Foreign Direct Investment and Labour: The Case of Indian Manufacturing

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Abstract: This paper makes an attempt to evaluate the employment and wage effects of FDI in Indian manufacturing. The findings suggest that foreign firms do not have any adverse effects on the manufacturing employment in India as compared to their domestic counterparts while they significantly pay relatively higher to their workers. Therefore this study tends to imply that labour in fact had benefited from foreign investment in India.

1. Introduction.

The effect of foreign direct investment (FDI) on labour particularly on employment and wages continue to be an important issue for labour-surplus developing economies such as India with significant levels of unemployment. Unfortunately this issue has not yet received much attention in India even though the FDI inflows into the economy has seen dramatic growth in the 1990s following the continuing process of economic reforms including liberalization of the FDI policy. As FDI is increasingly claiming major chunk of aggregate investment in the economy the economic analysis of FDI should not be confined to its impact on output and productivity alone as the existing literature stands and must be broaden to investigate its impact on labour market. Unless the process of economic growth based on larger role of FDI meet the 'test of sufficient growth in gainful employment' over time the process of economic reforms which is continuously enlarging the role of FDI cannot be politically sustainable and bound to falter (Bhaduri 1996).

Theoretical understandings on 'why has foreign investment got differential impact on the labour market of the host country vis-à-vis their domestic counterparts?' can be deduced

from the industrial organization theory of FDI. This theory as proposed by Hymer (1960) and later extended by Kindleberger (1969) and Caves (1971) argued that foreign firms possess a bundle of intangible assets such as sophisticated product differentiation, management and organizational skill, and superior technology which provides some monopolistic advantages to these firms over the local and third country firms. The differential labour market outcome can emanate directly from the differences in the nature of technology employed by the foreign firms as compared to the domestic firms. If the foreign firms are employing relatively more capital intensive and skill biased technologies than domestic firms, then they can be expected to have lower employment elasticity of output as compared to the domestic firms with labour-intensive techniques of production. For attracting high skilled workers for their sophisticated production technology and to prevent labour turnovers they can also be expected to pay higher to the labour. In view of this foreign investment can have significant implications for the distribution of national income as it tends to benefit only a minor section of labour force, namely skilled labourer, by generating employment for them and awarding higher wages, better working conditions and security of employment. Understanding of the labour market issue of foreign investment is even more important as it involves the possibility that it can crowd out domestic investment (Fry, 1992; Marksun and Venables, 1997; Agosin and Mayer, 2000; Kumar and Pradhan, 2002) with higher employment content.

Against this background the present paper seeks to make an exploratory attempt to evaluate the employment and wage effects of FDI in Indian manufacturing. The paper is structured in the following way: Section 2 summarizes the changes in policy regime and provides recent trends in FDI inflows into the Indian economy. It also provides a brief discussion on the significance of foreign firms in Indian manufacturing. Section 3 analyzes the labour impacts of FDI, presenting the industry-wise wage rate and employment elasticity of

output differentials between foreign and domestic enterprises. Finally, Section 4 concludes the paper with major findings.

2. FDI Policy and Recent FDI Trends

2.1 FDI Policy Regime

The evolution of India's FDI policy can be traced back into three distinct phases since Independence (Radhakrishnan and Pradhan 2000). From 1948-1980 Indian FDI policy became highly restrictive as a part of the import-substituting industrial policy pursued. The FDI policy during this phase was governed by three important government regulations such as the Industrial Development and Regulation Act (IDRA 1951), the Monopolies and Restrictive Trade Practices Act (MRTPA 1969) and the Foreign Exchange Regulation Act (FERA 1973). The IDRA with its elaborate industrial licensing system was sought to regulate the establishment of new industries, and expansion and diversification of existing enterprises. The MRTP Act had restricted the entry of large industrial houses including dominantly foreign owned companies in a number of industries other than 'core' industries and that requiring heavy investments. The FERA was promulgated to regulate the operation of foreign companies in India and required that all subsidiaries of foreign companies should bring down the foreign equity share to 40 percent or less. However, foreign companies operating in 'core' industries including plantations or producing predominantly for exports or bringing in sophisticated technologies were allowed to retain foreign equity holdings above the stipulated limit up to 74 percent. In short, during this period the FDI policy had restricted the entry of foreign firms into a select group of high priority industries, permitted only those new FDI proposals which were

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accompanied by technology transfer and limiting foreign equity participation to 40 percent with few exceptions.

However, in the 1980s India's FDI policy began to liberalize. The inward looking industrial policies followed till 1970s with rigorous pursuance of import restrictions and indiscriminate import substitutions to a wide range of sectors, excessive planning, complex system of industrial licensing, trade policy generating strong anti-export bias, absence of domestic competition, and restrictive FDI policy led to the emergence of Indian manufacturing as high-cost, poor quality and low export-oriented. This led government to implement the partial measures of liberalization, de-licensing and a host of incentives to break the stagnation in industrial sector and to promote exports. As a part of this liberalization measures government attitude to FDI became more liberal. Foreign companies were allowed to enter into de-licensed 28 broad categories of industries and 82 bulk drugs and their formulations. The foreign companies with 100 percent export-orientation were exempted from the general ceiling of 40 percent under FERA and were exempt from licensing requirement for production in excess of licensed capacity and were provided duty-free access to imports of raw materials, intermediate goods, and capital goods on OGL.

The last phase in the evolution of FDI policy covers the period 1991 onwards. Following the balance of payment (BOP) crisis in 1990-91 India had implemented full-scale economic reforms in 1991 with radical changes in government policies relating to trade, industry, technology, foreign investment, exchange-rate, and so on. The New Industrial Policy (NIP) announced on 24 July 1991 had abolished industrial licensing system for all industries except where it is required for strategic or environmental concerns. As a result 80 percent of Indian industry was out of the licensing system. Many areas hitherto closed to private sector including foreign investment have been thrown open and the phase manufacturing programme

(PMP) was abolished for all new projects. The limit of foreign equity participation was raised

from 40 to 51 % in a wide range of industries as listed in Annexure III of the New Industrial

Policy Statement of July 1991 and the automatic approval route has been put in place. The

Foreign Investment Promotion Board (FIPB) has been established to negotiate with large

international firms and to expedite the clearances required. It can also consider individual cases

involving foreign equity participation over 51 per cent.

However, the initial changes in FDI policy announced in July 1991 had undergone

significant changes with government announcing new reform measures in each passing year.

These measures are being summarized in BOX 1.1.

Box 1.1 : India's regulatory environment for inward FDI, 1992-2001

Year	Description of measures adopted/industries liberalized.
1992-1993	• The dividend-balancing condition earlier applicable to foreign investment up to 51 % equity is no longer applied except for consumer goods industries. • FDI has been allowed in exploration, production and refining of oil and marketing of gas and coalmines. • NRIs and overseas corporate bodies (OCBs) predominantly owned by them are permitted for 100% investment in high-priority industries with reparability of capital and income. 100% NRIs investment is also permitted in export houses, trading houses, hospitals, EOUs, sick industries, hotels & tourism. • Disinvestments of equity is no longer needs to be at prices determined by the Reserve Bank. • Adoption of national treatment principle by which companies with more than 40 % of foreign equity are now treated on par with fully Indian-owned companies. • Foreign companies have been allowed to use their trademarks on domestic sales from 14 May 1992. • India has signed the Multilateral Investment Guarantee Agency Protocol for the protection of foreign investment on 13 April 1992.
1994-1995	• De-licensing of almost all bulk drugs and allowing automatic approval of foreign equity up to 51 % in most drugs and formulations. • Basic telecommunication services hitherto reserved for the public sector were opened for private participation including foreign investment (up to 49%). • RBI based automatic approval policy for foreign investment was made applicable to mining (except for automatic minerals and mineral fuels) subject to a limit of 50 % of foreign equity. • Areas like development and maintenance of airport infrastructure and material handling at major airports have been opened up for private participation.
1995-1996	• The number of items requiring industrial licensing has been further reduced to 15, which account for only 15 % of manufacturing value-added. • The number of industries reserved for public sector has been further reduced to 6 namely defence products, atomic energy, coal and lignite, mineral oils, railway transport and minerals

	specified in the schedule to the Atomic Energy Order 1953.
	• Foreign investment has also been liberalized in many other sectors such as power (100%) and industries reserved for SSI (up to 24 % equity which require prior SIA approval and export obligations).
1996-1997	• The list of Industries for automatic approvals of foreign equity by the RBI has been expanded from 35 industries as mentioned in the Annexure III by including 3 industries relating to mining activity for foreign equity up to 50 percent and 13 additional industries for foreign equity up to 51 percent. These 13 industries include a wide range of industrial activities in the capital goods and metallurgical industries, entertainment electronics, food processing and service sector like health, R&D, technical testing.
	• In 9 industries including electricity, non-conventional energy, construction and maintenance (of roads, bridges, harbours, runways etc), industrial and power plants, water transport, etc the automatic approval of FDI enhanced up to 74 percent.
	• For expeditious approval of FDI in areas not covered under automatic approval, the first ever guidelines for approval of foreign investment has been announced.
1999-2000	• Foreign Investment Implementation Authority (FIIA) was established within Ministry of Industry to felicitate approvals of foreign investment are quickly translated into actual. In particular, in cases where FIPB clearance is needed, approval time has been reduced to 30 days.
	• Except a small negative list, all industries are placed under the automatic route for FDI/NRI/OCB investment. The negative list includes all proposals requiring industrial license under the Industries (Development and Regulation) Act 1951; cases having foreign equity more than 24 percent in equity capital of units manufacturing items reserved for the SSI sector; all items requiring industrial license in terms of the locational policy notified under the New Industrial Policy, 1991; proposals having previous venture/tie-up; proposals falling outside notified sectoral policy/caps etc.
	• Foreign equity limit for FDI through automatic route for drugs and pharmaceuticals raised to 74 percent from 51 percent.
2000-20001	• 100 % FDI permitted for business to business e-commerce
	• The cap on FDI in the power sector has been removed
	• 100 % FDI permitted in oil refining.
	• 100% FDI allowed in Special Economic Zones (SEZs) for all manufacturing activities.
	• Removal of dividend balancing condition on 22 consumer items.
	• 100 % FDI permitted in telecom sector for certain activities with some conditions
	• Existing companies with FDI are eligible for automatic route to undertake additional activities covered under automatic approval route.
	• 26 % FDI in the insurance sector is eligible for automatic route subject to obtaining a license from the Insurance & Development Authority.
	• Automatic route is also open to 100 % FDI proposals in the information technology sector for certain activities such as ISPs not providing gateways, Infrastructure Providers providing dark fiber (IP category), electronic mail, and voice mail.
2001-2002	• FDI up to 49 % is permitted in the private banking sector on the automatic route subject to conformity with RBI regulations.
	• 74 % FDI is permitted in telecom sector for activities involving Internet Service Provider with gateways, Radio paging, and end-to-end bandwidth subject to licensing and security requirements.
	• 100 % FDI is permitted in airports, with FDI above 74 % requiring prior approval of the Government.
	• 100% FDI is allowed with prior government approval in courier services subject to existing laws and exclusion of activities relating to distribution of letters.
	• 100% FDI is permitted with prior government approval for development of integrated township

	including housing, commercial premises, hotels, resorts, city and regional level urban infrastructure like roads and brides, mass rapid transit systems and manufacture of building material in metros.
	• 100% FDI is permitted under automatic route in hotel and tourism sector and for mass rapid transport systems in all metropolitan cities including associated commercial development of real estate.
	• 100% FDI in drugs and pharmaceutical (excluding those which attract compulsory licensing or produced by recombinant DNA technology and specific cell/tissue targeted formulations) is placed under the automatic approval route.
	• The defence sector is opened up to 100 % for private sector participation with FDI permitted up to 26 % both subject to licensing.

Source: Authors compilation based on various issues of Economic Surveys, Government of India.
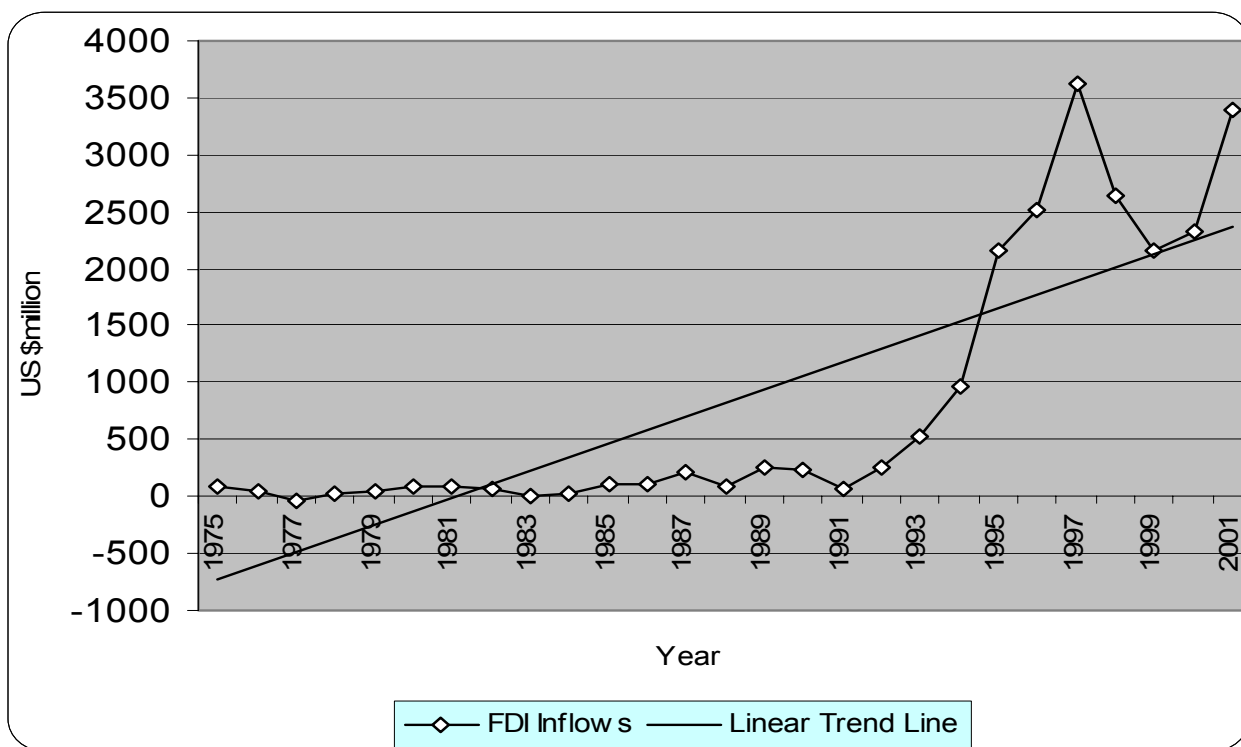
2.2 Recent Trends in FDI

The liberalization of FDI regime during 1990s has witnessed a rapid increase in FDI inflows into India. The FDI inflow which has hovered around an average of $ 33 million during 1975-79 and $ 105 million during 1980-89, zooms to a record level of $1741 million during 1990s (Table-1). The Figure-1 clearly shows that FDI inflows during the restrictive periods were very minimal and have picked up only during the liberalization phase. In the boom period of 1990s the FDI inflows has grown at a much faster rate attaining the peak level of $ 3.62 billion in 1997, then had slowed down in 1998 and 1999 before again rising during 1999-2001. This rapid growth in FDI inflows can be seen as resulting from the liberalization process relaxing restrictions on foreign ownership in existing sectors and opening up of many new sectors such as mining, banking, insurance, telecommunications, construction and management of ports, harbors, roads and highways, airlines, and defence equipment. Other factors that may have contributed towards this increasing trend may be the high growth performance and large size of the domestic markets.

Not only FDI inflows have risen dramatically during 1990s but also their nature and characteristics has undergone significant changes (see Kumar 1998; Rao et. al. 1999 for more details). Prior to 1991 the majority of FDI projects approved are invariably of minority

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ownership of less than 40 percent as postulated by FERA and were overwhelmingly directed at manufacturing sector. However, FDI activities during 1990s has taken majority ownership in majority of FDI approvals cases and were primarily directed at the service sector like telecommunications, financial and banking, hotel & tourism, and air & sea transport. Another significant development in FDI inflows during 1990s is the emergence of M&As as an important channel of FDI inflow (Kumar 2000). Before 1990s invariably FDI entry was in the nature of greenfield investments whereas over 1997-1999 nearly 39 percent of FDI inflows into India has been in the form of M&As by foreign companies of existing Indian enterprises.

Figure-1 FDI Inflows into India, 1975-2001

Source: Author based on UNCTAD on line FDI Statistics (2003)

Table-1 Economic Significance of FDI Inflows in India

Period	FDI (US $ million)		FDI Inflows		FDI Inward Stock	
						(Annual Average)
	Inflows	*Stocks*	*as percentage of GFCF*	*per $1 000 GDP*	*As a % of GDP*	*per capita*
1975-79	33.4		0.184	0.308		
1980-89	104.8	1117.3	0.213	0.429	0.489	1.476
1990-2001	1740.6	9109.6	1.796	4.071	1.993	9.334

Source: Author's estimation based on UNCTAD on line FDI Statistics (2003)

To have an idea about the economic significance of FDI inflows for Indian economy some traditional indicators like FDI share in domestic capital formation and GDP has been presented in Table-1. Although for Indian economy the share of FDI inflows in the gross fixed capital formation (GFCF) is not substantial but was found to be steadily increasing from 0.18 percent in 1975-79 to 0.21 percent in 1980-89 and further to 1.8 percent in 1990-2001. This is indicative of the fact that FDI is increasingly contributing towards bridging the domestic resource gap by allowing higher level of investment otherwise not possible. If FDI stock can be taken to represent the activities carried out by foreign resources in India, then the share of FDI stock to GDP measure the importance of foreign production in overall economic activities of the economy. It can be seen from Table-1 that FDI stock as a percent of GDP has increased from 0.5 percent in 1980s to nearly 2 percent in 1990s. Therefore the role of FDI inflows in Indian economy has steadily increased during the 1990s.

2.3 Role of FDI in Indian Manufacturing

The large scale entry of foreign firms and increasing foreign participation in existing enterprises during 1990s can be argued to have augmented the contribution of FDI-led production towards domestic output in Indian manufacturing. Although the estimates for late 1990s is not available several studies in the past on foreign firms share in gross sales of total manufacturing and of individual industries suggest that foreign firms continue to have a

dominant position in Indian manufacturing with wide inter-industry variation (Chandra, 1977; Kumar, 1988; Arthreye and Kapur, 1999). Kumar (1990) had estimated that the foreign controlled firms accounted for nearly 25 per cent of output of larger private corporate sector and 31 per cent in manufacturing sector in 1980-81. The estimates for total manufacturing by Arthreye and Kapur (1999) suggest that foreign firms in 1990-91 were source of about 26 percent of sales, which has declined from 31 percent in 1980-81. The long-term trends in the share of foreign firms in total sales has observed a moderate decline between 1970-1990 given the restrictive attitude followed by government with respect to FDI. Given the liberalization of FDI policy and boom in FDI inflows the share of foreign firms must have risen in the 1990s and must have been greater than a quarter of gross sales. Therefore, foreign firms are now increasingly contributing towards domestic production in Indian manufacturing.

3. Labour Impact of FDI

The previous discussion shows that foreign firms are dominant producers in Indian manufacturing with their role increasing with each passing year. Thus they can be expected to have significant impact on Indian labour market in terms of employment generation and wages given to the workers. To examine the impact of foreign ownership on labour the study has obtained firm-level employment and wage data from the PROWESS database (2003) of the Centre for Monitoring Indian Economy (C.M.I.E.) for year 2001-2002. Employment data relating to previous years are not available as the provisions of the Companies Act, 1956 and the Companies (Particulars of employees) Rules, 1975 never required companies to reveal their total number of employees. Only the recent amendment in 2000 made it mandatory for companies to reveal their total number of employees. As the employment data is available for limited number of firms the findings of the study can be taken as indicative and exploratory in

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nature. To differentiate between foreign and domestic firms a cut off point of 25 percent of foreign share, as used in the previous literature, has been employed. Firms with 25 percent or more foreign ownerships are classified as foreign firms and rest of the firms are classified as the domestic firms.

3.1 The 'Wage' Impact

The average wage rate of foreign and domestic enterprises in 11 broad sectors of Indian manufacturing is provided in Table-2. In majority of industries foreign firms have paid higher wage rate than domestic enterprises. In 9 industries where foreign firms have superior wage performance, the ratio of average wage rate of foreign firms to that of domestic firms varied from a highest of 213 percent in the textile, leather & footwear segment of Indian manufacturing to a minimum of 119 percent in the case of transport equipment. There are only two industries namely non-electrical machinery and miscellaneous manufacturing where domestic firms had higher wage rate than foreign firms. The average of all industries showed that foreign firms paid 28 percent higher wage rate than domestic enterprises. This finding is quite supportive of the study of Aitken et al. (1996) which found higher levels of foreign ownership are associated with higher wages in Mexico, Venezuela and the United States and that the lack of spillovers between foreign firms and domestic firms explains the wage gap. The relative higher wage rate in the case of foreign firms in Indian economy may have been resulted from the fact that foreign firms are employing more skilled workers for their skill- biased technologies and are paying relatively more to attract and retain such workers. In this sense the skill gap between foreign and domestic firms can explain their wage rate differential.

Table-2 Wage Rate of Foreign and domestic Firms in Indian Manufacturing, 2001-2002

Industry	Average Wage Rate ($ 000)		
	Foreign Firms (FF)	Domestic Firms (DF)	FF as % of DF
Food, beverages & tobacco products	2.22 (11)	1.18 (34)	188
Textile, leather & footwear	3.74 (6)	1.75 (43)	213
Rubber & plastic products	7.66 (3)	5.01 (24)	153
Cement & glass	5.20 (2)	3.42 (22)	152
Chemicals excluding pharmaceuticals	6.60 (14)	4.87 (42)	135
Electrical machinery	5.72 (7)	3.79 (25)	151
Non-electrical machinery	4.04 (12)	5.43 (19)	74
Transport equipment	4.83 (10)	4.05 (26)	119
Pharmaceuticals	6.37 (8)	3.74 (26)	170
Electronics	6.34 (6)	4.83 (22)	131
Misc. Manufacturing	4.08 (3)	6.19 (25)	66
Average of All Industries	5.16 (82)	4.02 (308)	128

Note: Number of firms is in parentheses; wage rate is calculated as the weighted average of firms wage rate using employment as the weight
Source: Author's estimation based on PROWESS Database (2003).

This simple comparison of foreign and domestic firms on the basis of average wage rate may be indicative of differences in their wage behaviour but is by no means definite. We have not yet controlled many extraneous factors such as productivity, firm size or other factors that might be affecting systematically the wage behaviour of both the groups of firms. Incorporating the impact of these extraneous factors is important as vindicated by Globerman et. al. (1994) who found that the wage gap between foreign and domestic firms in Canada vanishes once controls for size and capital-intensity are introduced. In what follows we have estimated a simple wage determination model for Indian manufacturing of the following form:

$$WAGE_i = \beta_0 + \beta_1 LPROD_i + \beta_2 AGE_i + \beta_3 SIZE_i + \beta_4 KLINT_i$$
$$+ \beta_5 EXPOINT_i + \beta_6 FSHARE_i + \sum_j \beta_j SECDUM_j + u_i \qquad (A)$$

Where:

$WAGE_i$: Wages ($ million) per worker paid by *i*th firm.

$LPROD_i$: The net value-added generated ($ million) per worker in *i*th firm.

AGE_i: The age of *i*th firm in number of years.

$SIZE_i$: Total sales ($ million) of *i*th firm.

$KLINT_i$: The ratio of net fixed asset to worker.

$EXPOINT_i$: Exports of *i*th firm as a percentage of sales.

$FSHARE_i$: The share of foreign ownership (%).

$\Sigma_j SECDUM_j$:The set of sector-specific dummies.

u_i: The random disturbance term.

The model A has been estimated based on the data for 11 broad industries with a sample of 326 Indian manufacturing enterprises collected from the Prowess Data Base (2003) of the Centre for Monitoring Indian Economy (CMIE). The results obtained from the OLS regression with Huber-White robust standard errors corrected for the problem of heteroscedasticity has been summarized in Table-3. Along with the traditional OLS coefficients, the study has provided a vector of fully standardized coefficients[1] know as β coefficients along with their ranking. The β coefficients are scale-free and hence useful in comparing the relative strength of different independent variables explaining the wage behavior of Indian manufacturing firms.

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[1] To obtain these coefficients one need to compute the standardized variables and then re-estimate the model. Alternatively the standardized coefficient β_{1s} for a particular variable X_1 can be obtained as $\beta_{1s} = \beta_{1u} * (\sigma 1 / \sigma_y)$ where β_{1u} is the un-standardized coefficient associated with X_1 , σ_1 and σ_y is the standard deviation of X_1 and Y (the dependent variable) respectively.

Table-3 Determinants of Wage Rate in Indian Manufacturing

Dependent Variable: Wage Rate (in $ million)			
Independent Variable	Un-standardized Coefficients (t value)	Fully- standardized Coefficients	
		Value	Rank
LPROD	0.09308312*** (4.42)	0.3487	2
AGE	0.00003625*** (5.09)	0.2530	3
SIZE	-0.00000126*** (2.79)	-0.2344	4
KLINT	0.01987816*** (2.97)	0.4807	1
EXPOINT	-0.00000527 (1.18)	-0.0394	13
FSHARE	0.00002446*** (4.18)	0.1881	5
D_Food, beverages & tobacco products	0.00021420 (0.26)	0.0179	16
D_Textile, leather & footwear	-0.00158850*** (3.54)	-0.1634	6
D_Rubber & plastic products	-0.00109809** (2.55)	-0.1222	8
D_Cement & glass	-0.00096477 (1.39)	-0.0853	9
D_Chemicals excluding pharmaceuticals	-0.00164244*** (3.17)	-0.1339	7
D_Electrical machinery	-0.00017813 (0.30)	-0.0208	15
D_Non-electrical machinery	-0.00046577 (1.03)	-0.0412	12
D_Transport equipment	0.00054582 (0.69)	0.0491	10
D_Pharmaceuticals	-0.00028951 (0.62)	-0.0274	14
D_Electronics	-0.00047938 (0.94)	-0.0480	11
Constant	0.00159547***		
	(3.63)		
F(16, 309)	17.03		
Prob > F	0.0000		
Observations	326		
R-squared	0.5541		

Note: Robust t-statistics in parentheses; Rank is based on absolute value of standardized coefficients; Base category in the case of sectoral dummies is the Misc. Manufacturing; * Significant at 10%; ** significant at 5%; *** significant at 1%

The estimated model has got a highly significant F-statistic suggesting that all the determinants taken together have contributed significantly towards the inter-firm wage

differentials of Indian manufacturing firms. The R-squared value indicate that they taken together explained about 55 percent of variation in the wage rate which is quite reasonable considering the wide firm-specific heterogeneity existing in a cross-sectional analysis like ours.

The important point that emerges in our analysis is that the foreign share (FSHARE) has got a strong positive impact, which is statistically different from zero. This suggests that foreign firms in general pays higher wage rate even after the influences of other firm-specific factors and sectoral variations are controlled for. The vector of standardized coefficients shows that it is the fifth dominant factor of firm-level wage rate variation. Does the argument that wage gap between foreign and domestic firms is reflective of their skill gap still remain valid? As the impact of variable LPROD measuring the quality of human capital in labour such as experience, education and training has been controlled along with the capital-intensity (KLINT) of the firms it appears that the wage gap in Indian manufacturing may have other reasons than the skill factor alone.

The impact of LPROD is positive and statistically significant implying that higher the labour productivity higher is the wage rate, ceteris paribus. According to the β coefficients it is the second most dominant factor affecting wage rate behaviour. This finding is clearly supportive of the neoclassical model on demand for labour where the profit maximizing individual firm's wage rate is related to the marginal productivity of labour. KLINT capturing the capital-intensity of firms comes out with a positive impact and is statistically highly significant. The variable contributes maximum towards explaining the wage behaviour. It would appear that firms in Indian manufacturing using capital-intensive technologies pay relatively more to their workers owing to the nature of factor-substitutions. The capital-intensive technologies tend to substitute routinized work done by less skilled workers like handling, storage, transport, administrative etc. while retaining skilled and specialized workers.

In this case losing the skilled workers is very costly for the firms and they pay higher wages as a trade-off to costly labour turnovers.

The age of the firm has a positive sign and is statistically significant. It appears that the earnings of the workers in older established firms are relatively higher than in younger firms. However, the size of the firm has got a significantly negative impact on the wage rate given to the workers. This is contrary to the general expectation that size, being a proxy for various unobserved factors like large resource base and worker participation in monopoly profits, should have a positive impact. The negative association between wage rate and firm size thus suggest that large firms in Indian manufacturing may not be sharing their monopoly profits with their workers while smaller sized firms, which have low probability of survival, have to pay a wage premium to their workers to compensate them for the unfavourable job characteristics including a higher probability of job loss and less job satisfaction they face in working with smaller sized firms. The variable EXPOINT measuring export orientation has come out with a non-significant coefficient implying that exporting does not have any systematic effect on the wage behaviour of the sample firms.

Finally the empirical analysis also brings out that the wage behaviour of firms differs across certain sectors. In particular the wage rate offered by firms belonging to three industry groupings such as textile, leather & footwear, rubber & plastic products, and chemicals excluding pharmaceuticals, on an average, tends to pay less to workers than the miscellaneous manufacturing.

3.2 The 'Employment' Impact

To analyze the employment impact of FDI the paper has estimated employment elasticity of value added in foreign and domestic enterprises across 11 industries in Indian manufacturing. The patterns of estimated employment elasticity have been summarized in Table-4. In 2001-2002 the foreign enterprises had reportedly 5 percent higher employment elasticity than domestic enterprises in the total manufacturing. In the case of individual industries foreign firms have shown superior employment elasticity in 5 industries whereas domestic firms have higher employment elasticity in 4 industries. Thus this findings suggests that when output grow the employment growth is much faster in foreign enterprises than in their domestic counter parts in the overall manufacturing as well as in 5 individual industries. However, as the number of foreign firms is limited at individual industry level the findings from individual industries must be taken with precautions. As argued previously it is important to control the impact of extraneous factors in an analysis otherwise inferences drawn from uni-variate analysis like comparing average employment elasticity between foreign and domestic firms can be misleading. Hence, a simple regression of log of employment on firm age (AGE), firm size (SIZE), capital intensity (KLINT), export intensity (EXPOINT), foreign share (FSHARE) and a host of sector-specific dummies ($\Sigma_j SECDUM_j$) has been estimated and findings from OLS method has been presented in Table-5.

Table-4 Employment elasticity of output of foreign and domestic firms in Indian manufacturing, 2001-2002

Industry	Employment Elasticity		
	Foreign Firms (FF)	*Domestic Firms (DF)*	*FF as % of DF*
Food, beverages & tobacco products	-0.072	0.820	-8.83
Textile, leather & footwear	0.607	0.166	365.52
Rubber & plastic products	0.093	0.876	10.66
Cement & glass	#	0.491	
Chemicals excluding pharmaceuticals	0.865	0.520	166.41
Electrical machinery	0.853	0.647	131.91
Non-electrical machinery	0.392	0.879	44.55
Transport equipment	0.684	0.511	133.76
Pharmaceuticals	0.616	0.542	113.59
Electronics	0.693	0.745	93.02
Misc. Manufacturing	#	0.604	
All Industries	0.637	0.610	104.51

Note: Elasticity is obtained from regressing log of employment on log of net value-added (NVA); #-elasticity is not estimated due to few numbers of foreign firms.
Source: Author's estimation based on PROWESS Database (2003).

The employment model explains the variation in the (log) number of employment of Indian manufacturing enterprises quite well, nearly around 29 percent, and overall the model is highly significant by the F-test. FSHARE after adjusting for other firm-specific factors and sectoral dummies comes up with a negative sign but could not reach any accepted levels of significance. This would suggest that employment performance of foreign and domestic firms does not differ statistically. This finding can be explained with reference to the ongoing restructuring process in the Indian manufacturing on account of shift of policy regime from inward-looking to outward-looking during 1990s and the modification of the behaviour of domestic firms in the face of competition from foreign firms. The continuing process of economic reforms including removal of import restrictions and liberal FDI policy in the 1990s had dramatically increased the competitive pressure on the domestic firms hitherto shielded from global competition. The instinct of business survival led the domestic firms to improve their productivity, shed non-core activities, brought in management changes and move towards capital intensive and knowledge-based technology usually employed by their foreign

competitors. Thus the nature of technology in the domestic firms is converging towards that in foreign firms in any particular industry and this may partially explain the fact that employment generation does not differ with respective to the different levels of foreign ownership.

Table-5 Results from employment regression

Dependent Variable: Log of employees			
Independent Variable	Un-standardized Coefficients (t value)	Fully- standardized Coefficients	
		Value	Rank
AGE	0.01816568*** (6.12)	0.307	2
SIZE	0.00079063*** (2.62)	0.356	1
KLINT	-4.34455756*** (4.16)	-0.255	3
EXPOINT	0.00301732 (0.96)	0.055	14
FSHARE	-0.00155570 (0.51)	-0.029	15
D_Food, beverages & tobacco products	-0.22476413 (0.69)	-0.056	12
D_Textile, leather & footwear	-0.21031394 (0.74)	-0.057	11
D_Rubber & plastic products	-0.49892070 (1.56)	-0.107	9
D_Cement & glass	-0.27717287 (1.06)	-0.055	13
D_Chemicals excluding pharmaceuticals	-0.62029427** (2.24)	-0.175	4
D_Electrical machinery	-0.55271808** (1.99)	-0.118	6
D_Non-electrical machinery	-0.53372669 (1.58)	-0.116	7
D_Transport equipment	-0.33725766 (1.15)	-0.077	10
D_Pharmaceuticals	-0.47293109 (1.60)	-0.115	8
D_Electronics	-0.65364233* (1.84)	-0.132	5
Constant	6.79306976*** (25.67)		
F(15, 310)	8.07		
Prob > F	0.0000		
Observations	326		
R-squared	0.2889		

Note: Robust t-statistics in parentheses; Base category in the case of sectoral dummies is the Misc. Manufacturing; * Significant at 10%; ** significant at 5%; *** significant at 1%

Among other determinants of employment performance, firm age and size, both come out significantly with a positive sign. This results along with the previous results from wage determination point to an interesting aspect in the labour impact of firm size. As the size of the firm is increasing the number of employment is increasing and also the total wage bill is increasing but lesser than the increase in employment causing a negative relationship between firm size and wage rate. Accordingly the increase in firm size may be useful from the point of view of more employment but not so much from the per worker's earning point of view. The capital intensity has got a significantly negative impact saying that employment performance of the firms is less in high capital-intensive firms. The role of export intensity on employment is however not significant.

4. Concluding Remarks

This paper has analyzed the role of FDI in two important labour market outcomes, in determining the wage rate and employment performance in Indian manufacturing. Foreign firms are predicted to behave differently from domestic enterprises because they by definition utilize relatively skill-biased and capital-intensive technologies. The empirical verification of the impact of FDI on wages and employment has been proceeded by (1) comparing the average wage rate and employment elasticity of output between foreign and domestic firms and (2) estimating appropriate wage and employment model.

The findings suggest that foreign firms do not have any adverse effects on the manufacturing employment in India as compared to their domestic counterparts while they significantly pay relatively higher to their workers. Therefore this study tends to imply that labour in fact had benefited from foreign investment in India. However given the small size of

the sample for only one year the findings must be treated as indicative in nature unless it is

replicated in large sample with more periods.

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