



Trade liberalisation and employment effects in Indian manufacturing

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In this study, a team of local researchers investigates the impact of trade on employment in India, particularly in the manufacturing sector and amongst various groups of workers, as well as for two time periods: 2004-7 and 2008-11 (i.e. before and after the global economic crisis). Their analysis shows that increased exports also increase the demand for workers (especially for skilled and female workers) whereas increased imports lead to job losses. Furthermore, despite India's relative cost advantage being in labour-intensive production sectors (e.g. textiles), the increased external trade since the country's economic reforms has mainly been in skill-intensive production sectors (e.g. transport).

Based on their results, the team outlines several recommendations to improve international competitiveness, increase job opportunities and protect against further global economic problems.

Manufacturing, key for growth in India

India has seen major changes to its industrialization and trade development strategies following the country's economic crisis in the early 1990s. Trade liberalisation is ongoing, aiming to create a more market-oriented economy with increased private and foreign investment.

With productive resources being reallocated, India's economic reforms had a significant effect on the domestic employment structure. Despite these reforms, unemployment problems continue as secure employment is hard to find. When compared to the rest of the world, the labour force participation rate in India is low (56% amongst people aged 15 and over) and for women it is among the lowest in the world (31%).

Furthermore, more than 92% of the labour force is employed in the informal sector, where wages are dismal and there is no social security. Manufacturing in the informal sector contributes little to the industry's value.

Agriculture is still the principle employer (49% of total employment), however, it only contributes 14% to the GDP. On the other hand, manufacturing contributes 16% to the GDP while only providing 13% of total employment in India.

Formal employment in manufacturing is largely concentrated in the traditional industries of textiles and apparel, and food and beverages.

After 2000, a number of government policies aimed to generate jobs by focusing on manufacturing. In 2011, the National



Manufacturing Policy put in place measures that aimed to create 100 million new jobs by 2022. In 2014, the "Make in India" initiative was launched to improve India's global competitiveness and to challenge China's domination of world manufacturing.

India's increased economic integration since trade liberalisation began is largely attributed to the increased volume of international trade in goods and services. From 1990 to 2012, India's exports increased from 0.5% of world exports to 1.6% (World Development Indicators, 2014).

During the same period, there was a marked decline of primary exports (agricultural and mining products) from 24% down to 15%, whereas manufacturing exports have fluctuated between 61% and 77%.

Within manufacturing, there has been a gradual shift from traditional and less sophisticated products (such as textiles) to technology-intensive products such as transport, electronics, and pharmaceuticals.

A team of local researchers therefore decided to examine the impact of trade on:

- employment in the organised (formal) manufacturing sector
- the demand for skilled vs. unskilled labour, and male vs. female employment.

The researchers also examine

- whether trade has led to increased labour use per output in India, and
- how trade promotes productivity that has employment effects beyond the manufacturing industry.

Data and methodology

This study uses disaggregated data for production and employment in the manufacturing sector from various issues of the Annual Survey of Industries (ASI) to cover the 2004 to 2011 period. Trade data is collected from the Ministry of Commerce, the Government of India's Export-Import databank, and the UN Comtrade database.

To examine the indirect effect of trade on employment elasticity, the researchers estimate a labour demand model for two time periods: 2004-07 and 2008-11. To analyse the effect of different factors on employment, they use the Growth Accounting Approach. To capture the effect of trade openness on labour demand, along with other factors such as price and output, the research team uses a standard derived labour demand equation augmented by a trade integration variable. To estimate labour demand, the team uses panel data analysis where impact of trade is captured by the export-output ratio and the import-penetration ratio. Each labour demand variable is estimated using four alternative models.

Key findings

The results show that **industrial output has a significant and positive effect on labor demand across industry groups, as well as for various employee groups**. Increased exports are found to have a positive and significant impact on the demand for workers, while increased imports are found to have a significant negative effect, causing job losses.

Employment intensity has declined during the research period. As expected theoretically, the impact of imports on demand for labour is negative. Interestingly, however, the demand for female employees increases due to exports in the post-crisis, while that of male employees declines.

Trade liberalisation has significant positive effects on the demand for un-skilled or semi-skilled workers, as well as for male employees, during the first analysis period (2004-7). However, during the second period (2008-11), the effect of trade liberalisation on the demand for workers becomes negative and statistically insignificant. The latter result is likely to be due to the global financial crisis-led contraction in demand for output.

Furthermore, the **demand for skilled workers has increased compared to the demand for unskilled workers**. Increased external trade since the reforms has mainly been in skill-intensive and capital-

augmenting production processes, even though India's relative cost advantage was in labour-intensive production techniques.

Petroleum and computer hardware industries show a reduction in the demand for workers (compared to the benchmark industries) throughout the study, whereas the beverage, chemical, electronic and food processes industries only show a reduced demand for workers in the second period.

There is increased demand for supervisory and managerial staff due to trade liberalisation in the first period, yet less demand during the second period, showing that export-oriented firms did not require as many workers in this category after the global financial crisis.

Table 1: Decomposition of employment growth for male vs female workers

Sources of Growth	2004-05 to 2007-08		2008-09 to 2011-12	
	Female	Male	Female	Male
Total Employment	+	+	+'	+'^
Domestic Demand	-	-	-	+
Productivity Growth	-	-	+	+'^
Export Growth	+	+	+'*	-
Import Penetration	-	-	-	-
Net Employment from Trade	+	+	+'*	-

Table 2: Decomposition of employment growth for skilled vs un-skilled workers

Sources of Growth	2004-05 to 2007-08		2008-09 to 2011-12	
	Skilled	Un-skilled	Skilled	Un-skilled
Total Employment	+	+	+'*	+'^
Domestic Demand	-	-	+	+'^
Productivity Growth	-	-	+	+'^
Export Growth	+	+	+'*	-
Import Penetration	-	-	-	-
Net Employment from Trade	+	+	-	-

(+) means increase, (-) means decrease and (^) means more than the other category

(* means more than in last period and (' means less than in last period

Conclusions and implications for policy

Overall, the team finds a decline in labor demand after the global crisis; however, it seems that the demand for skilled workers has increased compared to unskilled workers, as well as that of female workers (due to exports) compared to their male counterparts. On the other hand, the results indicate that productivity enhancement may not increase labour-intensity in the growing export-sectors.

Their findings lead the research team to make the following suggestions for policy:

- Provide incentives for the labour-intensive sectors, including rural household-based industries that are likely to take on low-skilled and un-skilled workers and employ a greater number of women. Incentives may include tax-breaks, subsidies, training and access to credit.
- Increase competitiveness (particularly with respect to countries such as China) by raising skill levels through training at formal and vocational education institutions – i.e. the “Skill India” initiative is a policy in the right direction.
- Increase labour absorption by providing facilities in the vicinity of large industries thereby developing the area and creating further employment opportunities.
- Attract foreign direct investment for basic infrastructure and industrial parks. This will provide space for labour-intensive industries such a textiles and food processing that employ large numbers of female and unskilled workers.
- Help develop large-scale businesses that can generate employment.
- Sustain domestic demand to protect against global financial crises. Reducing interest rates, and controlling fiscal deficit can help to protect India’s economy in this way.



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This policy brief is based on the PEP project [MPIA-12598](#) supported under the 2nd round of the PAGE program. To find out more about the research methods and findings, read the full [PEP working paper \(forthcoming\)](#)