Is there any employment effect of Foreign Direct Investment in Indian manufacturing industries?

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Presentation outline

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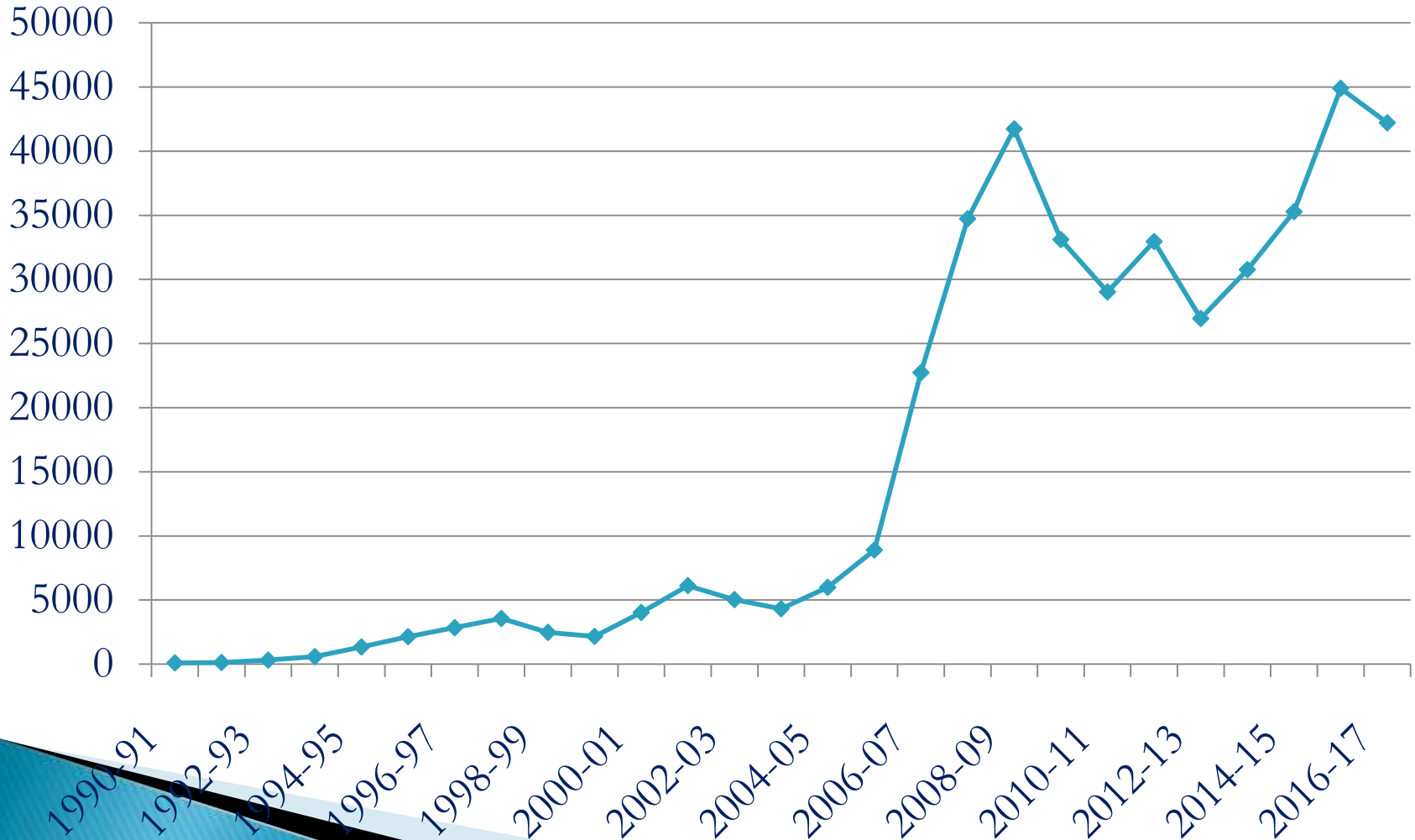- ❖ Results
- ❖ Concluding remarks

Background

- Since the early 1990s India has been undertaking numerous internal as well as external reforms to deregulate its economy and thereby to make it an investor friendly environment.

- Of late, the govt. under the *Make in India* plan has undertaken several policy reforms to make ease of doing business and to accelerate the pace of FDI in India.

- The govt. has devised a liberal FDI policy, under which FDI up to 100 percent is permitted, under automatic route, in most sectors or activities.

Background

❖ Why do we need FDI ?
  1) To correct the problem of balance of payments
  2) To boost investment, output and exports
  3) To bring about technology spillovers
  4) **To generate employment**

❖ I am however interested in the last one:
  ▪ **Does FDI generate employment in India?**
  ▪ **Is there any employment effect of FDI in India?**

FDI and Employment in India

Net FDI in India in million US$

FDI and Employment in India

Distribution of FDI inflows in different sectors of India during April 2000 to June 2017	
Name of sector	Share of FDI inflows (%)
Manufacturing sector	51
Non-manufacturing sector	18
Tertiary sector	31
All sector	100
Source: Department of Industrial Policy and promotion	

FDI and Employment in India

Distribution of employment across sectors in million				
(Percentage)				
Sectors	1993-94	1999-00	2004-05	2009-10	2011-12
Agriculture	241.5 *(64.59)*	246.6 *(61.71)*	268.6 *(58.49)*	244.9 *(53.22)*	231.9 *(48.89)*
Manufacturing	**38.9 *(10.40)***	**42.8 *(10.71)***	53.9 *(11.74)*	50.7 *(11.02)*	**59.8 *(12.61)***
Non-manufacturing	15.8 *(4.23)*	20.4 *(5.11)*	29.4 *(6.40)*	48.3 *(10.50)*	55.3 *(11.66)*
Services	77.7 *(20.78)*	89.8 *(22.47)*	107.3 *(23.37)*	116.3 *(25.27)*	127.3 *(26.84)*
All sectors	373.9 *(100)*	399.6 *(100)*	459.2 *(100)*	460.2 *(100)*	474.3 *(100)*

Source: Computed using data from Mehrotra et al. (2014, Table 2, p.50)

Objective

- Prima facie, it can be said that the substantial amount FDI in manufacturing sector seems to have contributed very little to the overall employment generation in India.

- In this paper, I therefore intend to examine the effect of FDI inflows on employment in India's manufacturing industries.

Related literature

❖ **Employment effect of FDI**

- Employment generation in foreign firms itself
- Employment generation through spillover effect
- Employment generation through vertical linkages

❖ Employment effect of FDI is not spontaneous, it is however conditional upon some medicating factors such as:

- ❖ Characteristics of foreign firms or FDI;
- ❖ Characteristics of host country;
- ❖ Nature of workforces in host country and so on.

Related literature

❖ **Empirical literature**

- ▪ In **developed countries**, studies have found somewhat mixed effect of FDI on employment. For example:

- ▪ Jude & Silaghi (2015) found negative short-run and positive long-run effect of FDI on employment.

- ▪ Onaran (2008) found insignificant effect of FDI on employment.

- ▪ Hijzen et al (2013) found negative and insignificant employment effect of FDI.

- ▪ Dinga & Mnich (2010); Bandick & Karpaty (2011); Almedia (2007) found there is employment generation due to FDI.

Related literature

❖ **Empirical literature**

- In **developing countries**, most of the studies confirm positive effect of FDI on employment. For example:

- In a study of 19 Sub-Saharan African countries, Coniglio et al (2015) underscore employment effect of FDI.

- Peluffo (2015) in a study of Uruguay found FDI has positive and significant effect on employment creation.

- Karlsson et al (2009) unravel a positive effect of FDI on employment in Chinese manufacturing sector.

- In the study of Mexico, Waldkirch and Nunnenkamp (2009) revealed that FDI is found to have increased employment in both skilled and unskilled workforce.

Empirical framework and data

❖ **Empirical Model**

$$LnN_{i,t} = \alpha + \phi_1 LnY_{i,t} + \phi_2 LnW_{i,t} + \phi_3 FDI_{i,t} + \lambda_t + v_i + e_{i,t}$$

$$LnN_{i,t} = \alpha + \phi_0 LnN_{i,t-1} + \phi_{11} LnY_{i,t} + \phi_{12} LnY_{i,t-1} + \phi_{21} LnW_{i,t}$$
$$+ \phi_{22} LnW_{i,t-1} + \phi_{31} FDI_{i,t} + \phi_{32} FDI_{i,t-1} + \lambda_i + v_t + e_{i,t}$$

Empirical framework and data

❖ **Estimation strategy**

- I have employed the Blundell and Bond (1998) System-GMM estimator to estimate the dynamic labour demand function.
- Blundell & Bond method is the best method to take care of the following problems in estimating the dynamic model:
- Inclusion of the lagged dependent variable;
- Joint-endogeneity and endogeneity-bias;
- Autocorrelation and heteroscedasticity

Empirical framework and data

❖ **Data**

- Two sources of data: ASI database and Prowess database.
- Data on labour, output, and wage for five-digit industries are taken from ASI while data on FDI is taken from Prowess.
- Study period: 6 years, i.e., 2008-09 to 2013-14
- Labour: total person engaged
    - Skilled-labour: supervisory and managerial staffs
    - Unskilled-labour: workers
- Output: Gross value added
- Wage: Average wage (wage and salaries/total employment)
- FDI: Output share of foreign firms in industry
- Wage and output are normalised by CPI-IW(2004-05 prices) and WPI (2004-05 prices) respectively.

Results: Employment effect of FDI

❖ I have estimated three sets of regression to examine the effect of FDI on employment.

▪ First set analyses the effect of FDI on overall employment in Indian manufacturing industries

▪ Second set analyses how the nature of workforces mediates the employment effect of FDI.

▪ Third set examines how the technology-level of industries affects the effect of FDI on employment in manufacturing sector

Results: Effect of FDI on overall employment (1)

Dependent Variable: Labour	Fixed Effect (1)	System-GMM (2)	System-GMM (3)
Labour (t-1)			0.417** (0.169)
Wage	0.001 (0.074)	-0.899*** (0.224)	0.370 (0.365)
Wage(t-1)			-0.488** (0.182)
Output	0.221*** (0.023)	0.781*** (0.082)	0.329** (0.143)
Output (t-1)			-0.016 (0.018)
FDI	-0.055 (0.088)	-0.341 (0.362)	-0.758 (0.591)
FDI (t-1)			0.448 (0.423)
Constant	3.930*** (0.814)	2.281 (1.866)	-0.229 (1.710)
Observations	2110	2110	1699
Industries	382	382	367
Instruments		30	37
Hansen-p value		0.159	0.123
AR2 p-value		0.130	0.886
R-squared	0.294		
Long-run effect			
Adjustment term			0.583
Wage			-0.202 (0.237)
Output			0.538*** (0.140)
FDI			-0.532 (0.325)

Results: Employment effect of FDI (nature of workforce) (2)

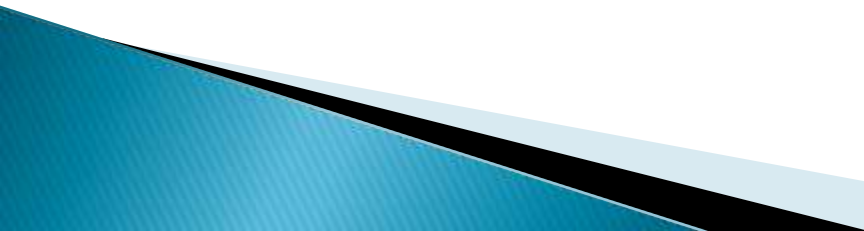| Dependent variable	Skilled labour		Unskilled labour	
Explanatory variables	**Fixed Effect (1)**	**System-GMM (2)**	**Fixed Effect (3)**	**System-GMM (4)**
Dependent variable (t-1)		0.368***(0.090)		0.660***(0.147)
Wage	-0.049 (0.076)	0.0578 (0.232)	0.106 (0.082)	-0.060 (0.327)
Wage(t-1)		-0.103 (0.081)		-0.218 (0.255)
Output	0.235***(0.026)	0.351***(0.108)	0.212***(0.023)	0.231** (0.118)
Output (t-1)		-0.010(0.0234)		0.093 (0.096)
FDI	-0.074 (0.110)	-0.196 (0.413)	-0.062 (0.089)	-1.915 (1.535)
FDI (t-1)		-0.097 (0.270)		1.532 (1.232)
Constant	1.950* (1.003)	0 (0.00)	2.675***(0.908)	-0.956 (2.232)
Observations	2107	1698	2110	1699
Industries	381	367	382	367
Instruments		61		41
Hansen-p value		0.145		0.189
AR2 p-value		0.153		0.403
R-squared	0.252		0.273	
Long-run effect				
Adjustment term		0.632		0.340
Wage		-0.072 (0.271)		-0.818** (0.341)
Output		0.540***(0.104)		0.813***(0.161)
FDI		-0.464 (0.302)		-1.127**(0.441)

Results: Employment effect of FDI in High-Tech Industries (3)

Dependent Variable: Labour	Fixed Effect (1)	System-GMM (2)	System-GMM (3)
Labour (t-1)			0.217** (0.100)
Wage	-0.071 (0.106)	-0.643*** (0.199)	-0.368** (0.176)
Wage(t-1)			-0.146 (0.145)
Output	0.316*** (0.057)	0.843*** (0.092)	0.724*** (0.090)
Output (t-1)			-0.044 (0.042)
FDI	-0.159 (0.159)	0.053 (0.794)	-0.642 (0.675)
FDI (t-1)			0.329 (0.526)
Constant	2.659** (1.260)	-1.999 (2.625)	-2.051 (1.730)
Observations	787	787	639
Industries	139	139	136
Instruments		30	49
Hansen-p value		0.166	0.347
AR2 p-value		0.254	0.724
R-squared	0.364		
Long-run effect			
Adjustment term			0.783
Wage			-0.657*** (0.122)
Output			0.869*** (0.083)
FDI			-0.399 (0.300)

Results: Employment effect of FDI in Low-Tech Industries (3)

Dependent Variable: Labour	Fixed Effect (1)	System-GMM (2)	System-GMM (3)
Labour (t-1)			0.559*** (0.104)
Wage	0.016 (0.103)	-1.184*** (0.368)	-0.002 (0.422)
Wage(t-1)			-0.323 (0.277)
Output	0.191*** (0.022)	0.787*** (0.108)	0.372** (0.129)
Output (t-1)			-0.013 (0.021)
FDI	0.007 (0.084)	0.134 (0.341)	0.193 (1.013)
FDI (t-1)			-0.246 (0.959)
Constant	4.420*** (1.093)	5.286 (3.594)	-0.125 (2.467)
Observations	1323	1323	1060
Industries	243	243	231
Instruments		30	49
Hansen-p value		0.317	0.219
AR2 p-value		0.209	0.855
R-squared	0.273		
Long-run effect			
Adjustment term			0.441
Wage			-0.737 (0.782)
Output			0.813*** (0.122)
FDI			-0.120 (0.233)

Concluding remarks

- FDI has negative and insignificant effect on employment in India's manufacturing industries.
- FDI has negative and significant effect on demand for unskilled labour.
- The present analysis has dealt with the effect of FDI on employment in the same industry (horizontal employment effect of FDI)
- Future research: Vertical Employment effect of FDI—employment effects through FDI linkages with domestic suppliers and users in India.

Thank you all