Export-Employment Conundrum in India's Manufacturing Under Globalization: In Search of a Strategic Approach

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1 Introduction

Ever since 1980s and especially after 1990s, there has been a change in the mindset of policymakers in the developing countries regarding the ways to bring about the much-needed growth and structural transformation of their economies. This was manifested in the swing in policy pendulum from the hitherto followed import substitution strategy to outward orientation with the state taking a back seat and the market playing the prime role. The process got momentum with the formation of World Trade Organization (WTO) and the drive towards globalization. With the opening up of the economies under globalization, the extent of market ceased to be a constraint to the division of labour (Commission on Growth and Development 2008). The outcomes have been profound with respect to growth and structural change in the countries concerned and even at the global level. The earlier episodes of higher output growth have been confined to relatively smaller economies like South Korea. In the era of globalization, even economies with continental size like China and India managed to sustain higher growth rates even for decades, which was unheard in their history and millions were lifted out of poverty. Thus, the developing countries were especially benefitted accompanied by an increase in their share in global merchandise and manufacturing value added increasing from 30 to 45% and 18 to 47%, respectively, during 1980–14, their share in global GDP increased by about 22% to reach 38% in 2014. This was almost entirely at the expense of industrialized countries whose share plunged from 78 to 57% (Nayyar 2016).

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However, along with these impressive records at the aggregate level and at the level of a few countries, there is also evidence to suggest that there has been the exclusion of regions, of countries within regions, of regions within countries and of people within countries (Nayyar 2016).[1] There has also been a rapid increase in economic inequality among people almost everywhere in the world; while the share of the poorest 50% of the population in national income contracted almost everywhere (Palma 2011), the share of the richest 1% or even 0.1%, has risen rapidly almost everywhere (Atkinson et al. 2011). Hence, today, the focus of policies is increasingly shifting from growth to inclusive growth and no wonder one of the Sustainable Development Goals of the United Nations explicitly aims at reducing inequalities.

For most humanity, Sen (1983) reasons, the only commodity a person has to sell is his/her labour power. Hence, the person's entitlements depend principally on his or her capability to find a job, the wage rate for that job and the prices of commodities that he or she wishes to buy. Viewed thus, any exploration on the growing inequalities under globalization will lead to the doorsteps of employment conditions and labour markets. Scholars of eminence have been rather unanimous about the adverse effect of market-driven globalization on labour and employment. As Freeman (2011) argued, structural adjustment induced growth has been characterized by 'crises of structural adjustment' as there has also been growing unemployment, a main source of inequality and poverty. Stiglitz (2013) has been more emphatic when he observed that the dearth of jobs and the asymmetries in globalization have created competition for jobs in which workers lost and the owners of capital gained. Further as Rodrik (1997) pointed out, international trade under globalization makes domestic workers more susceptible and therefore, lowers their bargaining power (as cited in Ahsan and Mitra 2014). All else equal, both of these factors will lower the bargaining power of workers, as well as their share of income relative to other factors of production. Empirical evidence tends to support the above proposition. ILO (2011) reported that since the early 1990s, the labour share of national income has declined in three quarters of the 69 countries in they studied, with the decline being particularly pronounced in the developing countries. ILO (2012) further observed that around 670 million workers even in Asia, otherwise known for impressive performance, live on less than US$2 a day and that 322 million below US$1.25 per day pointing towards the poor quality of the employment generated.

Having joined the global bandwagon, India's experience has been hardly different. Trade, investment-driven growth rates in GDP have been higher during the post-reform period of globalization. At the same time, studies have found that the growth in employment lagged behind the trade-induced output growth and there has been widening wage differential, instrumental in -growing inequality (Chaudhuri and Ravallion 2006; Pal and Ghosh 2007). The trends in wage rates indicated

[1]To illustrate, between 1980 and 2014, while the share of Asia in world GDP more than doubled (11.5–26.7%) that of Latin America marginally improved (6.6–7.8%) and in case of Africa, its share declined from 3.6% in 1980 to 2.1% in 2000 and only marginally recovered to reach 3.1% in 2014 (see Nayyar (2016) for details).

rural–urban and casual–regular dualism. In urban areas, the wage gap between the secondary and tertiary sectors has been widening (Sarkar and Mehta 2010). It has also been argued that the link between trade and employment is rather complex. Trade liberalization and expansion are often accompanied by broader reforms and other macroeconomic changes, which makes it difficult to disentangle the effect of trade on employment empirically (UNCTAD 2013). In this context, it important to note the findings of a recent study (Veeramani 2016) that reinforced the findings of an earlier study on export and employment by RIS (2006). Using input–output analysis, Veeramani (2016) observed that the total number of jobs supported by merchandise and services increased from about 34 million in 1999–00 to 62.6 million in 2012–13, recording a growth rate of 3.4% per annum which is higher than the total employment growth in the country. As a result, the share of export-supported jobs in total employment increased from little over 9% in 1999–00 to 14.5% in 2012–13. The study also highlighted the important role of manufacturing exports in employment generation as its share in the total export-supported employment increased from 19.6% in 1999–00 to 24.5% in 2004–05 and 39.5% in 2012–13. This salutary evidence on the employment outcomes of exports notwithstanding, there are indications to be sceptical about its contribution to equity because of the quality of employment being generated—an issue of much concern today. If export competitiveness is built on comparative advantage based on low wage cost and informal/contract employment, welfare contributions of export are likely to be in suspect.

The observed outcomes, both in terms of the quantity and quality of employment and resultant deficit in inclusive development outcomes as manifested in increasing inequality cannot be delinked from the hitherto followed free trade policy. It has often been argued that the free trade policy under WTO was driven more by commercial interests than development concerns. To the extent that free trade has failed to deliver the desirable developmental outcomes and the sustainable development goals are being upheld, there arise the need for revising the process of globalization pursued so far. The core ingredient of such strategy is the reconfiguration of globalization from a large developing country perspective shall be towards 'globalizing on our own terms and at our own pace' to avert the plausible 'unmitigated disaster' arising out of unacceptable levels of inequality at different levels Stiglitz (2002). In this process, the role and relevance of the state cannot be overemphasized. Thus viewed, today, there is an increasing significance of the insights from the strategic trade policy (Brander and Spencer 1981, 1985), which called for state intervention to maximize national welfare. Such interventions, however, needs to be based on a precise understanding of the potential of different industries to contribute towards national welfare based on their ability to generate employment, both in terms of quantity and quality such that growth-led export contributes to shared prosperity. The firm-specific and interventions as articulated by the strategic trade policy could be more effectively implemented today by averting plausible rent-seeking by harnessing the potential offered by developments in Information and Communication Technologies (ICTs). From the perspective of long-term development, it is also important to locate the sectors of dynamic comparative advantage, which could be instrumental in higher export growth with high-quality employment. The present

study is an attempt at locating such industries and evolving strategic approach towards enhancing their export performance.

The reminder of the paper is organized as follows; Sect. 2 informs about the database and its limits. Section 3 presents an overview of the emerging trends in exports and employment, both in terms of its quantity and quality, under globalization. Section 4 locates the industries with revealed employment advantage with high-quality employment and those with the dynamic comparative advantage in terms of maximizing exports and employment followed by the last section where in the concluding observations are presented.

2 Data, Scope and Limitations

The study draws data from three important sources. Given the focus of present paper on organized manufacturing, the data on value added, output, fixed capital, profits and data on other important characteristics are obtained at the 3-digit level of National Industry Classification 2004–04 from EPWRF. The EPWRF has concorded different NIC classifications in NIC 2004 at 2- and 3-digit level from 1973–74 to 2013–14. The data for the latest year (2014–15) is obtained from the Annual Survey of Industries (ASI) published by CSO. Similarly, we have taken the data on disaggregate employment; male, female, contract workers and wages from published records of ASI. The data from 1990–91 to 2014–15 is provided in NIC-1987, NIC-1997&2004 and NIC-2008. Using the concordance tables provided by CSO, we have concorded the data in 2004–05 NIC. We have taken data on exports and imports from Commodity Trade (COMTRADE) provided by United Nations Conference on Trade and Development (UNCTAD) and extracted the data through World Integrated Trade Systems (WITS). The data is extracted under International Standard Industrial Classification Rev. 3 (ISIC Rev. 3) which is consistent with NIC-2004. In this version, the data is available from 1988 to 2017. The latest year for the ASI data is 2014–15. Therefore, the period of analysis of the study is from 1990–91 to 2014–15. The data comprises of 55 3-digit manufacturing industries. We have constructed industry-wise Wholesale Price Index (WPI) in 2004–05 constant prices using the data provided by the economic advisor, industry to deflate the nominal values. Similarly, we have used the Consumer Price Index for Industrial Workers (CPI-IW) to deflate the wages and salaries. Trade data is obtained from UN-COMTRADE, which represents exports and imports of both organized and unorganized sectors, whereas output data from ASI represents only the organized sector. Hence, export intensity as measured in this paper could be an overestimation of the actual export and import intensity of the manufacturing. The comparison of organized sector's value addition to that of total manufacturing GDP suggests that organized sector contributes to nearly 70% of the total value added in 2014 and given higher trade orientation of organized sector as compared to the unorganized sector, it is reasonable to assume that export and import intensity follow the similar trend. The data on manufacturing value added is obtained from national account statistics as opposed to the annual survey of industries, which

provides value addition in organized industries. In order to provide a comprehensive picture of the manufacturing sector accounting for both organized and unorganized sectors, we have used manufacturing GDP published by the CSO.

3 Export and Employment: Emerging Trends

The economic reforms in India were followed by the delicensing and import liberalization initiated in the 1980s. However, as Chaudhuri (2002) puts it, deepening of the reforms since the 1990s indicated a shift from the state-led domestic-oriented, capital goods focused, 'heavy' industrialisation strategy, towards a market-friendly regime, as advocated by development agencies, such as the World Bank. The rationale behind such approach was the anticipation that trade and investment liberalization increases competitiveness and efficiency particularly by reaping traditional comparative advantage, which could lead to the growth of labour-intensive industries and therefore addresses the problems of employment generation and poverty reduction. It is in this context, the literature on manufacturing sector performance, particularly after the economic reforms, focussed on three important aspects, viz. value added/output, export and employment. In what follows, we shall briefly discuss their trends.

3.1 Value Added

It was postulated that delicencing along with trade and investment reforms would foster the growth. Hence, a number of scholars have analysed the growth performance of manufacturing sector (Balakrishnan and Babu 2003; Chandrasekhar 1996; Chaudhuri 2002; Goldar 2011; Gupta et al. 2008; Gupta et al. 2008a, b; Gupta and Kumar 2010; Mani 1995; Nagaraj 2003, 2011, 2017; among others). Figure 1 shows the annual growth rates of manufacturing value added during the past 25 years after economic liberalization. The empirical evidence suggests the annual rate of growth of manufacturing has fluctuated considerably in the 1990s. In accord with the studies by Chaudhuri (2002) and Nagaraj (2017), the growth in value added increased consistently up to 1995–96 and decelerated thereafter (Fig. 1).[2] By comparing the growth of manufacturing in 1990s to that of 1980s, scholars (Nagaraj 2011) argue that there is no significant increase in the growth particularly after the reforms. The growth in the manufacturing sector's decadal average growth rates have remained less than 6% right from 1950s to 1990s (Nagaraj 2017). However, it is important to note that the growth picked from 2000–01 onwards and the sector experienced

[2]Chaudhuri (2002) points that fluctuations in growth of value added was observed from 1951 to 1952 onwards with high growth and low growth phase. Therefore, the post liberalization fluctuation in growth is an extension to what was observed in the previous decades.

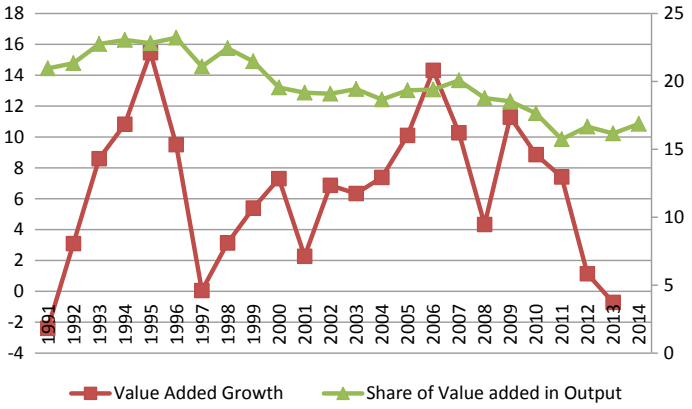

Fig. 1 Growth in value added and share of value added in output. *Source* Computed using ASI, various years and CSO

a slight rise in its average growth rate to 8% in the decade of 2000. More importantly, its performance since then has been worsening with growth rates declining since 2006 onwards (Fig. 1). The studies highlight that the growth in manufacturing is led by the fast growth of medium and high-tech industries such as electrical and electronics, chemicals, metal and non-mental and transport industries (Nagaraj 2011 for example). From Fig. 1, it appears that the value-added growth during the last 25 years presents a cyclical pattern instead of a sustained growth. It is also evident that in contrast to the shorter cycle length during the early years of reform, the cycle length expands as we move to the later period; an issue which needs further enquiry.

Figure 1 also presents the decline in value added over the years. It is evident from the figure that the Indian manufacturing sector has been experiencing a rising output but diminishing value added in total output with the trend becoming more pronounced since mid-1990s. The share of value added in output decreased from 23% in 1996 to 18% in 2004 with a marginal increase up to 20% in 2008 and declined thereafter. The declining manufacturing value added indicates an increase in the resource intensity of the manufacturing sector.

3.2 Trade Performance

The second important aspect that received substantial scholarly attention in the manufacturing is the trade performance after removal of tariff and non-tariff barriers as part of the economic reforms. Following the experience of East-Asian countries like South Korea, Taiwan, Singapore and China that exploited the domestic comparative advantages and embarked on export-oriented growth strategy, the trade reforms were expected to increase the exports of labour-intensive manufacturing products

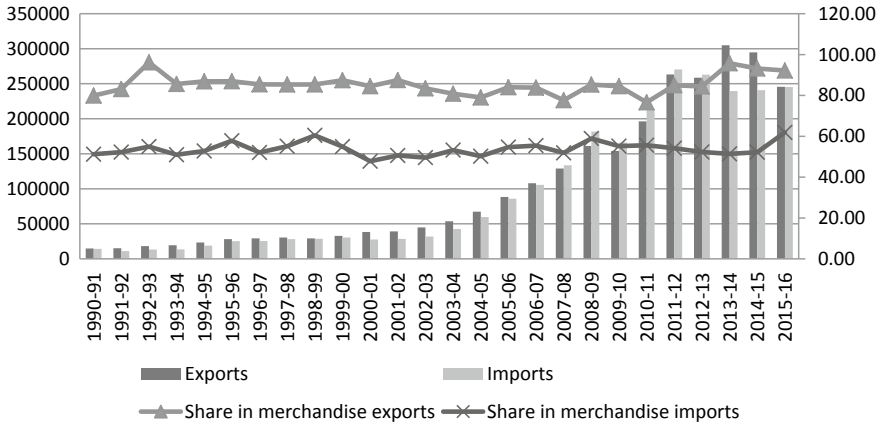

Fig. 2 Share of manufacturing in merchandise trade. *Source* Computed using RBI data and UN_COMTRADE

and foster employment. Figure 2 presents trends in exports (Rs million) and imports (Rs million) and the export share of manufacturing in total merchandise trade from 1990 to 2015. The simple annual growth indicates a steep decline in export growth for the first three years after the initiation of reforms followed by high fluctuations in the growth of export throughout the period under observation. However, it is important to note that the growth of exports is found to be higher than the growth of value added and employment for most of the years indicating increasing trade performance (Table 14). Similarly, the share of manufacturing in total merchandise exports increased from 79% in 1990 to 87% in 2002 and declined marginally thereafter. However, the manufacturing exports at present contribute over 93% of total merchandise exports, which indicates the increasing trade orientation of the manufacturing sector (Fig. 2). The share of manufacturing imports, on the other hand, in total merchandise imports shows a declining trend, which could be seen in the context of increasing oil, imports.

A number of scholars have provided a detailed analysis of trade performance of India's manufacturing sector and the aggregate findings are in conformity with the trends observed in Fig. 2 (Nambiar et al. 1999). Some scholars have argued that India's manufacturing export performance is, however, poor in comparison with other countries (Francis 2015). It was argued that the growth of Indian manufacturing sector is not an export-led growth but has been induced by domestic demand and imports (Banga and Das 2010). As opposed to the conventional trade theoretic view, which is based on static comparative advantage, the trends in export performance after liberalization indicate a structural shift towards capital-intensive and high-technology sectors (Veeramani 2012). The changing comparative advantage in favour of technology-intensive industries needs to be seen in the context of efforts towards reaping the dynamic comparative advantage. At the same time, scholars also highlight an increase in the dependence on imports particularly among high-

tech industries and argue that liberalization has led to deindustrialisation in select sectors like electronics (Chaudhuri 2015).[3]

3.2.1 Employment

The third issue that has generated a long debate is employment generation within the manufacturing sector. A number of scholars have analysed the trends and patterns of employment growth in Indian manufacturing sector particularly after the liberalization (Goldar 2000; Nagaraj 2000, 2004; Kannan and Raveendran 2009; Goldar 2011; among others).[4] Figure 3 presents the employment scenario of total persons engaged during the last two and half decades. From the figure, three phases of employment growth are evident. In the first phase (1990–96), we observe an increase in the number of people employed. Goldar (2000) has shown that employment in the organized manufacturing sector (including electricity) registered an impressive annual growth rate of about 2.83% during 1990–96. This trend in the increase in absolute employment from 1990 to 1996 is evident from Fig. 3 wherein employment has grown from over 6 lakhs to over 8 lakhs. Goldar (2000) attributed the growth in overall employment to private and joint sector companies. The growth rate registered by the public sector was only 0.39% as against 3.72% by the other firms. However, Nagaraj (2000) contested the findings of Goldar (2000) and attributed the employment growth during the 1990s to the investment boom, witnessed in response to the industrial deregulation and trade policy reform. The second phase (1997–03) shows a decline in absolute employment. As Nagaraj (2004) pointed, 1.3 million employees lost their employment during 1995–96 to 2001–02 and these losses have been widespread across major states and industry groups. Further, he noted that jobless growth during the 1980s was followed by an employment boom for four years during 1992–96 and retrenchment thereafter. Similarly, Rani and Unni (2004) found that the initial economic reform policies have adversely affected employment in organized and unorganized manufacturing sectors, which got improved in the subsequent years. In another study, Kannan and Raveendran (2009) showed that employment growth has been negligible from 1980 to 2004 despite high levels of output growth. They found that some industries such as tobacco, textile, leather, paper, metals and non-metals, chemicals and electrical and non-electrical machinery have shown high output growth along with high employment growth. The scholars attributed the phenomena of jobless growth to increasing capital intensity and growth of real wages.[5]

[3]For details on premature deindustrialization in developing as a result of globalization, see Rodrik (2016).

[4]Bhalotra (2003) provides a comprehensive overview and summary of studies that dealt with employment and wages in manufacturing sector in India under the light of economic liberalization.

[5]For a detailed empirical analysis on the employment growth in Indian manufacturing sector, see Bhalotra (1998) and Fallon and Lucas (1993).

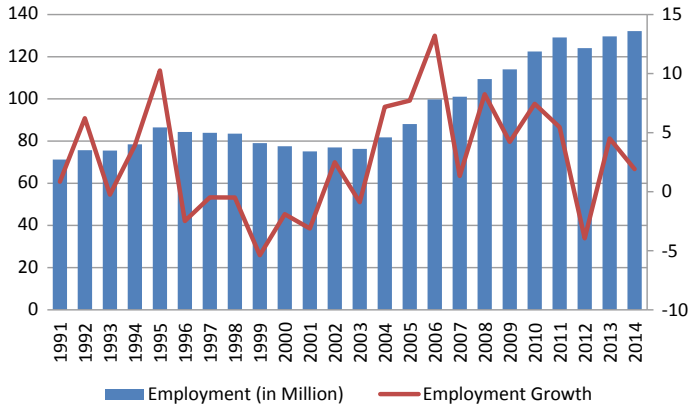

Fig. 3 Employment scenario in Indian manufacturing. *Source* Computed using ASI, various years

However, there is a significant increase in absolute level of employment from 2004 to 2011 with a marginal decline in employment afterwards. Goldar (2011) argued that employment has registered an annual growth rate of 7.5% during 2003–04 to 2008–09 after a negative employment growth in the second phase. While the marginal decline in employment after 2011 could be broadly attributed to general economic slowdown wherein industrial sector registered negative growth rates, the significant growth in employment (during 2003–11) is attributed to growth in a private sector where the labour intensity is higher than the other industry categories (Goldar 2011).

Figure 4 shows increasing labour productivity, which substantiates the argument in the literature that capital intensity has been increasing. Similarly, Fig. 4 also depicts declining employment intensity over the years. Given the employment generation potential of the Indian manufacturing, another strand of literature analysed the role of trade in observed patterns employment growth in Indian manufacturing (Kambhampati et al. 1997; Khambampati and Howell 1998; Goldar 2002; Hasan et al. 2003; Banga 2005; Sen 2008, 2009; Raj and Sen 2012; Rajesh raj and Sasidharan 2015; Goldar 2009; Uma et al. 2012).

While some studies argue that trade liberalization has led to employment generation through increase in employment elasticity (Kambhampati et al. 1997; Goldar 2002; Hasan et al. 2003; Deshpande et al. 2004; Banga 2005), few others argue that liberalization process has contributed to the downsizing of employment, switching towards capital-intensive production (Raj and Sen 2012; Rajesh raj and Sasidharan 2015; Goldar 2009; Uma et al. 2012). The existing studies on employment growth in the manufacturing sector have focused on aggregate employment while the quality of employment generated, as argued by other scholars, is important particularly in the light of increasing trade liberalization and to create inclusive employment opportunities which have ramifications on growing inequality.

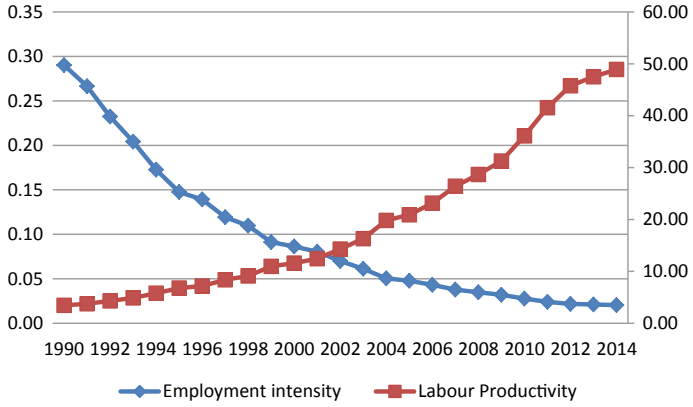

Fig. 4 Labour productivity in Indian manufacturing. *Source* Same as Fig. 3

3.2.2 Quality of Employment

While the recent evidence in terms of increasing share of manufacturing in merchandise along with increasing evidence for export-supported employment generation, the issue of much concern from equity and welfare perspective is quality of employment generated. It is generally understood that employment is key to the social and economic advancement of workers and provides them with a sense of identity, but it may also be associated with risks for health and well-being. Further the developments in the labour markets can be accompanied by challenges concerning the quality of employment. Hence, the quality of employment has been attracting the growing attention of the academia, policymakers and especially the multilateral organizations like the International Labour Organization (ILO). The focus of ILO, for example *today* goes beyond the quantity of employment to include worker rights; employment creation; social protection; and social dialogue between workers' organizations, employers' organizations and calls for *promoting opportunities for men and women to obtain decent and productive work.* In Europe, the Europe 2020 strategy identified employment and job quality as essential elements for smart, sustainable and inclusive growth. United Nations Economic Commission for Europe (2015) has suggested many indicators of the quality of employment, which include (1) safety and ethics of employment, (2) income and benefits from employment, (3) working time and work–life balance, (4) security of employment and social protection, (5) social dialogue (6) skills development and training and (7) employment-related relationships and work motivation. Since the focus in the Indian context is apparently on the quantity of employment, the quality considerations are yet to receive the attention of policymakers and we have very limited database on the above indicators. For the present purpose, we have gathered information on three aspects of quality, skilled and unskilled workers, contract and direct workers and male and female workers.

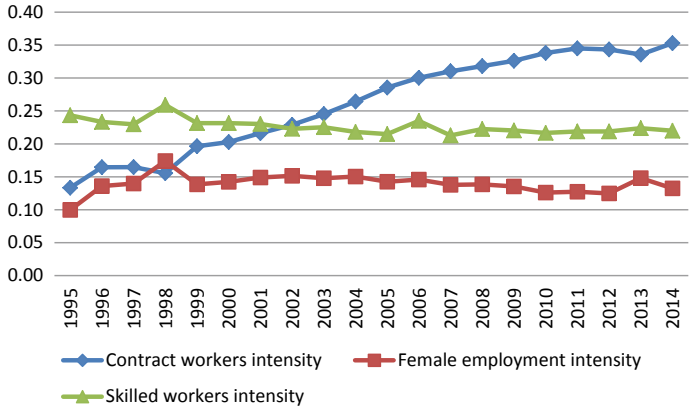

Fig. 5 Trends in quality of employment in manufacturing. *Source* Same as Fig. 4

Figure 5 presents the nature and quality of employment generated during 1995–2014. Due to data paucity on the employment of male and female prior to 1995, we restrict our analysis to 1995–2014 so that the numbers could be easily compared. We find that the share of workers (unskilled) in total employment has largely remained the same over years with minor variations. At the same time, the share of female in total employment has increased from 9.97% in 1995 to 15.15% in 2002. However, the share has gradually declined to 12.48% in 2012 with a minor improvement afterwards. What is of much relevance from the equity and welfare perspective is that in the share of contract workers there is an almost threefold increase from 13.34% in 1995 to 26.42% in 2004 and further to 35.39% in 2014.

As evident from the figure, thus today more than one-third of total workers are employed through contracts who do not come under the purview of any social security benefits. The observed trend clearly indicates the deterioration in the quality of employment that is being generated in the organized manufacturing sector. Along with the deterioration in the quality of employment, we also observe a sustained decline in the share of wages in the value added and a significant increase in the share of profit (see Fig. 6). The figure also, however, shows the recent increase in the share of wages and decline in profits. Such an increase in wage share has coincided with a decline in the real wage for workers. To the extent that wages of permanent workers are flexible downwards, the increase in the wage share could have been an outcome of increased employment mostly of contract workers at lower wage rate.

Drawing from three phases of employment generation, we divided the period of analysis into two sub-periods; period one (1996–04) and period two (2004–14). The first period represents the phenomenon of jobless growth where total employment growth was found to be negative (−0.56%) while the output growth was 8.39%. The second period corresponds to high output growth (10.05%) coupled with high employment growth (5.01%). As already discussed, the employment growth patterns at the aggregate level have been widely debated. Hence, given the focus of the

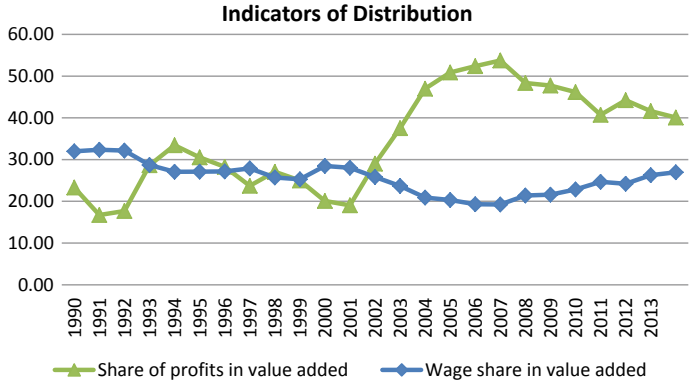

Fig. 6 Share of profit and wages in value added. *Source* Same as Fig. 4

present paper, we focus on the quality of employment growth. It is evident from Table 14 that the growth in employment in period one was mainly driven by the growth in contract labour (8.15%) and female employment (5.22%) while the growth of direct employment and male workers was found to be negative (−1.96% and −3.04%, respectively). In the second period, the growth of female employment declined (3.92%) as compared to the first period (5.22%) while the growth of male workers improved in the second period (3.59%).

Given the nature and quality of employment generation in India's manufacturing sector where we observed an increase in the share of contract workers, it is imperative to analyse its manifestations in terms of share of wages and profits in value added. From a distribution point of view, the roots of inequality could be identified through changes in relative shares of profits and wage share of workers. Figure 6 presents the share of wages and profits in value added. We find that the share of wages in total value added shows a declining trend from the beginning of reforms with a marginal increase from 2007 onwards. Similarly, the share of profits showed a declining trend from 1994 onwards till 1999 and increased significantly during 1999–07. The share has nearly doubled during the observed period followed by a declining trend from 2007 onwards. The observed trend in the share of wages and profits could be broadly attributed to: (1) changing production technique in favour of the capital-intensive mode of production and (2) the observed changes in the quality of labour. Though the observed trends in the share of wages and profits indicate severe implications on growing inequalities, Nayyar (2014) points out that profit-led growth and wage-led growth could be complementary to each other rather than substituting in nature.

3.2.3 Champions of Exports and Employment Generation

It is evident from our discussion in the previous section that manufacturing sector is not only having the potential for employment generation but also a major source of

export earnings and that manufacturing exports has the potential towards contributing to employment generation. Veeramani (2016) observed that out the 13.3 million exports supported employment generated during 2010–11 to 2012–13, the bulk of it (75%) was brought about by the manufacturing sector. However, it was also observed that industries are not equally positioned with respect to addressing these two key policy objectives of employment and export generation. While exports and employment generation could be complementary in some of the industries, these policy objectives could be inimical in others. Therefore, the conventional approach of export promotion based mainly on the revealed comparative advantage need not necessarily contribute towards employment. In the current context of growing inequality, which cannot be delinked from the jobless growth, and much hope has been pegged on manufacturing export as a strategy towards employment generation, the relevance of an export strategy built on the twin pillars of exports and employment, therefore cannot be overemphasized.

Viewed thus, the aggregate measures of export orientation may conceal more than what it reveals about employment. When we analyse the trade-induced development from an employment generation perspective, it is important to identify industries that are capable of more exports and job generation potential. From the equity and distribution perspective, it is not just the employment generation that matters but the quality of employment created is equally important. This is because the strategy towards building competitiveness through cost reduction may entail, along with changes in production techniques, changes in the structure of employment leading to an increasing share of contract workers in the workforce with its implications on the quality of employment generated. Hence, a related issue pertains to the quality of employment generated through export promotion. However, with the plausible exception of Saha et al. (2013) and Banerjee and Veeramani (2017),[6] studies on trade and employment in Indian context have not paid adequate attention to the quality of employment generated through exports. Finally, in a large and diversified economy like India, while the relevance of harnessing static comparative advantage is important, equally important is the need to build up dynamic comparative advantage and locating such industries for evolving an employment oriented export strategy from a long-term perspective.

Towards identifying the export-driven employment-generating industries, we divide all the 3-digit manufacturing industries into four mutually exclusive categories based on their observed performance with respect to employment generation and export performance in comparison with the manufacturing sector as a whole. The first category, designated as export-employment champions, is those industries with employment intensity and export intensity higher than the industry average. Industries in this category, while being more labour intensive, are also highly export-oriented such that they hold the potential for employment generating not only because

[6]Studies have pointed out the increasing contract worker intensity in total employment particularly after the liberalization and changes brought in the labour laws (Ramaswamy 1999; Sharma 2006; Neethi 2008; among others). However, these studies do not provide any evidence on the role of trade orientation therein…

of their labour intensity but also due to scale effect as they have higher export competitiveness. The second category, export champions-employment laggards, is of industries with export intensity higher than the industry average but the observed employment intensity is lower than the industry average. The observed performance could be attributed to more capital-intensive production and that more employment generation could take place mostly through scale effect through increased exports. The third category, export laggards-employment champions, are those industries with export intensity lower than the industry average while the employment intensity higher than the industry average. In the case of these industries, high employment generation capacity notwithstanding is not having export competitiveness. Hence, building export competitiveness in these industries is important for more employment generation. Finally, we have the export-employment laggards, characterised by lower than industry average export intensity and employment intensity. These are the industries with higher capital/technology intensity and greater domestic market orientation. While export promotion could be helpful for employment generation in all the industries, the return to the export promotion in terms of employment generation is likely to be higher in case of export-employment champions and employment champions-export laggards. A definite conclusion, however, is not warranted especially because higher export intensity need not necessarily always translate into a higher level of exports and similarly higher labour intensity may not be leading to higher number of jobs. Further, as already indicated, larger number of jobs may not always be leading to favourable outcomes as regards equity and welfare on account of the quality of the employment generated. In what follows, we shall locate and map the industries at the 3-digit level based on above categorisation and examine their relative contribution towards export and employment on the one hand and quality of employment generated by them on the other. We shall begin our analysis at the aggregate level and proceed with a more disaggregate level.

3.2.4 Empirical Evidence: Aggregate Analysis

Table 1 presents the distribution of industries (3-digit level) in India's manufacturing sector in terms of four categories that we have identified. It is evident that in 1990, a little over 25% of the number of industries were employment-export champions and 36% of the industries were export champions but employment laggards. These two groups of industries that displayed higher employment intensity accounted for nearly 61% of the total number of industries in India's manufacturing sector in 1991. As we move to 2000, their share further increased by 69% and declined marginally thereafter to reach 67% in 2014. The recent decline in their share notwithstanding, it appears that high employment intensity appears to be the hallmark of an overwhelming majority of manufacturing industries in India. The table also highlights two other interesting features of industries in India's manufacturing sector. First, there has been a steady increase in the share of export champions-employment laggards, which is evident from more than fourfold increase in the share of industries in this category from 3.6% in 1990 to over 16% in 2014. This indicates the increasing capital intensity

Table 1 Distribution of number of manufacturing industries (3-digit) based on their performance with respect to export and employment

Year	Champions of export and employment	Employment laggards and export champions	Employment champions and export laggards	Laggards in employment export
1990	14 (25.45)	2 (3.63)	20 (36.36)	19 (34.54)
1991	15 (27.27)	1 (1.81)	20 (36.36)	19 (34.54)
1992	12 (21.81)	2 (3.63)	22 (40)	19 (34.54)
1993	9 (16.36)	3 (5.45)	23 (41.81)	20 (36.36)
1994	10 (18.18)	2 (3.63)	22 (40)	21 (38.18)
1995	13 (23.63)	1 (1.81)	21 (38.18)	20 (36.36)
1996	13 (23.63)	2 (3.63)	21 (38.18)	19 (34.54)
1997	13 (23.63)	1 (1.81)	20 (36.36)	21 (38.18)
1998	10 (18.18)	4 (7.27)	22 (40)	19 (34.54)
1999	9 (16.36)	3 (5.45)	22 (40)	21 (38.18)
2000	13 (23.63)	1 (1.81)	25 (45.45)	16 (29.09)
2001	11 (20)	3 (5.45)	23 (41.81)	18 (32.72)
2002	12 (21.81)	2 (3.63)	23 (41.81)	18 (32.72)
2003	13 (23.63)	1 (1.81)	27 (49.09)	14 (25.45)
2004	17 (30.9)	2 (3.63)	25 (45.45)	11 (20)
2005	12 (21.81)	3 (5.45)	26 (47.27)	14 (25.45)
2006	13 (23.63)	6 (10.9)	25 (45.45)	11 (20)
2007	12 (21.81)	5 (9.09)	26 (47.27)	12 (21.81)
2008	13 (23.63)	6 (10.9)	23 (41.81)	13 (23.63)
2009	14 (25.45)	5 (9.09)	23 (41.81)	13 (23.63)
2010	13 (23.63)	5 (9.09)	24 (43.63)	13 (23.63)
2011	14 (25.45)	4 (7.27)	25 (45.45)	12 (21.81)
2012	14 (25.45)	5 (9.09)	26 (47.27)	10 (18.18)
2013	13 (23.63)	7 (12.72)	24 (43.63)	11 (20)
2014	12 (21.81)	9 (16.36)	25 (45.45)	9 (16.36)

Note Figures in the parenthesis indicate the share of the number of industries
Source Same as Fig. 4

in India's manufacturing sector. Whether the observed shift also involves a strategic shift towards dynamic comparative advantage is a related issue which we shall take up later in this section. Second, in 1990, a large proportion (34.5%) were export and employment laggards indicating their low labour intensity and greater domestic market orientation. It is encouraging to note that there has been a steady decline in the number of such industries and their share in 2014 is found to be only 16.4%. These points towards increasing export orientation of manufacturing industries in India.

3.2.5 Contribution to Export and Employment

Analysis in terms of export intensity and number of industries, while being indicative, need not necessarily convey the real contribution. Hence we shall now look at the contribution of the different groups of industries with respect to exports and employment generation. Table 2 presents the trends in the share of the four categories in terms of export and employment during 1991–2014. In 1990, the employment and export champions accounted for over 55% of the total manufacturing exports, which declined over the years to reach the present level of 20%. When it comes to employment, their share has shown fluctuations from year to year and yet their contribution is over 19% in 2014. Thus, we have a situation wherein 22% of the manufacturing industries that we have designated as export-employment champions, today account for 19% of the employment and 21% of the exports. In case of employment champions-export laggards, while their export share has increased to reach as high as 21% in 2007 there has been a decline thereafter to reach the present level of 18%. When it comes to their employment contribution, it continues to remain as high as 59%. Thus viewed, it appears that these two categories of industries put together accounts for nearly 78% of total employment, while they account for only 38% of the total exports. From the employment generation perspective, any attempt to enhance their international competitiveness is bound to give rich dividends in terms of employment. The table further reveals that export champions and employment laggards today drives the manufcaturing exports as their share in total exports increased from less that 7% to over 50%. These industries are known to be poor candidates for job generation as their share in employment is only 8% of the total manufacturing employment.

When it comes to employment-export laggards, their share both in exports and employment has steadily declined—employment from 21% 1990 to 11% in 2014 and export from 32 to 13.7% during the corresponding period. From the above discussion, it appears that any strategic approach towards increasing employment shall focus on the first two categories (export-employment champions and employment champions-export laggards). The third category could also be helpful in increasing employment through enabling their scale of exports.

As already indicated, higher employment need not necessarily contribute towards equity and welfare if increased job creation is not accompanied by a concomitant increase in the quality of employment. Hence, we explore the plausible qualitative dimensions of the employment generated by the four categories of industries.

3.2.6 Quality of Employment

Contract Labour Intensity

An important dimension of quality of employment, which has been often highlighted relates to the contract labour intensity (Ramaswamy 1999; Sharma 2006; Neethi 2008; Saha et al. 2013; among others). Contract labour employment by their very nature is perceived to be of low quality because unlike their permanent counterparts, their entitlements towards social protection are limited. Table 3 presents data on the

Table 2 Relative employment and export share of category to total manufacturing

Year	Employment-export champions		Employment laggards-export champions		Employment champions-export laggards		Employment laggards and export laggards	
	Exp	Emp	Emp	Exp	Emp	Exp	Emp	Exp
1990	7.38	55.47	2.17	6.91	58.16	16.23	32.29	21.38
1991	23.91	62.46	2.08	7.37	37.78	5.73	36.22	24.45
1992	6.63	33.69	2.63	27.06	59.03	17.41	31.71	21.84
1993	7.25	29.8	2.89	30.23	57.67	17.07	32.19	22.9
1994	23	40.7	2.84	28.41	39.59	6.03	34.58	24.85
1995	27.95	63.05	1.99	7.73	37.76	6.57	32.3	22.66
1996	24.28	56.16	5.29	12.23	38.35	7.19	32.08	24.43
1997	25.48	57.21	2.12	8.4	39.43	9.2	32.98	25.19
1998	23.89	39.95	7.01	32.61	41.6	8.77	27.49	18.67
1999	24.76	39.02	3.89	30.76	39.52	8.73	31.83	21.49
2000	28.09	59.69	1.86	6.4	45.77	11.86	24.28	22.06
2001	25.35	36.64	3.82	25.01	39.88	9.79	30.96	28.56
2002	25.89	34.09	2.33	22.03	45.5	13.41	26.28	30.47
2003	27.43	31.81	1.59	20.42	53.7	20.29	17.27	27.48
2004	33.03	51.88	4.57	11.84	50.41	15.76	11.99	20.52
2005	16.14	21.99	6.08	29.48	60.77	21.31	17.01	27.21
2006	19.74	20	7.78	46.68	57.61	20.28	14.87	13.04
2007	16.92	18.28	5.64	43.56	60.07	21.07	17.37	17.09
2008	17.32	16.89	5.88	43.57	59.76	21.16	17.03	18.38
2009	25.07	27.34	5.36	44.47	52.17	12.73	17.4	15.45
2010	14.17	16.01	5.57	46.42	62.2	21.49	18.07	16.09
2011	17.01	18.42	4.8	46.18	59.24	19.45	18.94	15.95
2012	24.12	23.48	6.64	48.11	54.47	15.62	14.77	12.79
2013	25.05	22.62	7.77	51.03	53.22	14.96	13.96	11.38
2014	19.21	20.1	8.22	50.51	58.81	18.05	13.76	11.33

Note Exp Exports, *Emp* Employment

intensity of contract labour (represented by the share of contract workers in total workers) in the manufacturing sector as a whole and for the four categories that we have identified. In sync with the findings of the earlier studies, Table 3 shows that for the manufacturing sector as a whole, the share of contract labour almost increased threefold from 13% in 1990 to 35% in 2014. This tends to suggest that more than one-third of total workers in India's manufacturing are contractual labour, not entitled to any social security benefits, indicating a drastic deterioration in the

Table 3 Contract labour intensity in different categories of industry and the manufacturing sector

Year	Export-employment champions	Employment laggards and export champions	Employment champions and export laggards	Laggards in employment export	Total industry
1992	4.20	24.67	12.56	9.03	11.35
1995	7.07	22.20	18.36	12.47	13.34
1998	9.13	33.33	15.77	16.88	15.55
2001	10.13	25.06	27.98	23.14	21.64
2004	15.26	40.24	32.83	26.43	26.42
2007	18.43	35.45	32.95	35.91	31.02
2010	18.36	38.00	34.21	44.29	33.81
2013	27.65	38.86	32.07	47.33	33.57
2014	21.03	38.82	37.66	43.76	35.29

Source Same as Fig. 4

quality of employment in the manufacturing sector as a whole. In contrast to the trend observed in the manufacturing sector as a whole, the level of contract labour intensity is only 21% in case of export-employment champions.

In case of export champions-employment laggards that account for 50% of the total exports the contract labour intensity, similar to other two categories, is above the manufacturing sector as a whole. Incidentally, it is interesting to note that the share of contract labour intensity is found to be the highest in export and employment laggards. The contract labour intensity in such industries increased from 9% in 1992–93 to 19% in 2000–01 and their share increased significantly to 44% by 2014–15, indicating that regardless of whether the industry is export oriented or domestic market oriented, making use of contract labour, presumably with a view save on labour cost, appears to have emerged as a major competence building strategy. Saha et al. (2013) also reported similar findings wherein it is shown that import-competing industries hire more contract workers. To the extent that wage, while being a cost for the producers, is income for workers and hence a source of demand for the industry, implications of such immersing competence building strategy prevalent in all the categories, except the export-employment champions calls for further scrutiny. Perhaps, it is high time to reflect on the relevance of sustainable competitiveness for which there is hardly and shortcut other than being innovative.

3.2.7 Female Labour Intensity

The second indicator of employment quality that we have considered is the female employment intensity. Table 4 indicates that for the manufacturing sector as a whole, there is no marked increase in female labour intensity, instead, the share of females in

Table 4 Female labour intensity in different categories of industry and the manufacturing sector

Year	Export-employment champions	Employment laggards and export champions	Employment champions and export laggards	Laggards in employment export	Total industry
1995	10.88	9.54	12.73	5.27	9.97
1998	17.09	13.40	22.86	9.94	17.41
2001	19.25	16.44	16.36	8.32	14.89
2004	19.86	5.89	15.48	1.91	15.04
2007	28.46	6.41	12.93	3.59	13.78
2010	30.94	5.67	11.03	4.67	12.61
2013	23.31	8.24	14.63	3.74	14.80
2014	26.95	09.16	11.48	3.29	13.34

Source Same as Fig. 4

total workers declined from 17% in 1998 to 13% at present. It appears that industries choose between contract workers and female labour since we find that industries with low contract intensity are found to have higher female employment intensity. However, we find significant inter-group variations with respect to female labour intensity. In 2014–15, the female employment intensity is found to be the highest in export-employment champions with females accounting for 27% of the workforce as compared to only 13% for the manufacturing sector as a whole. When it comes to the 'employment champions-export laggards' and the export champions-employment laggards, the female labour intensity (11 and 9%) is found to be only marginally lower than the manufacturing sector as a whole (13%). But the female labour intensity is found to be the lowest with a declining trend over time, in case of the export-employment laggards.

3.2.8 Skilled Labour Intensity

Table 5 presents data on skilled labour intensity measured in terms of the share of supervisory and management staff in total employment. An increase in the share of skilled labour may be taken as an indicator of skill-biased technological change on the one hand declining employment for the workers on the other. Data presented in the table, however, tends to suggest that, for the manufacturing sector as a whole there has not been any major shift towards skill-biased employment because the share of skilled manpower remained at 22–23% during the period under consideration. However, when it comes to export-employment laggards, the skilled labour intensity is higher than that industry average. But it is also evident that there has been a marked decline in the share of the skilled labour force over time (from 29% in 1990–91 to 23% in 2014–15) indicating an increase the share of workers, which as we have already noted coincided with increased intensity of contract workers. From Table 5, it is also

Table 5 Skilled labour intensity in different categories of industry and the manufacturing sector

Year	Export-employment champions	Employment laggards and export champions	Employment champions and export laggards	Laggards in employment export	Total industry
1990	22.71	27.43	19.14	29.39	22.89
1993	20.71	26.43	20.55	30.56	23.95
1996	17.09	24.42	22.03	29.42	23.33
1999	17.06	26.47	22.27	28.59	23.16
2002	17.10	22.94	21.17	29.26	22.28
2005	17.69	25.70	20.36	27.55	21.48
2008	18.38	25.58	22.01	25.85	22.24
2011	18.22	26.07	21.54	25.22	21.89
2014	19.71	25.16	22.07	23.02	22.00

Source Same as Fig. 4

evident that in case of export champions-employment laggards, the skilled labour intensity is the highest with only a marginal decline (from 27.5 to 25%) during the period under consideration indicating that their export competitiveness is driven, at least to some extent, by skill and technology. With the share of skilled labour intensity remaining more or less unchanged in the other two categories (export-employment champions and employment champion-export laggards) that accounts for nearly 8% of the manufacturing employment trends to suggest that low labour cost continue to be the major driver of competence building in India's manufacturing sector.

The analysis of the three aspects of quality of employment generation in India's manufacturing sector using the four categories of export and employment generation revealed several interesting patterns. First, export-employment champions provides higher jobs to unskilled workers as compared to skilled workers, employs a higher proportion of female labour and lower number of contract workers. This clearly indicates that export-driven employment industries not only create more employment but also the high quality of employment. Second, export champions-employment laggards industries also seem to be providing a better quality of employment as is evident from their skill intensity, contract intensity and female employment intensity as compared to their capital-intensive counterparts. Hence, promotion of export orientation in these employment-generating industries would further increase both quantity and quality of employment.

3.2.9 Implications on Equity

Our central concern in analysing export–employment relationship in the manufacturing sector is to explore the employment generation through exports towards address-

ing the observed deficits in inclusive development. To address this issue further we have examined distribution aspects of the different categories of industries that we have identified. Here, our focus is on the share of wages and profit in value added. Before taking up this issue of distribution, in the light of our finding in section one that the depth of manufacturing and that the share of value added has been declining over time, we shall begin with the share of value added in the output in four categories that we have identified.

The observed trend in value added across our industrial categories shows a certain encouraging trend in the sense that the export-employment champions showed a relatively higher value-added share as compared to the manufacturing sector (Table 6). The observed share is found to be the highest in export-employment champions followed by employment champions-export laggards (21.07%). Especially, notable is that these two groups of industries managed to maintain their share at 21% over time. When it comes to export champions-employment laggards, though their value-added intensity is lower than the manufacturing average at present, they have been able to record a marginal increase. Finally, we observe a drastic decline in case of export-employment laggards wherein the share of value added in output declined from about 22% during 1990s to 16%, thereafter and 13% at present (Table 6). On the whole, we are inclined to infer that though there has been a decline in value added and depth of manufacturing, inter-alia, on account of increasing integration, globalization and global production network, we could identify a few group of industries, which managed to generate more value addition in the domestic economy.

With respect to the distribution of value added in terms of profit and wages which is often being construed as indicators of equity, we find that the profit share has been showing a steady increase over the years to reach the highest level of 54% in 2007 and declined thereafter to reach the level of 40% in the terminal year. Correspondingly, the share of wages declined over the years to reach the lowest level of 19% in 2007 and increased thereafter to reach 27% in the terminal year (Table 7).

The recent increase in the share of wage bill, however, does not imply that the workers are better off. As is evident from Table 8, the share of workers in the wage bill has shown a steady decline not only for the manufacturing sector as a whole but also for the four categories we identified. Hence, the observed increase in the share of the wage bill in value added has to be attributed to an increase in the share of professional and managerial staff in the wage bill. To the extent that there has not been any increase in the share of professional/managerial staff in the workforce, the observed increase in their share in wage bill needs to be seen in the context of higher rate of increase in their salaries (Table 8). On the whole, the emerging trend appears to be one wherein the professionals (high skilled) and capitalists gained and the workers appears to have lost. The above discouraging trend notwithstanding, the distribution of profit and wage bill across the four categories that we have identified has certain encouraging highlights. To begin with, with respect to employment and export champions, the wage share is significantly higher than the other categories. Moreover, the share of wage almost doubled as move from the initial year to the terminal year (Table 7). Correspondingly, the profit share is the lowest, notwithstanding the recent upward trend therein. The next category with more favourable equity outcomes is the export

Table 6 Value-added share in different categories of industry and the manufacturing sector

Year	Export-employment champions	Employment laggards-export champions	Employment champions-export laggards	Laggards in employment export	Total industry
1990	22.32	8.91	23.49	20.99	21.37
1991	22.10	6.98	26.25	19.86	20.96
1992	22.03	8.59	21.63	22.37	21.34
1993	25.40	13.24	23.48	22.97	22.75
1994	23.99	11.24	25.67	22.85	23.05
1995	18.76	9.16	25.15	24.32	22.81
1996	22.31	10.11	26.00	24.23	23.22
1997	20.65	9.11	20.97	22.19	21.09
1998	21.33	9.69	24.71	24.44	22.44
1999	20.28	12.79	25.40	21.14	21.48
2000	19.87	7.29	22.04	18.84	19.55
2001	19.24	11.89	24.55	17.70	19.17
2002	19.79	18.94	21.32	17.87	19.09
2003	19.17	11.54	22.27	17.73	19.44
2004	19.17	15.39	21.30	17.37	18.66
2005	20.09	15.16	21.26	18.81	19.34
2006	20.34	15.63	22.46	19.46	19.40
2007	20.69	17.11	22.32	19.87	20.08
2008	21.09	15.96	22.64	15.87	18.77
2009	25.68	13.21	21.18	17.36	18.54
2010	21.40	14.03	22.37	13.74	17.65
2011	20.20	9.32	21.85	12.60	15.74
2012	24.95	11.53	20.87	13.32	16.67
2013	24.29	10.96	19.65	14.28	16.17
2014	21.84	13.52	21.07	13.07	16.87

Source Same as Fig. 4

laggards and employment champions, wherein wage share increased in the recent past presumably at the cost of profits. What is striking is the distribution of profit and wages in export champions and employment laggards, wherein the profit share is significantly higher than the industry average; the wage is not even 50% of the industry average (Table 7). What is more important is the share of wages in this category has shown a steady decline over the years. The observed trends in the share of wages cannot be delinked from the trends in employment and its quality that we have already discussed. The categories of industries that generate more jobs along

Table 7 Share of profits and wages in the value-added in different categories of industry and the manufacturing sector

Year	Export-employment champions		Employment laggards and export champions		Employment champions and export laggards		Laggards in employment export		Total industry	
	Profits	Wages	Profits	Wages	Profits	Wages	Profits	Wages	Profits	Wages
1993	49.31	22.22	51.65	16.43	18.93	35.02	31.64	21.96	28.63	28.71
1994	28.13	29.16	47.13	17.92	25.07	31.39	38.13	20.77	33.43	27.07
1995	11.58	37.17	34.05	18.08	25.39	36.56	37.71	20.66	30.55	27.12
1996	12.35	31.29	32.77	17.64	22.53	33.43	35.07	19.28	28.26	27.16
1997	7.19	35.19	37.05	18.27	13.34	37.54	32.06	19.47	23.70	27.89
1998	8.09	32.41	42.20	18.98	17.15	30.42	35.67	17.32	27.09	25.72
1999	−0.33	33.78	45.37	19.45	20.90	28.23	32.13	19.11	24.99	25.28
2000	9.90	33.99	28.99	19.67	20.18	30.03	23.61	22.07	20.08	28.47
2001	1.45	37.18	34.95	22.50	20.30	28.20	21.77	23.04	19.03	28.03
2002	10.95	35.56	41.30	21.50	22.37	30.34	36.79	18.51	29.02	25.84
2003	12.51	35.11	37.46	32.18	33.74	25.75	48.28	15.61	37.54	23.69
2004	25.74	33.18	45.71	14.37	39.33	24.04	63.61	11.27	46.99	20.89
2005	33.24	34.32	48.32	15.45	40.65	24.57	63.38	12.96	50.88	20.33
2006	31.52	32.30	67.69	8.58	44.09	22.53	56.87	16.84	52.40	19.30
2007	30.67	35.19	71.84	7.88	44.00	22.60	58.27	16.35	53.75	19.24
2008	26.97	34.81	67.71	9.81	44.05	21.62	45.66	21.75	48.35	21.38
2009	45.99	25.95	62.90	10.15	39.08	22.25	49.84	21.00	47.73	21.59
2010	26.62	37.71	63.14	10.80	44.61	22.29	40.81	24.68	46.18	22.83
2011	20.56	38.49	56.56	12.90	41.93	23.05	35.49	25.05	40.73	24.66
2012	46.84	27.55	66.93	9.78	37.47	25.81	32.38	26.51	44.22	24.20
2013	44.71	29.54	62.30	12.53	30.84	28.89	36.63	26.77	41.61	26.28
2014	24.80	43.22	65.00	11.48	33.92	30.68	29.60	24.43	40.08	26.95

Source Same as Fig. 4

with better quality of employment tends to have better distributional outcomes as compared to others.

This argument could be further substantiated with the analysis of profit share in gross value added. The analysis reveals that profit share is relatively low in export-driven employment industries and employment industries with export potential as compared to others. This reinforces our argument that export-driven industries create equitable growth as compared to export-oriented capital-intensive industries and domestic-oriented capital-intensive industries. Viewed from employment generation perspective and equity point of view, it is important to promote industries with export generation potential.

Table 8 Workers wage share in total wages in different categories of industry and the manufacturing sector

Year	Export-employment champions	Employment laggards and export champions	Employment champions and export laggards	Laggards in employment export	Total industry
1992	69.20	69.06	71.51	59.90	65.84
1993	66.72	62.51	68.05	57.79	63.33
1994	75.39	64.14	63.93	58.57	63.61
1995	74.48	58.85	63.25	57.29	62.95
1996	72.74	63.30	62.14	56.32	61.68
1997	70.64	59.61	62.64	56.01	61.48
1998	70.06	65.90	60.14	52.90	59.38
1999	70.09	55.89	58.23	53.63	58.48
2000	67.65	58.25	57.06	52.44	57.69
2001	68.06	53.78	58.15	50.91	56.71
2002	67.52	63.08	57.03	50.50	56.71
2003	66.37	64.46	51.86	51.97	55.04
2004	59.97	48.32	53.11	54.48	55.11
2005	60.77	50.91	54.87	49.58	53.73
2006	59.51	53.58	52.80	48.69	52.78
2007	57.58	54.05	51.86	46.03	51.21
2008	55.93	48.17	49.93	44.41	48.99
2009	47.57	48.53	54.65	45.35	49.81
2010	55.32	47.77	50.29	45.10	49.19
2011	56.04	46.08	48.68	47.49	49.07
2012	46.23	46.44	51.18	48.18	48.97
2013	45.98	47.61	51.38	46.95	48.73
2014	51.49	46.05	46.37	49.76	47.73

Source Same as Fig. 4

3.2.10 Analysis at the Disaggregate Level

From the perspective of a strategic approach towards locating industries for export and employment promotion, the analysis at the aggregate level is not adequately helpful. It is especially because, in each of the group identified, there is bound to be differences across industries therein. Therefore, in the present section, our focus shall be to locate specific industries in each group. Such identification is important for devising export-oriented employment promotion policies. In order to identify industries over the years and their movement from one category to another, we select three time points and compare the industries that remained in the same category over

Table 9 Distribution of industries

	Employment champions	Employment laggards
1990		
Export Champions	172, 173, 181, 191, 192, 223, 289, 319, 321, 332, 342, 343, 351, 369	151, 314
Export laggards	153, 154, 155, 160, 171, 201, 202, 221, 222, 261, 269, 273, 281, 292, 293, 315, 322, 331, 352, 361	152, 182, 210, 231, 232, 233, 242, 243, 251, 252, 271, 272, 291, 311, 312, 323, 341, 353, 359
2001		
Export champions	171, 172, 173, 181, 191, 192, 221, 289, 319, 332, 353	151, 331, 369, 370
Export laggards	154, 155, 160, 182, 201, 202, 210, 222, 223, 251, 252, 261, 269, 273, 281, 292, 293, 315, 321, 342, 343, 352, 361	152, 153, 231, 232, 233, 242, 243, 271, 272, 291, 311, 312, 314, 322, 323, 341, 351, 359
2014		
Export champions	172, 173, 181, 191, 192, 221, 289, 292, 319, 331, 351, 353	151, 232, 233, 243, 272, 293, 322, 332, 369
Export laggards	154, 155, 160, 171, 182, 201, 202, 210, 222, 223, 242, 251, 252, 261, 269, 273, 281, 291, 311, 315, 321, 342, 343, 352, 361	152, 153, 231, 271, 312, 314, 323, 341, 359

Note Due to space constraint, we report only NIC codes. The details of industry names corresponding to NIC is provided in the appendix to chapter

the years and industries that changed from one category to another. Identifying industries that changed from one category to another is also important as far as policy is concerned. Table 9 presents the mapping of industries based on their employment and export intensity. For our analysis, we shall begin with the first column that represents export and employment champions and employment champions and export laggards. The first category included industries known for India's comparative advantage like textiles products (171, 172, 173) and leather, fabricated metal products, electric and electronic components.

The export-employment champions industries are: Other textiles (172), Knitted and crocheted fabrics (173), Wearing apparel, except fur apparel (181), Tanning and dressing of leather (191), Footwear (192), Other fabricated metals (289), Special purpose machinery (292), Other electrical equipment (319), Medical appliances and instruments (331), Building and repair of ships and boats (351), Aircraft and spacecraft (353). Similarly, employment champions and export laggards are; other food products (154), Beverages (155), Tobacco (160), Spinning weaving textiles (171), Dressing and dying of fur (182), Sawmilling and planning (201), Wood products (202), Paper products (210), Printing (222), Recorded media, (223), Other chemicals (242), Rubber products (251), Plastic products (252), Glass products (261), Non-metallic products (269), Casting of metal (273), Structural metal products (281),

Electronic capital goods (291), Electric motors (311), Electric lamps (315), Electronic valves and components (321), Bodies for motor vehicles (342), Parts and accessories of motor vehicles (343), Railway locomotives (352) and Furniture (361). In what follows, we present the distribution of industries under each category and their corresponding trends in quality of employment generation, and their equity implications by looking at profit share, wage share and value addition.

3.3 Export-Employment Champions

We have presented the relative export and employment share of each industry in the category as well as total manufacturing industries (see Table 10). Though at the aggregate level, these industries indicate higher export and employment intensity than the total manufacturing sector, all the industries under each category may not contribute uniformly to employment and export generation. Given this plausible inter-industry variation, we identify champion industries based on their relative contribution to the category and presents the trends in quality of employment and other indicators, which assume importance from the perspective of distribution. For our analysis, champion industries considered are those with a contribution in either employment or export exceeding 10%. Given their higher performance within the group, their contribution towards overall manufacturing is also expected to be significant (Table 10). Using this approach, we identified six champion industries such as other textiles (172), Knitted and crocheted fabrics (173), Wearing apparel, except fur apparel (181), Other fabricated metals (289), Special purpose machinery (292), Aircraft and spacecraft (353), which contribute significantly in terms of exports and employment generation. All the above industries except the last three are considered as low-technology industries as per OECD classification. Hence, it could be inferred that for most of these industries in this group, export and employment is based on their static comparative advantage. Among the industries in this category, wearing apparel industry contributes to 24.41% of exports and 28.11% of employment. The trends in quality of employment of wearing apparel indicate that skilled worker intensity (15%) is lower than the group average (20%), indicating its ability to absorb a large amount of unskilled labour force. Similarly, the contract labour intensity is lower than the group average, which further indicates its potential to create quality jobs as opposed to many other industries where employment generation is primarily taking place through hiring contract workers. It is interesting to note that nearly 50% of the workers in wearing apparel industry are females (49%) which is double that of the group average. When it comes to distributional aspects of this industry, we find that its value addition and the share of wages in value addition is higher than the group average and the share of profits is much lower than the group average. Similar trends in quality of employment generation and distributional aspects could be found in manufacture of fabrics (173) and footwear (191) where we find the lowest contract intensity among all the industries in the category and female employment intensity is much higher than the group average. Not only the quality of employment is bet-

ter, but its performance in terms of value addition and the share of wages in value addition and the share of profits in value addition is also better as compared to other champion industries in this category.

The other industries that tend to generate employment with export are fabricated metals (289), special purpose machinery (292), aircraft, and spacecraft (353). These industries, according to OECD classification, are considered as high-tech or medium-tech industries on account of their higher R&D intensity, the potential for knowledge generation and innovation. Thus viewed, they have the potential to get benefited from the dynamic comparative advantage. However, their performance with respect to quality of employment and equity aspect is found to be not highly desirable. At the same time, it is pertinent to note that in case of industries like aircraft and spacecraft with high-skilled labour intensity, the contract labour intensity is relatively low and the share of value added is higher. More or less similar is the case with special purpose machinery. However, their performance with respect to share of wages in value added and female labour intensity is much to be desired.

3.4 Export Champions-Employment Laggards

This category, as discussed in the previous section, represents industries with low employment generation capacity as well as poor quality of employment. We have identified five out of 9 industries having either employment or export share more than 10% (Table 11). However, these industries together account for over 50% of India's manufacturing exports. The unique characteristics of industries in this group are that they belong to either medium or high-tech industries as per the OECD classification, the only exception being food processing industry which is a low-tech industry. While being technology intensive, we could identify five out of nine industries as having either employment or export share more than 10%. This points towards the potential of these industries to reap the dynamic comparative advantage. However, we find that three out of these five industries show lower skilled labour intensity and only one out of these five industries show contract intensity lower than the group average as well as the total manufacturing average. Petroleum products industry which contributes to 41 of exports in the group and 20% of total manufacturing exports employs 64% of contract workers, which is nearly double that of manufacturing average. Correspondingly, female participation in this industry is almost negligible. Among all other industries, petroleum industry accounts for highest proportion of profit (84.56%), which gets reflected in their lowest wage share (1.84%). On the contrary, the contract labour intensity in other manufacturing industry (369), which accounts for 25% of relative exports and 22% of relative employment share, is only about 20% which is lower than the group average as well as total manufacturing average. Not only the contract intensity low, but female employment intensity in other manufacturing is higher than the group average and total manufacturing average. Now coming to employment contribution, we have basic chemicals (26%) followed by food processing, basic metals and other manufacturing.

Table 10 Distribution of disaggregate industries employment-export champions in 2014

NIC	Export share	Employment share	Skilled intensity	Contraction	FEI	Share of GVA	Wage share	Share of profits GVA
Group Average	20.1	19.21	19.71	21.03	26.95	21.84	43.22	24.8
Other textiles (172)	12.98 (2.6)	12.03 (2.31)	17.25	21.82	15.83	19.89	21.84	26.16
Knitted and crocheted fabrics (173)	5.71 (1.14)	10.79 (2.07)	12.69	7.84	37.96	19.51	35.84	16.75
Wearing apparel, except fur apparel (181)	24.41 (4.9)	28.11 (5.4)	15.25	11.85	48.83	26.14	32.75	16.66
Tanning and dressing of leather (191)	4.85 (0.97)	3.85 (0.73)	17.56	28.78	18.60	15.09	29.04	−34.28
Footwear (192)	5.04 (1.01)	9.03 (1.73)	13.69	17.84	37.67	19.43	30.21	19.96
Other fabricated metals (289)	11.68 (2.34)	15.79 (3.03)	21.83	34.55	4.54	22.40	17.02	36.90
Special purpose machinery (292)	11.87 (2.38)	12.34 (2.37)	33.90	30.23	2.01	22.60	11.94	35.40
Other electrical equipment (319)	1.89 (0.38)	2.41 (0.46)	27.36	39.31	7.35	18.95	15.79	29.30
Medical appliances and instruments (331)	0.64 (0.12)	4.1 (0.78)	33.70	28.64	16.71	34.17	8.57	44.81
Building and repair of ships and boats (351)	7.68 (1.54)	0.97 (0.18)	20.45	74.50	0.29	7.29	86.29	−681.78
Aircraft and spacecraft (353)	12.7 (2.55)	0.53 (0.1)	34.98	19.87	3.17	40.19	12.15	45.33

Source Same as Fig. 4
Note FEI - Female Employment Intensity

Table 11 Distribution of disaggregate industries employment laggard-export champions in 2014

NIC	Export share	Employment share	Skilled intensity	Contraction	Fei	Share of GVA	Wage share	Share of profits GVA
Group average	50.51	8.22	25.16	38.82	9.16	13.52	11.48	65
Food processing (151)	9.28 (4.68)	23.04 (1.89)	22.48	38.62	17.81	5.81	14.46	32.83
Petroleum products (232)	41.4 (20.91)	8.65 (0.71)	27.22	63.66	1.26	14.51	1.84	84.56
Basic chemicals (233)	11.26 (5.69)	26.16 (2.15)	30.22	46.92	1.76	13.94	9.40	35.00
Man-made fibres (243)	1.16 (0.58)	2.32 (0.19)	21.46	26.83	2.42	19.71	9.55	44.52
Basic metals (272)	6.03 (3.04)	9.92 (0.81)	24.40	42.84	2.06	18.86	5.83	58.79
Domestic appliances (293)	3.41 (1.72)	4.06 (0.33)	24.17	38.75	9.05	20.40	6.96	63.71
Electronic components (322)	0.92 (0.46)	2.81 (0.23)	32.10	52.34	7.37	18.72	10.71	31.80
Optical instruments (332)	1.35 (0.68)	0.3 (0.02)	47.41	12.53	20.44	29.46	10.95	40.51
Other manufacturing (369)	25.15 (12.7)	22.69 (1.86)	21.00	20.38	14.63	8.08	16.56	33.70

Source Same as Fig. 4

However, in all these industries, contract labour intensity is higher than the industry average yet the wage share in value added is higher than the group average. In general, the available evidence tends to suggest while these industries have the potential to be internationally competitive based on their science, technology and innovation potential through intensified product, process and other innovations, their current comparative advantage depends on low labour cost advantage. This strategy need not be sustainable in the long-run and hence, the need for a change in the strategy cannot be overemphasized. At the same time, evidence also suggests that there is the need for appropriate institutional interventions to ensure that the higher value addition arising out of their innovation capability is shared in such a way that labour is not deprived.

3.4.1 Employment Champions-Export Laggards

We find the maximum number of industries under this category indicating a huge employment potential sans export competitiveness. With respect to exports, we observed that there are three industries whose relative export share is more than 10% of group average. These industries include; spinning and weaving of textiles (171), other chemicals (242) and automobile components (343). With respect to employment share, we have other food products (154) and non-metallic products (269). To begin with, we note that there are two industries wherein export share and employment share are higher than 10%. These are spinning, weaving, and other chemicals (242). When it comes to quality of employment and distributional aspects of industries with high export and employment share, we find significant differences. Spinning and weaving with low skilled labour intensity is found having, low contract labour intensity, high female labour intensity, high wage share in value added and low profit share. These characteristics are highly desirable from the perspective of equity. This tends to suggest that spinning and weaving of textiles, while harnessing static comparative advantage is able to ensure higher export performance along with higher quantity and quality of employment. On the contrary, in case of other chemicals, its higher export performance is associated with high-skilled labour intensity along with high contract labour intensity, lower share of wages in value added and higher profits.

It is further evident that this group comprises of high-tech, medium tech and low-tech industries and hence the industries with potential for dynamic and static comparative advantage. Therefore, the strategic approach to this category of industries shall comprise of both export promotion and innovation promotion along with institutional interventions to ensure equitable distribution (Tables 12 and 13).

3.4.2 Employment-Export Laggards

As already discussed in the previous section, employment-export laggards not only create low employment but also generate poor quality of employment. Following

Table 12 Distribution of disaggregate industries employment champion-export laggard in 2014

NIC	Export share	Employment share	Skilled intensity	Contraction	Fei	Share of GVA	Wage share	Share of profits GVA
Group average	18.05	58.81	22.07	37.66	11.48	21.07	30.68	33.92
Other food products (154)	4.73 (0.85)	10.65 (6.26)	20.13	18.11	30.71	14.22	19.14	17.85
Beverages (155)	0.71 (0.12)	2.06 (1.21)	23.26	51.57	6.48	21.75	10.08	43.97
Tobacco (160)	0.5 (0.09)	5.64 (3.31)	4.39	72.83	16.94	38.18	11.37	74.08
Spinning weaving textiles (171)	18.14 (3.27)	15.86 (9.32)	15.25	12.69	17.11	14.70	24.92	1.69
Dressing and dying of fur (182)	0 (0)	0.01 (0)	12.79	44.50	15.93	28.25	36.75	31.84
Saw milling and planning (201)	0.06 (0.01)	0.09 (0.05)	29.69	8.05	10.51	10.98	24.44	32.06
Wood products (202)	0.56 (0.1)	1 (0.59)	23.68	25.60	6.08	18.55	16.16	28.89
Paper products (210)	1.92 (0.34)	3.1 (1.82)	21.83	27.67	8.24	15.95	16.86	15.65
Printing (222)	0.28 (0.05)	2.18 (1.28)	36.54	20.26	7.83	26.68	13.80	26.52
Recorded media (223)	0 (0)	0.02 (0.01)	37.23	29.33	10.12	33.90	17.93	40.14
Other chemicals (242)	36.98 (6.67)	13.04 (7.67)	33.91	42.43	13.03	28.11	7.29	56.03
Rubber products (251)	5.08 (0.91)	2.39 (1.4)	20.61	33.66	4.52	21.81	15.76	46.15

(continued)

Table 12 (continued)

NIC	Export share	Employment share	Skilled intensity	Contraction	Fei	Share of GVA	Wage share	Share of profits GVA
Plastic products (252)	5.08 (0.91)	5.28 (3.11)	23.79	33.09	7.58	17.66	12.22	35.94
Glass products (261)	1.3 (0.23)	0.87 (0.51)	19.05	42.12	2.63	21.49	17.20	−2.12
Non-metallic products (269)	4.79 (0.86)	11.94 (7.02)	17.94	61.68	4.27	25.76	12.82	31.77
Casting of metal (273)	0 (0)	2.94 (1.73)	21.92	44.25	1.24	14.66	20.52	7.07
Structural metal products (281)	2.63 (0.47)	2.88 (1.69)	25.48	49.29	0.78	18.49	19.58	24.27
Electronic capital goods (291)	0.75 (0.13)	5.36 (3.15)	32.16	34.92	1.73	24.70	11.84	34.81
Electric motors (311)	3.77 (0.68)	2.67 (1.57)	29.58	34.09	6.52	20.47	17.87	29.14
Electric lamps (315)	0.48 (0.08)	0.61 (0.36)	20.11	45.44	12.76	17.91	29.43	9.63
Electronic valves and components (321)	1.3 (0.23)	1.02 (0.6)	26.17	30.09	17.27	21.28	19.71	21.36
Bodies for motor vehicles (342)	0.13 (0.02)	0.75 (0.44)	24.64	50.99	0.83	20.04	22.54	0.88
Parts and accessories of motor vehicles (343)	9.14 (1.65)	8.32 (4.89)	20.96	48.54	3.73	19.49	19.32	21.16
Railway locomotives (352)	0.23 (0.04)	0.43 (0.25)	23.39	41.37	0.74	19.18	15.63	35.78
Furniture (361)	1.31 (0.23)	0.73 (0.43)	28.44	26.50	3.92	21.13	15.65	25.77

Source Same as Fig. 4

Table 13 Distribution of disaggregate industries employment-export laggards in 2014

NIC	Export share	Employment share	Skilled intensity	Contraction	Fei	Share of GVA	Wage share	Share of profits GVA
Group average	11.33	13.76	23.02	43.76	3.29	13.07	24.43	29.6
Dairy products (152)	1.22 (0.13)	7.91 (1.08)	25.45	43.93	4.22	7.16	16.54	31.30
Grain mil products (153)	25.43 (2.88)	21.52 (2.96)	26.62	37.99	7.79	7.36	13.00	21.00
Coke even products (231)	0.06 (0)	1.57 (0.21)	21.32	33.62	2.78	14.49	20.15	25.86
Basic iron and steel (271)	34.53 (3.91)	36.71 (5.05)	20.30	47.81	0.75	13.61	13.96	10.94
Electricity and control apparatus (312)	6.86 (0.77)	5.11 (0.7)	21.36	45.91	7.07	11.15	12.59	28.03
Accumulators, primary cells and batteries (314)	0.62 (0.07)	2.82 (0.38)	18.50	40.47	9.92	19.29	11.84	41.11
TV and radio receivers (323)	1.91 (0.21)	1.44 (0.19)	30.05	50.86	6.74	14.15	6.15	30.66
Motor vehicles (341)	22.34 (2.53)	10.3 (1.41)	27.80	34.49	0.80	17.43	7.76	52.49
Transport equipment (359)	6.99 (0.79)	12.57 (1.72)	20.47	48.22	1.64	18.72	11.80	56.10

Source Same as Fig. 4

the similar approach to identify the industries, we have identified four out of nine industries whose relative export and employment share is more than 10%. Among others, basic iron and steel industry accounts for 34.53% of exports and 36.71% of employment under this category. Not only the employment-generating capacity is low but the contract intensity is higher (47.81%) than the group average. Correspondingly, the share of wages in value added in basic iron and steel industry is lower than the group average. Another industry, Grain mill products, accounts for 25.43% of exports and 21.52% of employment shows lower contract intensity and female employment intensity as compared to the group average. However, value addition is one of the lowest in this industry as compared to other industries. The possible exceptions are transport and motor vehicle equipment which are high-tech industries and account for part of the export and employment share while having significant value addition capacity as compared to others in the group. Nonetheless, the quality of employment in this group is generally very low. Hence, there appears to be the need for strategic interventions help building their dynamic comparative advantage along with institutional to ensure fair distribution.

4 Summary and Conclusion

There is a growing consensus that while the strategy of growth under globalization has enabled many of the developing countries to enter the high growth road, the returns to such growth has not been manifested in shared prosperity on account of growing inequalities at different levels. One of the underlying factors, often cited, for this undesirable outcome, which necessitated 'addressing inequality' as one of the core concerns of sustainable development goals, is the observed decline in the share of labour in national income. In a context of trade and investment-driven growth under globalization, international competition makes domestic workers more susceptible and therefore lowers their bargaining power. Given the failure of market-led model (as proposed by Washington consensus) in delivering equitable developmental outcomes, there is a growing concern towards reconfiguring a growth and development strategy, which is, equitable and sustainable. In this context, facilitating inclusive employment opportunities have become a key strategy to increase economic growth that is inclusive and sustainable. Highlighting the relevance of such a strategy, the recent economic survey (2018–19), GoI (2018) called for building a manufacturing growth strategy with a focus on creating inclusive employment opportunities. Given the potential of manufacturing exports in generating employment opportunities, high

hopes have been pegged on to exports as a means of generating employment driven inclusive growth. However, notwithstanding the potential of exports for job creation, the issue of much significance in the context of flexible-deregulated labour markets is the quality of employment generation, as it matters in inequality and workers welfare. Hence, it is important to locate sectors/industries that are competitive in the international market and contribute to employment generation in terms of both quality and quality.

As opposed to the existing literature on trade and employment, which focussed mainly on the quantity of employment at the aggregate level, the present study focuses on both the quantity and quality of employment generated. Further, we argue that while the aggregate analysis offers useful insights regarding the causal relationship between trade and employment, from a policy perspective, it fails to locate the specific industries that are crucial for export competitiveness and employment generation. Hence, 'one size fits all' policy based on the aggregate analysis is likely to be incompatible with inclusive employment opportunities and calls for appropriate policies specific to the industry's characteristics. Using industry's employment intensity and export intensity relative to total manufacturing, this study identifies four industrial categories; (1) Export-employment champions, (2) Export champions-employment laggards, (3) Export laggards-employment champions and (4) Export-employment laggards. From the policy point of view, such an identification strategy enables us to locate industries with employment potential with or without export potential, which is crucial for devising appropriate export and employment promotion policies. Having identified four categories, we have analysed the nature and quality of employment generated along with its implications on equity. Constrained by the data availability on various aspects of quality of labour as identified in United Nations Economic Commission for Europe (2015), we have focussed on three aspects: (1) indirect employment (contract labour), and (2) female employment and (3) skilled employment. We have focussed on the share of wages and profits in value added to shed light on equity implications of quality of labour in four identified industrial categories.

The empirical evidence based on our aggregate analysis with respect to four industrial categories reveal that export-employment champions and export laggards-employment champions contribute to more than 60% of total employment generated in the manufacturing sector with an increasing trend over the years. However, their contribution to exports has been declining over the years to reach 38% in the terminal year. When it comes to quality of employment generation, we found considerable variation across four categories of industries. There has been an increasing informalization of work, which is evident through threefold increase in contract labour intensity at the aggregate level as well as in all the four categories. However, the extent of informalization is much lower in export-employment champions as compared to all the other three categories and aggregate manufacturing. Similarly, the share of female employment, though increased until 2004, shows a declining trend in all four

categories. The share of female employment is the highest in export-employment champions (where their share is double that of manufacturing average) and export champions-employment laggards as compared to the other two categories. While the share of skilled employment has mostly remained the same during the period under consideration, its share is relatively low in export-employment champions and export champions-employment laggards. From the aggregate analysis, it appears industries with higher female employment has lower contract intensity indicating a trade-off between contract labour and female labour. The analysis of trends and patterns of wage share and profit share in value added to reflect on equity implications indicate an increase in profit share and a decrease in wage share with a mild trend reversal in the recent past. The observed trend reversal, however, has been on account of the increase in the share of professional managerial staff in the wage bill implying that workers are not really the beneficiaries. Among the four categories, while profit share is the highest and wage share is the lowest in export champions-employment laggards, wage is highest in export-employment champions and profit share is lowest in export laggards and employment champions. Overall, our analysis reveals that employment-export champions, export laggards-employment champions create better quality of employment as compared to total manufacturing as well as other two categories. Further, our analysis of wages and profits in value added reinforces the fact that industries, which create a better quality of employment, are the ones with more equitable distribution and highlights the role of quality of employment in equitable distribution of income.

The disaggregate analysis enabled us to locate the specific industries with potential for export and employment both in terms of quantity and quality along with the nature of their comparative advantage. It is observed that bulk of the employment generated by the export-employment champions are accounted by those industries that are conventionally known for static comparative advantages like textiles, garments, footwear and others. We also find other industries like food products, which are known to be highly employment intensive, appear to be in the group employment champion-export laggards. To the extent that these industries also generate high equality employment, any policy intervention to enhance their international competitiveness is likely to contribute towards more inclusive/equitable developmental outcomes.

From a long-term development perspective, a large economy like India has to adopt a strategy of walking on two legs reaping both static and dynamic comparative advantage. It is rather salutary note that industries in the second category, (export champions-employment laggards) which accounted for over 50% of total manufacturing exports in 2014–15, are either medium or high-tech industries. We also find the presence of a few medium and high-tech industries in the other two categories—employment-export champions and employment champions-export laggards. However, the available evidence tends to suggest that most of these industries that are presumably reaping dynamic comparative advantage because of their high technological base are showing poor performance with respect to the quality of employment

that they generate. Though these industries have the potential for building dynamic comparative advantage based on their deep science, technology and knowledge base, the current strategy appears to involve building competitiveness based on low labour cost advantage. Hence, we make the case for appropriate policy interventions to help building dynamic comparative advantage based on product, process and other innovations. It also appears that there is the need for appropriate institutional interventions to ensure that innovation induced value addition and depth of manufacturing contributes towards the generation of high-quality employment such that international competitiveness and growth leads to shared prosperity. The industry/firm oriented strategic interventions which we call for could be implemented without the risk of rent-seeking if we effectively harness our capabilities in information and communication technologies.

Appendix

See Table 14.

Table 14 Annual average growth rates of output, employment and trade

	1996–03	2004–14	1996–14
Output growth	8.39	10.05	9.26
NVA growth	5.78	8.99	7.47
Capital stock growth	4.93	11.12	8.19
Export growth	10.60	14.75	12.78
Import growth	10.76	14.04	12.48
Total employment growth	−0.56	5.01	2.37
Unskilled employment growth	−0.19	4.96	2.52
Direct workers	−1.96	3.60	0.97
Contract workers	8.15	8.14	8.14
Male workers	−3.04	3.59	0.45
Female workers	5.22	3.92	4.54

NIC	Description	NIC	Description
151	Production, processing and preservation of meat, fish, fruit vegetables, oils and fats	269	Manufacture of non-metallic mineral products NEC
152	Manufacture of dairy product [production of raw milk is classified in class 0121]	271	Manufacture of basic iron and steel
153	Manufacture of grain mill products, starches and starch products and prepared animal feeds	272	Manufacture of basic precious and non-ferrous metals
154	Manufacture of other food products	273	Casting of metals [this group includes casting finished or semi-finished products producing a variety of goods, all characteristic
155	Manufacture of beverages	281	Manufacture of structural metal products, tanks, reservoirs and steam generators
160	Manufacture of tobacco products [tobacco-related products are also included while preliminary processing of tobacco leaves is class	289	Manufacture of other fabricated metal products; metalworking service activities
171	Spinning, weaving and finishing of textiles	291	00—Manufacture of general purpose machinery + manufacture of office, accounting and computing machinery.
172	Manufacture of other textiles	292	Manufacture of special purpose machinery
173	Manufacture of knitted and crocheted fabrics and articles	293	Manufacture of domestic appliances, NEC
181	Manufacture of wearing apparel, except fur apparel [this class includes manufacture of wearing apparel made of material not made in]	311	Manufacture of electric motors, generators and transformers
182	Dressing and dyeing of fur; manufacture of articles of fur	312	Manufacture of electricity distribution and control apparatus [electrical apparatus for switching or protecting electrical circ]
191	Tanning and dressing of leather, manufacture of luggage handbags, saddlery and harness	314	Manufacture of accumulators, primary cells and primary batteries
192	Manufacture of footwear	315	Manufacture of electric lamps and lighting equipment
201	Sawmilling and planing of wood	319	Manufacture of NEC

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NIC	Description	NIC	Description
202	Manufacture of products of wood, cork, straw and plaiting materials	321	Manufacture of electronic valves and tubes and other electronic components
210	Manufacture of paper and paper product	322	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy
221	Publishing [this group includes publishing whether or not connected with printing]. Publishing involves financial, technical, artist	323	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus, and associated goods
222	Printing and service activities related to printing	331	33—Manufacture of medical appliances and instruments and appliances for measuring, checking, testing, navigating and other purposes
223	Reproduction of recorded media [this class includes the reproduction of records, audio, video and computer tapes from master copies, re]	332	Manufacture of optical instruments and photographic equipment
231	Manufacture of coke oven products [this class includes the operation of coke ovens chiefly for the production of coke or semi –coke]	341	Manufacture of motor vehicles
232	Manufacture of refined petroleum products	342	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers
241	33—Manufacture of basic chemicals + processing of nuclear fuel	343	Manufacture of parts and accessories for motor vehicles and their engines [brakes, gearboxes, axles, road wheels, suspension shock]
242	Manufacture of other chemical products	351	Building and repair of ships and boats
243	Manufacture of man-made fibres [this class includes manufacture of artificial or synthetic filament and non-filament fibres].	352	Manufacture of railway and tramway locomotives and rolling stock
251	Manufacture of rubber products	353	Manufacture of aircraft and spacecraft
252	Manufacture of plastic products	359	Manufacture of transport equipment NEC
261	Manufacture of glass and glass products	361	Manufacture of furniture
		369	Manufacturing NEC

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