the whole economy, FDI policies and other domestic policies cannot be pursued in different water-tight compartments. Instead, they must be blended together in order to achieve a complementary effect on each other.

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