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Inter-linkages between Exports and Employment in India



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Despite the fast economic growth since the 1990s, India's employment growth has been sluggish. During the period 1999-2000 to 2012-13, employment grew at the rate of just 0.8% per annum, much slower than the growth rate of real GDP. Given that India has a comparative advantage in labor-intensive products, export-led growth can play an instrumental role in generating large scale employment. In this context, it is important to provide

reliable estimates of the number of jobs supported by Indian exports.

Using input-output (IO) analysis, this study provides estimates of employment supported by India's merchandise and services exports during the period 1999-2000 to 2012-13. The major advantage of the IO framework is that, in addition to the direct effect of exports on employment within a given industry, employment generated

in other industries as a result of indirect backward linkage effects can be taken into consideration. The study makes use of the official Input-Output Tables (IOTs) for the benchmark years 1998-99, 2003-04, 2007-08 as well as the recently published Supply Use Tables (SUTs).

The IOTs and SUTs, compiled by the CSO, do not distinguish imported inputs from domestic

**Table 1: Total Number of Indian Employment (million)
Supported by Merchandise plus Services Exports, and Total Employment in the Country**

| | Export Supported Employment | | | Total Employment in India |
|---------|-----------------------------|-------------------|---------------------|---------------------------|
| | Total employment | Direct employment | Indirect employment | |
| 1999-00 | 34.0 | 19.9 | 14.1 | 368.2 |
| 2000-01 | 37.9 | 23.0 | 14.9 | 369.1 |
| 2001-02 | 41.2 | 25.7 | 15.4 | 417.1 |
| 2002-03 | 43.5 | 26.8 | 16.7 | 396.1 |
| 2003-04 | 43.6 | 27.5 | 16.1 | 393.5 |
| 2004-05 | 52.1 | 32.6 | 19.6 | 408.3 |
| 2005-06 | 53.5 | 32.6 | 20.8 | 402.9 |
| 2006-07 | 53.5 | 33.0 | 20.5 | 405.2 |
| 2007-08 | 49.0 | 30.6 | 18.5 | 407.5 |
| 2008-09 | 54.1 | 31.1 | 23.0 | 403.8 |
| 2009-10 | 44.5 | 23.2 | 21.3 | 400.0 |
| 2010-11 | 49.3 | 23.6 | 25.7 | 410.2 |
| 2011-12 | 58.0 | 29.0 | 28.9 | 420.5 |
| 2012-13 | 62.6 | 31.4 | 31.2 | 430.7 |

inputs. If imported inputs are not subtracted from total input use, we would overestimate the number of domestic jobs generated through backward linkage effects. Therefore, we use an imputation procedure to separate imported inputs from domestic inputs. Further, making use of detailed production and trade data from various official sources we construct domestic use tables for each year spanning the period 1999-2000 through 2012-13. For constructing these tables, we have made use of information on the changing input-output relations and other structural features as reflected in available official IOTs and SUTs. Using annual domestic use tables and detailed sector-wise employment coefficients (ratio of employment to output), we provide consistent time-series estimates of direct and indirect jobs supported by India's exports for 112 sectors.

The total number of jobs supported by aggregate Indian exports (merchandise plus services) increased from about 34 million in 1999-00 to 62.6 million in 2012-13, with a growth rate of 3.4% per annum (see **Table 1** and

Figure 1: Total Number of Employment Supported by Indian Exports (million)

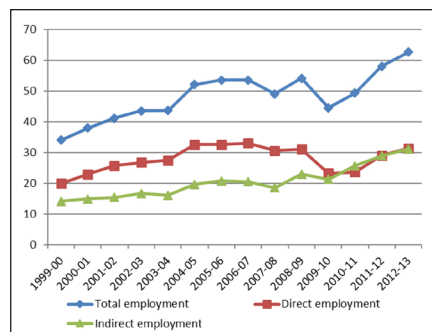


Figure 1). The total number of jobs tied to exports increased steadily at the rate of 7.6% per annum during the first half of the 2000s. Export-supported jobs declined briefly in 2009-10, in the aftermath of the global financial crisis. During the period 2006-07 to 2012-13, as export growth slowed down, growth rate of employment tied to exports fell to 2.6% per annum. Nevertheless, export related jobs grew significantly faster than total employment throughout the period. As a result, the share of export-supported jobs in total employment in the country increased from little over 9% in 1999-2000 to 14.5% in 2012-13 (**Figure 2**).

During the period 1999-2000 to 2009-10, the share of direct employment (that is, employment in a given sector attributed to its own exports) in total export related employment stood significantly higher than that of indirect employment (employment in a given sector due to its linkage with other exporting sectors). However, the contribution of indirect job creation increased significantly in recent years (**Figure 3**). The share of indirect

Figure 2: Number of Jobs Supported by Exports as a Share of Total Employment in the Country (%)

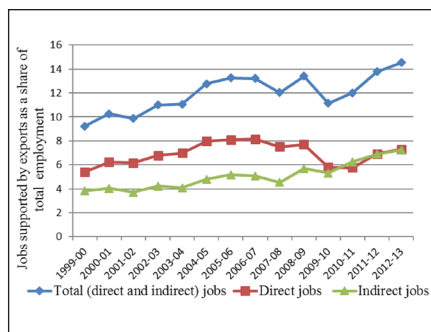
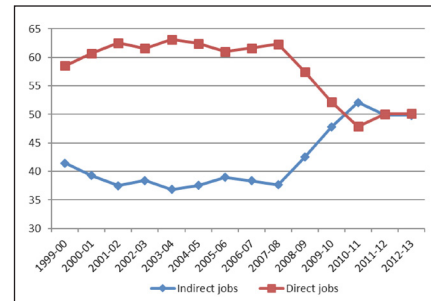


Figure 3: Share of Direct and Indirect Jobs in Total Number of Jobs Supported by Exports (%)



jobs in total export-supported jobs increased from about 38% in 2007-08 to 52% in 2010-11. During 2011-12 and 2012-13, the share of indirect employment stood at about 50%. During the period 1999-00 to 2005-06, direct and indirect jobs tied to exports grew at the rate 8.4% and 6.5% per annum, respectively. However, during 2006-07 to 2012-13, while job creation through indirect linkage channels registered a growth rate of above 8% per annum, the growth rate of direct job creation has been negative (-1.9%). Backward linkages, particularly from manufacturing to agriculture and services, have become an important source of export related job creation in the country.

While the total number of jobs supported by exports increased significantly, jobs supported per million dollar (or billion rupees) worth of exports declined over the years. US\$ 1 million worth of exports supported 638 jobs in 1999-00, which has declined to 138 in 2012-13. Our detailed review of the literature suggests that this decline is consistent with the trends observed in several other countries. The observed decline in the number

of jobs per million dollars of exports can arise as a result of improvement in labor productivity (which in turn may mean higher wages) as well as due to changes in the composition of exports in favor of more skill and capital intensive products. Despite the decline, the number of jobs supported per million dollar worth of exports from India is significantly higher than those reported for other countries in previous studies: for example, US\$ 1 million worth of exports from US supported only 6.6 jobs in 2009 and 5.2 jobs in 2014. Estimates for China suggest that US\$ 1 million worth of its exports supported 140 jobs in 2007 as compared to 191 jobs in India for the same year.

Turning to the estimates for the broad sectoral groups, total number of export-supported jobs for agriculture, mining & allied activities (henceforth, agriculture) increased from 16 million in 1999-2000 to 26.6 million in 2012-13 (**Figure 4**). Within the manufacturing sector, the total number of jobs tied to exports increased from 8.9 million in 1999-2000 to 14 million in 2004-05. The second half of the 2000s, however, witnessed a decline in the growth of

manufacturing jobs with 10.3 million jobs being created in 2009-10. This trend has reversed during the more recent years as manufactured exports supported 13.9 million jobs in 2010-11 and 24.1 million jobs in 2012-13. As far as services sector is concerned, total number of export-supported jobs increased steadily from 9.1 million in 1999-2000 to 20.9 million in 2008-09 and then declined sharply to 11.9 million in 2012-13.

We observe a major increase in aggregate export-supported jobs during the period 2010-11 to 2012-13. This was mainly brought about by the manufacturing sector. Between 2010-11 and 2012-13, aggregate number of export supported jobs increased by 13.3 million. It can be seen that manufacturing sector contributed to over 75% (10.2 million) of this increase, followed by agriculture (4.4 million) while services contributed negatively with a decline in number of export supported jobs by 1.3 million. The high contribution of manufacturing sector is consistent with the fact that its share in India's exports increased significantly since the late 2000s. The percentage of total manufacturing

employment that can be attributed to exports increased significantly from 19.6% in 1999-2000 to 24.5% in 2004-05 and 39.5% in 2012-13 (**Figure 5**).

The significant growth of export related manufacturing employment between 2010-11 and 2012-13 has been brought about by sectors such as 'readymade garments & miscellaneous textile products' (with an employment growth of 4.5 million), 'gems & jewelry' (2.4 million), 'cotton textiles' (0.7 million), 'communication and electronic equipment' (0.6 million), 'motor vehicles' (0.5 million), 'miscellaneous food products' (0.4 million), 'miscellaneous metal products' (0.4 million), 'leather footwear' (0.2 million) 'other non-metallic mineral products' (0.2 million), 'tobacco products' (0.2 million), and 'drugs and medicines' (0.2 million)

The composition of export-supported employment underwent significant changes during the period (**Figure 6**). In 1999-2000, agriculture accounted for the largest share of export-supported jobs (47.1%) followed by roughly equal shares for services (26.8%) and manufacturing (26.2%). By 2003-04, the share of manufacturing increased to about 30% while that of agriculture and services declined to 44.4% and 25.7% respectively. Between 2003-04 and 2007-08, however, the share of services increased steadily to nearly 43% at the cost of agriculture and manufacturing whose shares declined to 40% and

Figure 4: Total Employment (million) Supported by Indian Exports across Sectors

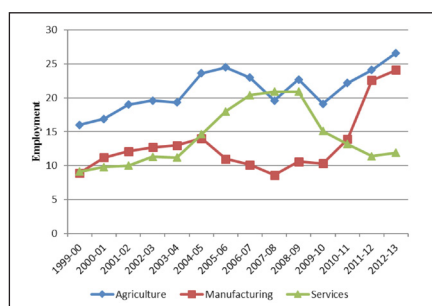


Figure 5: Export-Supported Employment as a Share of Total Sector Employment (%)

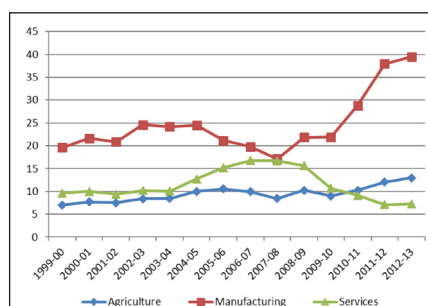
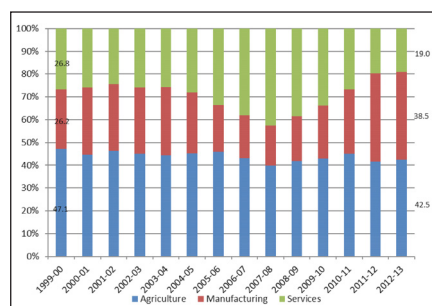


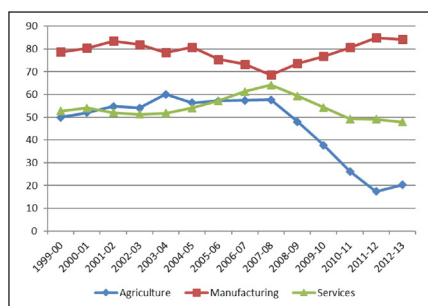
Figure 6: Distribution of Export-supported Employment Across Broad Sectors



17.5% respectively. The trend got reversed again since 2007-08 as the share of manufacturing steadily increased to 38.5% in 2012-13 while the share of services declined sharply to 19%. Despite the changes noted above, agriculture accounted for the largest share of employment throughout the period except for 2007-08. During the more recent years, the share of manufacturing increased significantly at the cost of services. These changes in the sectoral composition of employment are consistent with the observed changes in the composition of exports. Export data reported in IOTs and SUTs shows that, between 2003-04 and 2007-08, the share of manufacturing sector in India's exports declined significantly while the share of services increased. However, between 2007-08 and 2012-13, the trend got reversed as manufacturing exports gained prominence in relation to services.

Direct employment accounts for a very high share – ranging from 73% to 85% - of total export-supported jobs in the manufacturing

Figure 7: Direct Employment as a Share of Total Export-supported Employment in Each Sector (%)



sector. In contrast, a significant share of employment generated in agriculture and services are attributed to indirect effects, implying that manufacturing export plays an important role in generating employment in agriculture and services sectors through backward linkage effects. For the year 2012-13, direct employment accounted for only 20% of total export linked jobs generated within the agriculture sector while as much as 80% of export-related jobs in this sector is attributable to its linkages with other sectors, particularly manufacturing. Similarly, direct employment accounted for 48% of export-linked jobs within the services sector while the remaining 52% could be attributed to its linkages with manufacturing (**Figure 7**).

To sum up, our estimates suggest that exports have become an important driver of job growth in India. The study identifies a number of specific sectors where exports can contribute significant employment growth, directly as well as through backward linkages. At the broad sectoral

level, manufacturing exports hold the largest potential to generate employment within the sector (direct effect) as well as in agriculture and services through backward linkage effects. Policies specifically targeting export growth from the manufacturing sector can reap rich dividends in terms of creating large scale employment opportunities for various skill categories. Viewed in this light, the manufacturing focus in “Make in India” initiative of the government is a move in the right direction.

The contents of the publication are based on information available with Export-Import Bank of India and on primary and desk research through published information of various agencies. Due care has been taken to ensure that the information provided in the publication is correct. However, Export-Import Bank of India accepts no responsibility for the authenticity, accuracy or completeness of such information.

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