Gendered Labor Market Dynamics in Post-Reform India: A Structural Decomposition Analysis of Manufacturing and Service Sectors, 1993-2019

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I. Introduction

The dominant narrative in international trade and development economics has maintained that economic liberalization and export orientation provide better employment opportunities, higher earnings, and improved living conditions for women in developing countries. However, recent feminist and gender economics literature has highlighted a puzzling trend: declining female labor force participation in South Asian countries over recent decades despite increasing global integration and economic growth. While existing scholarship often attributes this decline to supply-side and socio-cultural factors—such as extended education, marriage, and traditional gender norms—this study examines demand-side labor market factors and sectoral employment patterns in post-reform India.

The South Asian developing economy context is particularly relevant when considering the cultural patriarchal background that assigns non-market household and childcare responsibilities primarily to women, who already face disadvantages in terms of access to resources from birth. Research has documented an anti-woman bias exists in labor demand in developing countries as manufacturing becomes increasingly capital-intensive (Tejani & Milberg, 2016). This phenomenon – women losing access to "good" jobs in high-technology and medium-high technology sectors – correlates with industrial upgrading in manufacturing within open, globally integrated developing economies. Feminist economists have critiqued the gendered consequences of capital-intensive industrial growth, particularly in the context of structural transformation in developing economies. A central concern is how capital accumulation and technological upgrading displace women from employment, especially in labor-intensive sectors where they predominantly work.

This critique aligns with the work of Ghosh (2002, 2013), who warns against the blind celebration of productivity growth without regard to its distributional and gendered consequences. Ghosh emphasizes that capital-biased technological change frequently leads to jobless growth and disproportionately affects women's employment, particularly in informal economies where women form the majority of the workforce. Similarly, Seguino (2000, 2010) contends that macroeconomic and trade policies rooted in neoliberal paradigms often reinforce gender hierarchies by failing to account for how investment patterns and sectoral priorities marginalize women's labor. Expansion of the traded sector and foreign capital flows may, directly or indirectly, provide additional employment

opportunities to women, with low opportunity cost (adhering to Heckscher-Ohlin model in the trade literature). Higher capital inflows and lower trade protection, however, may potentially lead to gender job segregation and concentration of women's employment in less productive low-wage industries. While accounting for deeply rooted cultural patriarchal background, this study analyzes employment and productivity patterns through a feminist lens, examining feminization patterns across disaggregated manufacturing sectors and service sectors influenced by increasing international integration of trade and capital markets.

Structural decomposition analysis of employment examines changes in women's share of total manufacturing by dividing them into two components: the within-industry effect and the reallocation effect. By emphasizing the role of employment shifts across manufacturing sectors relative to changes within industry, one can better understand the sources and patterns behind changes in women's employment shares. Rising female labor force participation in specific industries may reflect the growing use of flexible labor or the persistence of gender bias in hiring. If reallocation effects dominate the employment patterns of feminizing and defeminizing industries, this would suggest the need for a closer analysis of gender segregation across sectors. While gender segregation is a necessary precondition for reallocation effects, within-industry changes may result from firms' decisions about whom to retain or hire. Seguino and Braunstein (2018) propose several hypotheses for such decisions, including gender-based stereotypes about job qualifications, concerns about productivity losses in male-dominated jobs when hiring women, the use of occupational segregation to weaken worker bargaining power, and the gains from paying efficiency wages primarily to men. Patterns of gender segregation could be attributed to 'job hoarding,' in which access to better-paid jobs is restricted to men. Declines in women's employment relative to total employment in key industries – shaped by policy and firm-level hiring decisions – should be examined case by case. Employer bias against women in the context of technological upgrading has been widely documented (Tejani & Milberg, 2016; Tejani & Kucera 2021; Saracoglu, Memis, Voyvoda and Kizilirmak, 2018 etc.)

To simplify the research question, this chapter focuses on India's trade liberalization as a benchmark, with aim of extending the study to include the specific contexts and historical trajectories of liberalization episodes in other South Asian economies in future work. The motivation of this study is to capture the gendered labor market implications of the IMF-imposed trade liberalization measures implemented in the early 1990s and the subsequent integration of the Indian economy into global markets amid broader trends of globalization.

The rest of the chapter is organized as follows. Section II provides a historical backdrop to the trade liberalization measures implemented through five-year plans in India during the era of early 1990s. Section III briefly reviews the important theoretical and empirical works in the literature that have contributed to the idea of feminization of the manufacturing labor force as consequences of international trade. The literature in the intersection areas of international trade and gender also explores the questions such as how gender gap, gender bargaining power and gender job segregation perpetuates in the context of trade liberalization and increased openness of capital markets with FDI flowing in industrializing emerging economies. Section IV presents the data and methodology used

for the analysis in this study. Section V discusses the results and their interpretations in the context of the specific case study of India and thereby motivates the idea of this study. Section VI concludes.

II. Historical Backdrop of India's Trade Liberalization

India's approach towards external capital controls has shifted enormously according to IMF prescription and external imposition of liberalization and internalization of trade and capital flows in the face of widening current account deficit during the 1980s. India resorted to external commercial loans including short-term borrowings and deposits from non-resident Indians. The reform included transition to a market-oriented exchange rate regime, relaxing trade restrictions, move towards current account convertibility and opening-up of the capital account.

India's trade liberalization and relaxation of external capital controls can be understood through three distinguished phases primarily into three phases – In the first phase starting from the post-independence era up till the early 1980s, India's external flows were restricted to multilateral and bilateral concession finance. In the context of widening current account deficit during the 1980s, India resorted to external commercial loans including short-term borrowings and deposits from non-resident Indians. Until the early 1990s, India had a system of very strong capital controls. The third phase was symbolic in terms of the balance of payments crisis of 1991 and the liberalization reform process. The reform included transition to market-oriented exchange rate regime, relaxing trade restrictions, move towards current account convertibility and opening-up of the capital account. There was a compositional shift away from debt to non-debt creating flows. (Mohan, 2008)

Post-independence since 1947 India started with a regime of national self- sufficiency, import substitution, government planning, authorization and excessive trade regulations including high nominal tariffs and non-tariff trade barrier and complex import licensing system. Until the 1980s, there were periodic attempts at market-oriented reform and policy responses consisting of exchange rate depreciation and easing restrictions on foreign capital inflows following balance of payments pressures. Their controls had little impact on foreign capital inflows to India. Although trade policy remained restrictive, India set out on a path of market reforms towards liberalizing trade flows through easing import and industrial licenses in the aftermath of the Latin American debt crisis in the 1980s. There existed concurrent macroeconomic imbalances in the Indian economy, further stimulated by sudden oil price shocks due to the Gulf War, drop in remittances from Indian workers in the Middle East, slackened demand of importing trading partners and political uncertainty.

All these factors presented themselves altogether in the form of low investor confidence portrayed through large capital outflow and huge fiscal and balance of payments deficits for India. The Government of India embarked on a path of radical changes in terms of liberalizing India's trade policy to help mitigate its external payments issues with the help of IMF's financial support conditional on macroeconomic stabilization and structural reforms. In the aftermath of the balance of payments crisis of 1991, India also initiated easing capital controls including openness towards both foreign direct investment and foreign portfolio investment. The main target of the liberalization measures implemented in the 1992-97 8^{th} five-year plan was to reduce government expenditure (8.3% of GDP

to 3% of GDP) and ensure foreign investment to stabilize the economy. The 1991 reformation canceled import licenses on all intermediate and capital goods. But consumer goods remained under licensing. During this time, the tariff rate was raised substantially and according to WTO at this time the highest tariff rate stood at 35.5%. The first step towards the liberalization of trade was abolishing import licensing on machinery and raw materials. Abolishing the license on consumer goods in 2001, import tariffs became the main protective instrument. Tariff reform also focused on a gradual compression of the top tariff rates, with simultaneous rationalization of the tariff structure via a reduction in the number of tariff bands. A depreciated exchange rate was maintained to improve export competitiveness, and better access to foreign exchange for exporting was introduced. The dual exchange rate was unified, current accounting convertibility commenced in 1993, and India has moved towards more market-determined exchange rates since.

III. Literature Review

The literature on this topic of enquiry includes several prominent works focusing on gender-specific patterns and outcomes linked with rapidly changing globally integrated production chains or global value chains. Some notable pioneers of this strand of work include analysis of the rising rates of women's employment globally and linked it with changing patterns of international production in industrializing and semi-industrialized countries (Standing 1999, 1989 ; Catagay and Ozler, 1995). In the post-war era from 1970s marked by free market operations, labor market flexibilization and gradual opening of developing economies to globalization and international trade in the wake of neoliberal era had significant consequences on women's employment patterns. Seguino (2000) observed an inverse relationship between gender inequality and economic growth for semi-industrialized export-oriented countries with abundant female labor employed in the export sector during the period 1975-95. Her work further emphasized the fact that export-oriented Foreign Direct Investment results in women employees having less bargaining power in foreign-invested firms if capital is more mobile in industries that primarily employ women and eventually put downward pressure on gender-wage ratio. These findings contrast with the positive relationship observed in the traditional empirical literature between gender equality and economic growth. In a recent cross-country panel-based empirical study, Seguino and Braunstein (2018) assessed and identified two major contributors to gender job segregation — the rising capital-labor ratio and the ratio of female-male labor force participation rates. Global and macroeconomic conditions and policies influence the process by intensifying competition for 'good' jobs and weakening labor bargaining power. Their work emphasizes on the undesirable consequences of gender job-segregation frequent with women being concentrated in low-paying bad-jobs.

Earlier studies have primarily associated globalization and increased trade openness in developing countries with "feminization of employment". Since developing economies mostly specialized in low-cost, labor-intensive manufacturing in the global division of labor, the outward orientation towards global markets stimulated employment mainly in labor-intensive sectors (Joekes 1999; Seguino 2000). As economies transition from semi-industrialized to a more capital-intensive and technologically advanced stage of industrialization, labor shedding in export-oriented industries may decrease

women's share of employment as some jobs disappear and as new ones are identified as "technical" jobs or "men's" jobs (Berik 2000; Braunstein 2012; Tejani and Milberg 2016). Kucera and Milberg (2000) measure the degree of gender bias in the employment effects of the expansion of international trade for ten OECD countries. Focusing on trade with developing countries, the authors found that in most cases gender bias did exist. North-South trade of manufactures has in many industrialized countries reduced female employment relatively more than male employment. The gender bias varied considerably across countries but was nonexistent in some. The results appear to hinge on the issue of how well a country's Textiles, Apparel, Leather and Leather Goods industry responded to foreign competition. Those with a disproportionately large drop in female manufacturing employment are those countries that saw the worst trade performance in this industry.

Tejani and Milberg (2016), in their study on manufacturing employment in developing Asia, demonstrate how capital-deepening and increased use of automation have led to a process of "defeminization" in manufacturing, reversing earlier trends of feminization associated with export-oriented industrialization. They argue that rising capital intensity, often lauded as a marker of productivity gains, systematically excludes women due to gendered occupational segregation and their overrepresentation in low-skill, labor-intensive roles. Remarkable feminization trends have been observed in labor-intensive, export-oriented assembly and manufacturing sectors. Export orientation in these industrializing or semi-industrialized countries takes place not only through the exports of traditional labor-intensive sectors such as textiles, apparel, leather products, and food processing but also through nontraditional exports such as electronics and automobiles, production of which heavily relies on assembly, a labor-intensive activity. Feminization of the manufacturing sector helps export-led manufacturing expansion by keeping wage costs in these sectors low whereas feminization of foreign exchange earnings helps to keep the exchange rate of the economy devalued. A pioneering study by Tejani and Milberg (2016) explores feminization trends in some countries since the mid-1980s focusing on Southeast Asia and Latin America. The study observes that export growth in developing countries is associated with feminization in some countries and defeminization in others. The study concludes that an anti-female bias exists resulting in shifts in labor demand such that manufacturing sector becomes increasingly more capital intensive. Some plausible reasons explaining anti-female bias have been documented by scholars, such as, occupational segregation and gender norms due to women being excluded from higher paying technical roles because of biases about physical strength, technological competence or assumptions on lower returns from career breaks or caregiving responsibilities (Seguino, 2000); technological bias in labor substitutions where technological upgrading often replaces labor-intensive processes where women are overrepresented (Tejani and Milberg, 2016), macroeconomic, trade and industrial policy biases (Ghosh, 2002; Ghosh, 2013 & Seguino, 2010) towards prioritizing export growth and high-productivity sectors and invisibility of reproductive and informal labor (Elson & Katagay, 2000); and finally structural exclusion from formal labor markets (Kabeer, 2008).

Further, Tejani and Kucera (2021) examine gendered employment implications of structural transformation and technological upgrading in manufacturing sector to untangle some of the trends from their earlier study. Saracoglu, Memis, Voyvoda and Kizilirmak (2018) finds consistent patterns

in their study which investigates the feminization and defeminization trends in manufacturing employment in thirty countries from 1995 to 2011. Their findings highlight that, in the Global South, negative gender bias effects of trade changes are found particularly in high-technology industries. This line of enquiry is extremely interesting and consequential in today's global trade pervaded with fragmented production processes, global value chains and industrial upgrading.

The connection between export-orientation of economies with defeminization needs to be further explored in the light of neoliberal policies implemented in South Asian semi-industrialized and transitioning developing economy contexts. Intriguing patterns have been observed in terms of declining female labor force participation (FLFP) in some South Asian countries, such as, such as- India, Bangladesh etc. in recent years before-pandemic. Prominent literature in the Indian context explores these patterns through micro-lens and policy implications suggesting a few supply-side factors that might be impacting FLFP. Some of these factors are motherhood/child penalty, low declining demand for female labor, women dropping out of labor force as their families get richer in the growing economy context, education and household income levels explaining married women's low FLFP. Further sociocultural factors contribute to low female labor force participation in paid work, such as, sexual violence and fears of safety, conservative and traditional cultural values, unavailability of adequate work compatible with household duties, family structure, education level and employment preferences (Afridi et al. 2018; Afridi et al., 2020; Borker, 2017; Chakraborty et al., 2018; Chakraborty and Lohawala ; Desai, 2017; Desai and Joshi, 2019; Deshpande & Singh, 2021; Deshpande, 2019; Deshpande & Kabeer, 2021; and others).

IV. Data and Methodology

Figures 1 and 2 are created using data on gendered sectoral employment composition and growth rates from International Labour Organization (ILO) Modelled Statistics for India for years 1991-2022.[1] Since liberalization measures were first implemented in the 8th five-year plan in 1992, the data presented here captures the post-liberalization reform period. [2]

Figure 3 depicts employment shares of women in various sectors derived from the periodic labor force survey data for years 1987-88, 2011-12 and 2017-18.

Historically, the employment of women within agriculture in India has been predominant since post-independence five-year plans until 8th plan (1992-97) when trade liberalization was first implemented.

[1] We focus our decomposition analysis on the years prior to 2019 to avoid the effects of the Covid-19 pandemic, though the statistical descriptions include those years.

[2] It is important to note here that all the major data sources used in this study uses available data on male and female employment for the purpose gender disaggregated analysis and understand consequences of globalization and opening up of trade and capital markets on women's labor market outcomes. Any other gender identity or caste classifications are not available in these datasets and hence outside the immediate scope of study in this chapter.

Figures 1.1 and 1.2 show decline in agricultural employment for both men and women over time, starting from the 8th plan (1992-97) until the 12th plan period (2012-2017). Through these years, despite the decline of agricultural employment, the economy remained primarily agrarian. Although the literature often affirms productivity gains from trade liberalization, empirical evidence suggests that women have not benefited equally, as their employment did not shift toward industrial occupations—unlike the modest but noticeable increase in male employment in the sector. The figures indicate the persistence of employment of women in agriculture immediately post liberalization. This era is also marked by an initial sectoral shift, with men's employment shifting from agriculture to industry. It was not until the ninth five-year plan (1997-2002) of the post-reform era that this sectoral shift became prominent as indicated by figure 1.2. Employment in industry increased slightly for male and female over these years; female employment in the services sector increased substantially in recent years after the 2008 crisis. Based on the data, it is evident that the overall concentration of employment within agriculture was declining post liberalization. Simultaneously, both the industrial and the services sectors were gaining new employees. However, the gender composition driving the growth of these two sectors differed greatly. One critical question in this regard arises - Does the rise in women's employment in industry and services offset the drop in agricultural employment? Men's industrial employment grew between 2005-2013 while service sector employment slowed. We observe a sharp drop around Covid pandemic years in 2019-2021 for men's employment in both industry and services, which is consistent with the current scholarship and observations about men losing out on jobs at higher rates due to pandemic in these years. Similar losses were observed in women's employment as well. Interestingly, we observe a sharp drop in women's services employment around the financial crisis years of 2007-09. Industrial employment growth remained relatively stable beginning in 1997 until the decline in 2013 and then again during the pandemic. Figure 3 illustrates women's high concentration in agriculture, which did decline somewhat from 84.7% of women's employment in 1987-88 to 73.2% in 2017-18. All other sectors, including manufacturing, construction, trade, transport and other services employ few women (all are below 10% of women's total employment) regardless of the survey year. Women's employment in manufacturing and services increase slightly between survey years 1987-88 and 2017-18.

The trade data in figure 6 on imports and exports of goods and services as a percentage of GDP with current prices show stable trend with fluctuations varying between the range of 17-30%. External trade balance remained consistently negative and low at 2-4% of total GDP. Figures 4 and 7 are derived from the Industrial Statistics database (INDSTAT2) published by the United Nations Industrial Development Organization (UNIDO). For the structural decomposition analysis (SDA), the main data on employment, value-added and nominal output is obtained from INDSTAT for the years 1993-2019 (ISIC Revision 3) two-digit manufacturing sectors in India, for sectoral output (in current US dollars). While total employment increases over 1993-2018 and then declines starting in 2019 due to the pandemic, the women's employment is more variable during 1993-2018. These changes indicate interesting labor market dynamics at play. Both the series seem to go up after 2008-09 crisis. Figure 7 shows that low productivity manufacturing industries, such as food and beverages (15), wearing apparel (18), tobacco products (16), and leather and leather products (19) employ higher shares of women, with women in wearing apparel constituting as high as 40-50% of total employment.

High and medium-high productivity industries, such as basic metals (27), chemicals and chemical products (24), coke and refines petroleum products (23), office, accounting and computing machinery (30) employ low shares of women on average, with percentages varying between 0-10%.

In the INDSTAT dataset used for Tables 1-5, data on nominal value added is available in millions of Indian rupees; GDP deflator for base year 2011 is used for calculating the real value-added for each sector and then divided by the number of employees to calculate productivity in each sector for each year. Productivity growth, women's employment shares and employment decomposition percentages are calculated for each subsequent year, and then averages are calculated for year groupings 1993-97, 1998-2002, 2003-07, 2008-13, 2014-19.[3] The productivity bands used to identify high, medium, medium-low and low productivity sectors are noted in the corresponding table for each time period. The productivity bands are determined based on our subjective judgements and allowed to fluctuate between low, medium-low, medium-high and high categories depending on how industry-value added and productivity changes between time period. While industries like coke, refined petroleum products, nuclear fuel (category 23) or basic metal (Category 27) consistently remain in the high productivity category, some other industries such as textile (17), leather and leather products (19), and tobacco products (16) always remain in the low productivity category. Other industries, such as machinery and equipment (29), rubber and plastic products (25), and non-metallic products (26) fluctuate between medium-low and medium-high productivity categories across time periods. The productivity categories by-and-large align with ISIC Revision 3 technology intensity classification of industries based on high, medium-high, medium-low and low technology in R&D manufacturing industries.

The data corresponding to Tables 6-10 draws from the Economic Transformation dataset on value added and employment are used to calculate labor productivity of the aggregate and detailed service sectors at the ISIC Revision 4 level .[4] ILO modelled statistics provide gender-disaggregated employment.[5] The methodologies used to obtain data in ILO Modelled estimates series and ETD dataset vary and combining them needs to be done carefully. The ILO's gendered employment data

[3] It is important to note that all the major data sources used in this study uses available data on male and female employment for the purpose of gender-disaggregated analysis and to understand the consequences of globalization and opening up of trade and capital markets on women's labor market outcomes. Any other gender identity or caste classifications are not available in these datasets and hence outside the immediate scope of study.

[4] The Economic Transformation Dataset (ETD) attempts to derive meaningful productivity measures by making the data on labour input and value-added/output measures cover the same activities and making the employment series (number of persons engaged rather than total employees in each sector is used) consistent in terms of coverage with value added in the national accounts. Establishment and labour force surveys are typically used to interpolate series in between census benchmark years since data on employment are typically not available from national accounts.

[5] An important difference between the ILO modelled estimates of November 2023 and those of November 2024 arises from India's Periodic Labour Force Survey (PLFS) data. In the November 2023 edition, PLFS data for 2020, 2021, 2022, and the first half of 2023 became available and were included as model inputs, while data from 2018 and 2019 were excluded as they appear to present limited comparability with both the previous NSS results and the newer PLFS results. The ILO modelled estimates series provides a complete set of internationally comparable labour statistics, including both nationally reported observations and imputed data for countries with missing data. The imputations are produced through a series of econometric models maintained by the ILO. The purpose of estimating labour market indicators for countries with missing data is to obtain a balanced panel data set so that, every year.

is combined with ETD value added data to calculate labor productivity, its growth, and women's employment shares of broad sectors including agriculture, industries and services.

This study uses the methodology of Tejani & Kucera (2021), which decomposes employment growth by calculating annual growth rates and normalizing them using the absolute value of the average period growth of total employment. The SDA components are calculated as follows:

Women's share of total manufacturing sector employment: $\frac{F}{L} = \frac{\sum F^i}{\sum L^i}$

F^i/L^i denotes women's industry-level employment share within manufacturing sector i.

F and L stands for the female and the total employment in the manufacturing sector as a whole.

Correspondingly, the growth of female shares in manufacturing sector employment for any given year can be expressed as follows:

$$\psi = (1 + \hat{L}) \sum[\theta^i{}_0(\widehat{F^i} - \widehat{L^i}) + (\theta^i{}_0 - \epsilon^i{}_0)\widehat{L^i}]$$

$$\widehat{L^i} = (L^i{}_1 - L^i{}_0)/L^i{}_0$$

$$\widehat{F^i} = (F^i{}_! - F^i{}_0)/F^i{}_0$$

$$\theta^i{}_0 = F^i{}_0/F_0$$

$$\epsilon^i{}_0 = L^i{}_0/L_0$$

Term I: $\psi_W = \sum[\theta^i{}_0(\widehat{F^i} - \widehat{L^i})]$

Term II: $\psi_R = \sum[(\theta^i{}_0 - \epsilon^i{}_0)\widehat{L^i}]$

Term I accounts for the contribution of *within-industry effect*. This effect indicates how gender composition of employment within industry changes due to women's relative participation in individual industries, holding the sectoral composition of employment fixed; women's share of employment could change within industry due to changes in women's relative participation in each sector/industry. Increased labor force participation in certain industries could shed some light on increased use of flexible labor in that specific industry (usually provided by women), gender-bias in employment in a certain sector and increased labor force participation of women. The residual component is observed to be close to or equal to zero.

For any given industry, the within-industry effect is the difference between industry-level female employment growth and total employment growth weighted by the distribution of industry-level female employment relative to female employment in the manufacturing sector. Positive (negative)

within-industry effects result when industry-level female employment grows faster (slower) than industry-level total employment. It is important to note that positive within-industry effects can occur when men lose jobs at higher rates than women, such as during a recession. Such a scenario does not represent real improvements for either women or men workers (Tejani & Kucera, 2021).

Term II of the above equation represents the *reallocation effect*. Reallocation effects – or sectoral shifts in employment – capture the impact of changes in sectoral employment on women's share of manufacturing employment. These changes can reflect a broader transformation in the production structure, secular trends, and shifts in the structural composition of employment. Factors such as productivity shifts, changes in relative prices, and evolving consumer preferences influence trade and production patterns, potentially altering the domestic economy's position in the global production chain. This, in turn, can affect the types of jobs women are likely to hold.

For any given industry, the reallocation effect is the difference between the distribution of female employment in the industry (relative to female employment for the manufacturing sector as a whole) and the distribution of total employment in the industry (relative to total employment for the manufacturing sector as a whole), multiplied by industry-level employment growth. Positive (negative) reallocation effects result when industry-level employment grows in industries for which the difference between the distribution of female employment and the distribution of total employment is positive (negative), i.e., in industries with above (below) average female shares of manufacturing employment. Yet positive reallocation effects also result when industry-level employment contracts in industries with below average female shares of manufacturing employment. Such a scenario does not represent real improvements for either women or men workers and, as with within-industry effects (Tejani & Kucera, 2021).

For a broad sectoral analysis of the Indian economy and further carefully investigating the service sector, the employment data by sex and economic activity at various levels of broad, aggregate and detailed sectoral descriptions is obtained from International Labour organization (ILO) Modelled estimates for years 1991-2022. Data on value-added at ISIC Revision 4 economic activity levels, including details for service sectors are collected from Economic Transformation Dataset (ETD).

V. Results and Discussion

Preliminary findings reveal several key patterns. In the immediate post-reform years (1993-97 and 1998-2002), most low-productivity and medium-low productivity sectors showed positive within-industry effects alongside higher shares of female employment, indicating increased participation of women relative to men. These patterns suggest that such industries employed a greater proportion of women during this period, resulting in a net positive impact on women's employment. Several factors may explain this trend: women entering the labor force or taking on additional paid work to support household finances amid economic liberalization; and firms responding to global market pressures by hiring more women in low-wage, low-productivity, and flexible roles to reduce production costs. Meanwhile, persistent preference for male workers—especially in high-productivity, technologically

advanced sectors—may account for the continued concentration of female employment in lower-productivity industries.

However, during 2008-13, most medium-low, high- and medium-high productivity industries experienced negative reallocation effects, suggesting either stagnant growth or recessionary impacts from the global economic downturn. Additionally, within-industry effects and total sum were observed to be strongly negative during this time period, implying overall loss of jobs for women, both for structural or individual reasons within sectors. The reliance on downsizing and reducing flexible or temporary workers—who are often women—to cut production costs and keep industries afloat during and after the global financial crisis may help explain many of the observed negative employment impacts.

The study further analyzes employment patterns across different productivity levels to assess how industrial upgrading and productivity changes affect women's employment relative to men's. Data trends and decomposition analysis suggest a shift and concentration of female workers in low-productivity services and industries. Despite the opening of trade and capital markets following liberalization, women's employment gains across manufacturing industries have remained limited. This pattern becomes especially significant when considered alongside the substantial increase in service sector employment for both men and women in the aftermath of the 2008–09 financial crisis.

It is important to note that we do not account for productivity data for the years 2020 and 2021 since these years reflect the abrupt decline in productivity due to the Covid-19 pandemic. Also, female employment data is not available for these two recent years. It is also important to note that we do not observe a significant decline in productivity after global financial crises in the Indian manufacturing sector.

Here, we discuss some observable patterns and trends from the employment decomposition and productivity data presented above.

- The results from high-technology and medium-medium technology industries suggest that the Indian economy was not immediately positioned to capitalize on flexible employment and productivity gains following post-liberalization reforms. Negative reallocation effects are observed in several industries, including rubber and plastic products, basic metals, machinery and equipment, electrical machinery and apparatus. Many of these belong to medium-high-technology type industries and exhibit notable productivity growth in the post-liberalization period. The negative reallocation coefficients indicate a sectoral shift away from employing women in industries with both high technological intensity and below-average female employment shares.

- Most high and medium-high technology sectors showed negative within-industry effects during 1993-97 suggesting women loosing out in terms of getting employed in these sectors relative to men.

- Low-productivity industries such as textiles, wearing apparel, and wood products experienced low productivity growth immediately after liberalization reforms were implemented. While these industries recovered productivity growth in the years 1998-2002, some of these industries showed negative reallocation effects indicating more women employing industries losing out in terms of employment. These patterns align with existing literature, which finds women workers are concentrated in low-productivity industries and experience limited employment growth in high-productivity sectors.

- While there are some negative reallocation effects for high and med-high productivity sectors in post-reform period of 1993-97, one can observe negative coefficients for within-industry effects for most of the high productivity and medium-high productivity industries for 1998-2002. Post-reform structural changes in terms of opening up trade and capital markets and sudden exposure to global competition could result in employment losses in the immediate post-reform periods. However, in later years these industries exhibit significant productivity growth alongside stagnant employment in women-intensive sectors, with negative within-industry coefficients indicating an anti-female bias. This suggests that women are losing out on access to highly productive technical jobs as a consequence of industrial upgrading.

- The majority of industries – particularly those with high- and medium-high productivity – showed negative within-sector and reallocation effects during the 2008-13 period, suggesting contraction in size, operations, and business revenues. These trends reflect the impact of the global financial crisis on the broader economy and the resulting recessionary conditions. Across the manufacturing sector, most industry types experienced negative productivity growth during these years.

- Women's employment shares remained consistently high – and even increased in recent years – in low productivity sectors such as tobacco products, wearing apparel, and textiles. In contrast, average female employment shares stayed low in high- and medium-high productivity industries. The data also suggest a gradual sectoral shift in women's employment away from highly technical and productive roles in heavy machinery and manufacturing toward low-skilled low productivity service activities. These findings support the argument that industrial upgrading has contributed to a decline in women's access to high-quality, technical jobs.

- An examination of the correlation between within-industry employment effects and productivity growth of manufacturing sectors across clusters of years reveals **no conclusive evidence of a strong** positive or negative relationship. For most periods – except for 1998-2002 – weak positive correlations are observed, suggesting a potential link between reliance on flexible labor, feminization of workforce, and corresponding productivity growth for certain industries.

- However, during 2014-19, these industries showed signs of recovery in employment structure, reflected in a shift towards positive reallocation effects. Although this period also saw some productivity growth, the gains were modest, and within-industry effects remained negative for the majority of industries. This suggests limited employment growth in industries with above-average reliance on women's flexible labor, aligning with documented declines women's labor force participation during this decade and indicating a continued anti-woman bias in industrial hiring practices.

In the initial years post-liberalization, India as an economy was not in the position to make employment gains. Mostly female labor force participation did not increase significantly in low or medium-low technology industries. This analysis requires further investigation into employments shifts in the service and agriculture sector to be able to comment on some of the gendered employment patterns. However, from the data trends and decomposition analysis, one can suggest the employment shift and concentration of women workers in low-productivity services and industries. The employment gain of women in manufacturing sector over the years have not been significant despite trade and capital markets opening due to liberalization. Preference for male workers or anti-female bias could in the context of technological upgrading and high productivity activities could explain some of these patterns of concentration of female employment in low-productive industries.

VI. Concluding Remarks and path forward

This study seeks to examine the effects of the internationalization of production, trade, and capital flows on gendered employment outcomes, particularly through the lens of sectoral shifts and associated productivity dynamics. Future research aims to broaden the analysis by incorporating service sector data from the ILO and Economic Transformation datasets. This expanded scope will help address the issue of premature deindustrialization and the parallel rise of the service sector in India. While female employment in manufacturing has remained relatively stagnant over the past two decades, most employment gains for women have occurred in low-productivity service sectors. Building on the demand-side narrative advanced by Deshpande (2019; 2021), this analysis enables a deeper understanding of employment transitions across sectors—especially in light of the well-documented trend of labor moving out of agriculture into informal, low-productivity service work in an economy like India's.

Women's presence in industry has always been sensitive, and this sensitivity has increased after liberalizing policies in international trade—not only in India but in other global south countries as well. The future research plans intend to broaden its scope by incorporating service sector data from ILO and Economic Transformation datasets. This expanded analysis would help in addressing the argument of premature deindustrialization and service sector growth in India, which suggests that while female employment in manufacturing sector has remained relatively stagnant over the past two decades of post-reform India, women have primarily gained employment in low-productivity service sectors. For future references the study intends to investigate the causal implications of international

trade flows, tariff protection regimes and macro variables capturing structural changes on gendered labor market outcomes to disentangle the impacts of liberalization reforms and integration of trade and capital markets with the global economy. Incorporation of international trade flows, tariff protection regimes and the widespread presence of disguised unemployment, unskilled labor and non-traded informal sector would make it plausible to connect the exposure to globalization and increased openness of the economy since the implementation of neoliberal policies in 1990s in India with changes in female and total employment patterns.

Previous work in the Indian context has tried to address the question of trade liberalization and its impact on employment shares These explorations emerge with important pattern that allows one to understand the demand-side story of the gendered labor market outcomes in India. Further comparisons with other South Asian countries would allow for more important questions to be answered in terms of how existing trade patterns and exposure to global markets through trade and capital market openness influence the demand for labor (separately dissecting the structural changes arising out of changes in the production structures and individual industry/sector specific changes) in industrial and service sector in these economies. Additionally, future explorations could incorporate comparisons and contrasts across disaggregated industry and broader sectoral level decomposition results for various South Asian countries within the available datasets used in this chapter to uncover some of the underlying patterns and tendencies based on similar history of neoliberal policy implementation and distinctly different economic circumstances and country specific structural features of these economies.

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Tables and Figures

Table 1: Table of Employment Decomposition Results and Productivity Growth

1993-97 Avg. Productivity	INDSTAT2_Rev. 3 Industries	Employment decomposition				
		Prod. Growth	Within	Reallocation	Sum	Female empl. Share
High productivity sectors	23 Coke,refined petroleum products,nuclear fuel	-8.28%	-0.03%	0.03%	0.00%	2.97%
>500,000	24 Chemicals and chemical products	1.66%	4.78%	1.53%	6.31%	10.43%
	27 Basic metals	14.18%	0.55%	-1.73%	-1.18%	0.84%
Medium-high productivity	29 Machinery and equipment n.e.c.	6.36%	2.57%	-0.43%	2.14%	1.35%
350,000-500,000	31 Electrical machinery and apparatus (31A)	6.80%	4.21%	-0.43%	3.78%	6.96%
	36 Furniture; manufacturing n.e.c.	-0.57%	-15.02%	11.02%	-4.00%	12.58%
Medium-low productivity	21 Paper and paper products	-1.37%	1.41%	-0.67%	0.74%	3.18%
250,000-350,000	22 Printing and publishing	-4.28%	-2.50%	0.98%	-1.52%	3.13%
	25 Rubber and plastics products	6.18%	3.14%	-1.40%	1.75%	3.71%
	26 Non-metallic mineral products	9.09%	4.83%	0.60%	5.43%	6.14%
	28 Fabricated metal products	1.93%	-0.82%	-0.96%	-1.77%	1.67%
	33 Medical, precision and optical instruments	0.60%	0.21%	-0.03%	0.18%	12.30%
	34 Motor vehicles, trailers, semi-trailers (34A)	8.26%	1.17%	-5.54%	-4.37%	0.97%
Low productivity sectors	15 Food and beverages	3.94%	12.71%	3.29%	16.00%	14.72%
<250,000	16 Tobacco products	0.56%	-19.73%	8.21%	-11.52%	34.18%
	17 Textiles	-1.04%	24.51%	-1.71%	22.81%	6.86%
	18 Wearing apparel, fur (18A)	-10.64%	7.74%	15.07%	22.80%	39.98%
	20 Wood products (excl. furniture)	-0.79%	-13.61%	1.68%	-11.93%	7.46%
	No Data to classify					
	19 Leather, leather products and footwear					
	30 Office, accounting and computing machinery (30F)					
	32 Radio,television and communication equipment					
	35 Other transport equipment					
	37 Recycling					
	D Total manufacturing; Cross Industry Sums	2.58%	16.11%	29.52%	45.63%	9.75%

Datasources:Industrial Statistics database with 2-digit manufacturing data with ISIC Classification Revision 3 published by UNIDO Statistics for years 1993-2022

Table 2: Table of Employment Decomposition Results and Productivity Growth

1998-2002 Avg. Productivity	INDSTAT2_Rev. 3 Industries	Employment decomposition				
		Prod. Growth	Within	Reallocation	Sum	Female empl. Share
High productivity sectors	23 Coke,refined petroleum products,nuclear fuel	51.81%	-1.13%	-0.06%	-1.19%	2.07%
>700,000	24 Chemicals and chemical products	10.74%	-0.55%	-0.99%	-1.55%	11.75%
	27 Basic metals	6.64%	-0.19%	11.26%	11.07%	1.11%
	30 Office, accounting and computing machinery (30F)	29.35%	-7.92%	1.33%	-6.58%	9.33%
	32 Radio,television and communication equipment	7.61%	-13.53%	-15.13%	-28.66%	16.09%
Medium-high productivity sectors	31 Electrical machinery and apparatus (31A)	3.72%	-15.99%	4.18%	-11.81%	4.66%
500,000-700,000	33 Medical, precision and optical instruments	15.79%	-13.14%	-9.51%	-22.65%	12.56%
	34 Motor vehicles, trailers, semi-trailers (34A)	19.84%	3.59%	46.73%	50.32%	1.99%
	35 Other transport equipment	37.46%	-1.76%	11.22%	9.46%	1.09%
Medium-low productivity sectors	21 Paper and paper products	18.86%	-2.07%	-1.89%	-3.96%	4.90%
300,000-500,000	22 Printing and publishing	16.55%	2.29%	0.77%	3.07%	4.06%
	25 Rubber and plastics products	6.85%	0.57%	2.78%	3.35%	5.06%
	26 Non-metallic mineral products	3.75%	40.69%	-8.15%	32.55%	7.39%
	28 Fabricated metal products	6.39%	1.31%	-0.85%	0.46%	1.75%
	29 Machinery and equipment n.e.c.	3.61%	-1.40%	7.94%	6.54%	1.21%
	36 Furniture; manufacturing n.e.c.	1.56%	20.13%	8.35%	28.48%	13.13%
Low productivity sectors	15 Food and beverages	6.62%	2.56%	-2.40%	0.16%	16.16%
<300,000	16 Tobacco products	17.51%	9.70%	-4.63%	5.07%	33.47%
	17 Textiles	8.17%	3.83%	11.70%	15.53%	8.10%
	18 Wearing apparel, fur (18A)	3.50%	-7.43%	-25.92%	-33.35%	50.47%
	19 Leather, leather products and footwear	-4.60%	38.72%	13.03%	51.75%	24.59%
	20 Wood products (excl. furniture)	15.48%	-8.20%	1.98%	-6.22%	9.53%
	37 Recycling	-14.25%	42.46%	29.56%	81.88%	6.57%
	D Total manufacturing; cross country sums	9.59%	92.53%	81.32%	183.71%	11.65%

Datasources:Industrial Statistics database with 2-digit manufacturing data with ISIC Classification Revision 3 published by UNIDO Statistics for years 1993-2022

Table 3: Table of Employment Decomposition Results and Productivity Growth

2003-07 Avg. Productivity	INDSTAT2_Rev. 3 Industries	Employment decomposition				
		Prod. Growth	Within	Reallocation	Sum	Female empl. Share
High productivity sectors	23 Coke,refined petroleum products,nuclear fuel	9.57%	0.71%	4.94%	5.65%	1.39%
>900,000	24 Chemicals and chemical products	2.55%	13.42%	2.30%	15.72%	10.23%
	27 Basic metals	17.06%	-2.02%	38.02%	36.01%	0.77%
	30 Office, accounting and computing machinery (30F)	5.86%	0.00%	0.40%	0.40%	8.08%
	34 Motor vehicles, trailers, semi-trailers (34A)	6.04%	2.63%	24.32%	26.95%	1.88%
Medium-high productivity sectors	31 Electrical machinery and apparatus (31A)	10.18%	-4.91%	7.79%	2.88%	5.67%
700,000-900,000	32 Radio,television and communication equipment	-1.04%	5.76%	-0.42%	5.33%	12.35%
	33 Medical, precision and optical instruments	9.54%	-1.48%	-0.42%	-1.91%	12.56%
	35 Other transport equipment	3.43%	0.51%	5.26%	5.77%	0.87%
Medium-low productivity sectors	21 Paper and paper products	-1.98%	-24.47%	4.45%	-20.02%	7.29%
350,000-700,000	22 Printing and publishing	6.57%	-0.78%	2.38%	1.59%	4.14%
	25 Rubber and plastics products	1.06%	3.04%	8.48%	11.52%	4.84%
	26 Non-metallic mineral products	20.54%	68.37%	25.01%	93.37%	4.10%
	28 Fabricated metal products	8.99%	-2.19%	29.91%	27.72%	1.59%
	29 Machinery and equipment n.e.c.	9.89%	3.04%	20.59%	23.63%	1.19%
	36 Furniture; manufacturing n.e.c.	4.84%	5.49%	-1.23%	4.26%	4.84%
Low productivity sectors	15 Food and beverages	6.20%	-33.34%	-16.02%	-49.36%	17.61%
<350,000	16 Tobacco products	2.13%	76.05%	7.77%	83.82%	19.46%
	17 Textiles	1.63%	-74.84%	3.15%	-71.70%	12.69%
	18 Wearing apparel, fur (18A)	-2.60%	48.44%	-131.68%	-83.25%	44.18%
	19 Leather, leather products and footwear	1.89%	-9.50%	-9.58%	-19.09%	21.98%
	20 Wood products (excl. furniture)	7.79%	1.29%	1.14%	2.43%	6.52%
	37 Recycling	49.28%	-0.24%	0.16%	-0.07%	9.47%
	D Total manufacturing; cross industry sums	7.68%	74.96%	26.70%	101.66%	11.43%

Datasources:Industrial Statistics database with 2-digit manufacturing data with ISIC Classification Revision 3 published by UNIDO Statistics for years 1993-2022

Table 4: Table of Employment Decomposition Results and Productivity Growth

2008-13 Avg. Productivity	INDSTAT2_Rev. 3 Industries	Employment decomposition				
		Prod. Growth	Within	Reallocation	Sum	Female empl. Share
High productivity sectors	23 Coke,refined petroleum products,nuclear fuel	6.68%	0.52%	-0.35%	0.17%	1.55%
>1,000,000	24 Chemicals and chemical products	-0.39%	-41.10%	-9.38%	-50.49%	7.88%
	27 Basic metals	-0.78%	-2.14%	-19.78%	-21.92%	0.81%
Medium-high productivity sectors	25 Rubber and plastics products	3.57%	-3.25%	-14.36%	-17.61%	5.00%
700,000-1,000,000	26 Non-metallic mineral products	-7.22%	-0.68%	-23.63%	-24.30%	3.45%
	29 Machinery and equipment n.e.c.	-0.28%	2.43%	-14.76%	-12.33%	1.14%
	30 Office, accounting and computing machinery (30F)	4.11%	-3.52%	2.28%	-1.24%	9.95%
	31 Electrical machinery and apparatus (31A)	-5.27%	-6.02%	-11.76%	-17.78%	4.84%
	34 Motor vehicles, trailers, semi-trailers (34A)	-2.95%	4.69%	-29.27%	-24.58%	2.63%
	35 Other transport equipment	0.48%	1.64%	-8.67%	-7.03%	0.85%
Medium-low productivity sectors	15 Food and beverages	2.25%	-36.12%	17.18%	-18.94%	16.17%
400,000-700,000	21 Paper and paper products	4.29%	-21.71%	-1.34%	-23.04%	5.82%
	22 Printing and publishing	-6.55%	0.99%	-0.09%	0.90%	5.11%
	28 Fabricated metal products	-1.87%	-0.34%	-15.87%	-16.21%	1.73%
	36 Furniture; manufacturing n.e.c.	1.36%	5.49%	-1.23%	4.26%	10.33%
Low productivity sectors	16 Tobacco products	3.79%	248.96%	1.30%	250.26%	25.12%
<400,000	17 Textiles	4.57%	11.87%	2.47%	14.34%	13.63%
	18 Wearing apparel, fur (18A)	2.73%	-46.04%	114.40%	68.36%	36.89%
	19 Leather, leather products and footwear	3.63%	-0.84%	13.40%	12.56%	24.01%
	20 Wood products (excl. furniture)	9.00%	-0.62%	-0.53%	-1.15%	5.33%
	No Data to classify					
	32 Radio,television and communication equipment					
	33 Medical, precision and optical instruments					
	37 Recycling					
	D Total manufacturing	-1.73%	102.50%	1.75%	104.26%	10.48%

Datasources:Industrial Statistics database with 2-digit manufacturing data with ISIC Classification Revision 3 published by UNIDO Statistics for years 1993-2022

Table 5: Table of Employment Decomposition Results and Productivity Growth

2014-19 Avg. Productivity	INDSTAT2_Rev. 3 Industries	Employment decomposition				
		Prod. Growth	Within	Reallocation	Sum	Female empl. Share
High productivity sectors	23 Coke,refined petroleum products,nuclear fuel	-15.87%	0.30%	1.99%	2.29%	0.86%
>1,000,000	24 Chemicals and chemical products	1.94%	9.55%	6.78%	16.33%	6.41%
	30 Office, accounting and computing machinery (30F)	-1.97%	2.25%	0.54%	2.79%	8.48%
Medium-high productivity sectors	27 Basic metals	-4.21%	-0.32%	9.08%	8.76%	0.86%
700,000-1,000,000	29 Machinery and equipment n.e.c.	-0.46%	-1.72%	11.63%	9.91%	1.51%
	31 Electrical machinery and apparatus (31A)	-1.11%	-1.42%	2.72%	1.30%	5.30%
	34 Motor vehicles, trailers, semi-trailers (34A)	1.30%	2.68%	10.64%	13.32%	2.29%
	35 Other transport equipment	2.41%	-0.08%	5.23%	5.15%	1.45%
Medium-low productivity sectors	15 Food and beverages	2.24%	34.31%	-2.77%	31.54%	12.76%
400,000-700,000	21 Paper and paper products	2.04%	-0.25%	1.18%	0.92%	6.58%
	22 Printing and publishing	7.45%	-0.36%	0.02%	-0.34%	6.01%
	25 Rubber and plastics products	-1.50%	-2.21%	6.07%	3.87%	4.94%
	26 Non-metallic mineral products	3.85%	1.90%	3.10%	5.00%	3.40%
	28 Fabricated metal products	1.14%	-1.80%	0.76%	-1.03%	2.39%
	36 Furniture; manufacturing n.e.c.	0.54%	1.22%	0.49%	1.71%	9.68%
Low productivity sectors	16 Tobacco products	3.59%	62.00%	5.27%	67.27%	27.82%
<400,000	17 Textiles	-0.52%	-5.88%	-1.86%	-7.74%	14.49%
	18 Wearing apparel, fur (18A)	1.39%	-11.44%	-35.14%	-46.58%	38.78%
	19 Leather, leather products and footwear	-0.55%				
	20 Wood products (excl. furniture)	3.91%	-0.28%	0.37%	0.09%	5.87%
No Data to classify	32 Radio,television and communication equipment					
	33 Medical, precision and optical instruments					
	37 Recycling					
	D Total manufacturing	-1.03%	85.72%	17.60%	103.32%	10.36%

Datasources:Industrial Statistics database with 2-digit manufacturing data with ISIC Classification Revision 3 published by UNIDO Statistics for years 1993-2022

Table 6: Table of Employment shares and Productivity results based on Aggregated, Broad and Detailed Service sectors

Year: 1991-97			
Prod. Levels	ISIC_Rev. 4 ETD Broad Sectors	Prod. Growth	Avg. Female empl. Share
LOW	Agriculture; A	0.25%	26.84%
MED-HIGH	Mining; B	8.87%	12.27%
MED-LOW	Manufacturing; C	0.97%	19.17%
HIGH	Utilities; D, E	4.51%	3.08%
MED-LOW	Construction; F	1.54%	8.37%
LOW	Trade services; G,I	2.88%	11.21%
MED-LOW	Transport & business services; H, J, M ,N	2.99%	4.13%
HIGH	Financial services; K	5.52%	10.00%
	Real estate; L		
MED-HIGH	Government services; O,P,Q	5.09%	22.84%
LOW	Other services; R,S,T,U	4.10%	27.84%
LOW	Total	3.45%	21.56%

Datasources: Employment by Sex and Economic activity published by International Labour Organization (ILO) Modelled Statistics and Economic Transformation Dataset for years 1991-2018

Table 7: Table of Employment shares and Productivity results based on Aggregated, Broad and Detailed Service sectors

1998-2002			
Prod. Levels	ISIC_Rev. 4 ETD Broad Sectors	Prod. Growth	Avg. Female empl. Share
LOW	Agriculture; A	0.25%	26.84%
MED-HIGH	Mining; B	8.87%	12.27%
MED-LOW	Manufacturing; C	0.97%	19.17%
HIGH	Utilities; D, E	4.51%	3.08%
MED-LOW	Construction; F	1.54%	8.37%
LOW	Trade services; G,I	2.88%	11.21%
	Transport services; H	2.21%	
	Business services; J,M,N	3.76%	
MED-LOW	Transport & business services; H, J, M ,N	2.99%	4.13%
HIGH	Financial services; K	5.52%	10.00%
	Real estate; L		
MED-HIGH	Government services; O,P,Q	5.09%	22.84%
LOW	Other services; R,S,T,U	4.10%	27.84%
LOW	Total	3.45%	21.56%

Datasources: Employment by Sex and Economic activity published by International Labour Organization (ILO) Modelled Statistics and Economic Transformation Dataset for years 1991-2018

Table 8: Table of Employment shares and Productivity results based on Aggregated, Broad and Detailed Service sectors

2003-07			
Productivity levels	ISIC_Rev. 4 ETD Broad Sectors	Prod. Growth	Avg. Female empl. Share
LOW	Agriculture; A	0.25%	26.84%
MED-HIGH	Mining; B	8.87%	12.27%
MED-LOW	Manufacturing; C	0.97%	19.17%
HIGH	Utilities; D, E	4.51%	3.08%
MED-LOW	Construction; F	1.54%	8.37%
LOW	Trade services; G,I	2.88%	11.21%
MED-LOW	Transport & business services; H, J, M ,N	2.99%	4.13%
HIGH	Financial services; K	5.52%	10.00%
	Real estate; L		
MED-HIGH	Government services; O,P,Q	5.09%	22.84%
LOW	Other services; R,S,T,U	4.10%	27.84%
LOW	Total	3.45%	21.56%

Datasources: Employment by Sex and Economic activity published by International Labour Organization (ILO) Modelled Statistics and Economic Transformation Dataset for years 1991-2018

Table 9: Table of Employment shares and Productivity results based on Aggregated, Broad and Detailed Service sectors

2008-13			
Prod. Levels	ISIC_Rev. 4 ETD Broad Sectors	Prod. Growth	Avg. Female empl. Share
LOW	Agriculture; A	8.59%	32.31%
HIGH	Mining; B	4.01%	14.43%
MED-HIGH	Manufacturing; C	3.16%	26.19%
HIGH	Utilities; D, E	6.25%	11.40%
MED-LOW	Construction; F	-4.69%	13.12%
MED-LOW	Trade services; G,I	5.77%	13.61%
	Transport services; H	2.83%	
	Business services; J,M,N	-0.23%	
MED-HIGH	Transport & business services; H, J, M ,N	1.30%	6.22%
HIGH	Financial services; K	0.25%	14.55%
	Real estate; L		
MED-HIGH	Government services; O,P,Q	5.95%	39.35%
LOW	Other services; R,S,T,U	3.49%	35.38%
MED-LOW	Total	5.30%	25.26%

Datasources: Employment by Sex and Economic activity published by International Labour Organization (ILO) Modelled Statistics and Economic Transformation Dataset for years 1991-2018

Table 10: Table of Employment shares and Productivity results based on Aggregated, Broad and Detailed Service sectors

2008-13

Prod. Levels	ISIC_Rev. 4 ETD Broad Sectors	Prod. Growth	Avg. Female empl. Share
LOW	Agriculture; A	8.59%	32.31%
HIGH	Mining; B	4.01%	14.43%
MED-HIGH	Manufacturing; C	3.16%	26.19%
HIGH	Utilities; D, E	6.25%	11.40%
MED-LOW	Construction; F	-4.69%	13.12%
MED-LOW	Trade services; G,I	5.77%	13.61%
	Transport services; H	2.83%	
	Business services; J,M,N	-0.23%	
MED-HIGH	Transport & business services; H, J, M ,N	1.30%	6.22%
HIGH	Financial services; K	0.25%	14.55%
	Real estate; L		
MED-HIGH	Government services; O,P,Q	5.95%	39.35%
LOW	Other services; R,S,T,U	3.49%	35.38%
MED-LOW	Total	5.30%	25.26%

Datasources: Employment by Sex and Economic activity published by International Labour Organization (ILO) Modelled Statistics and Economic Transformation Dataset for years 1991-2018

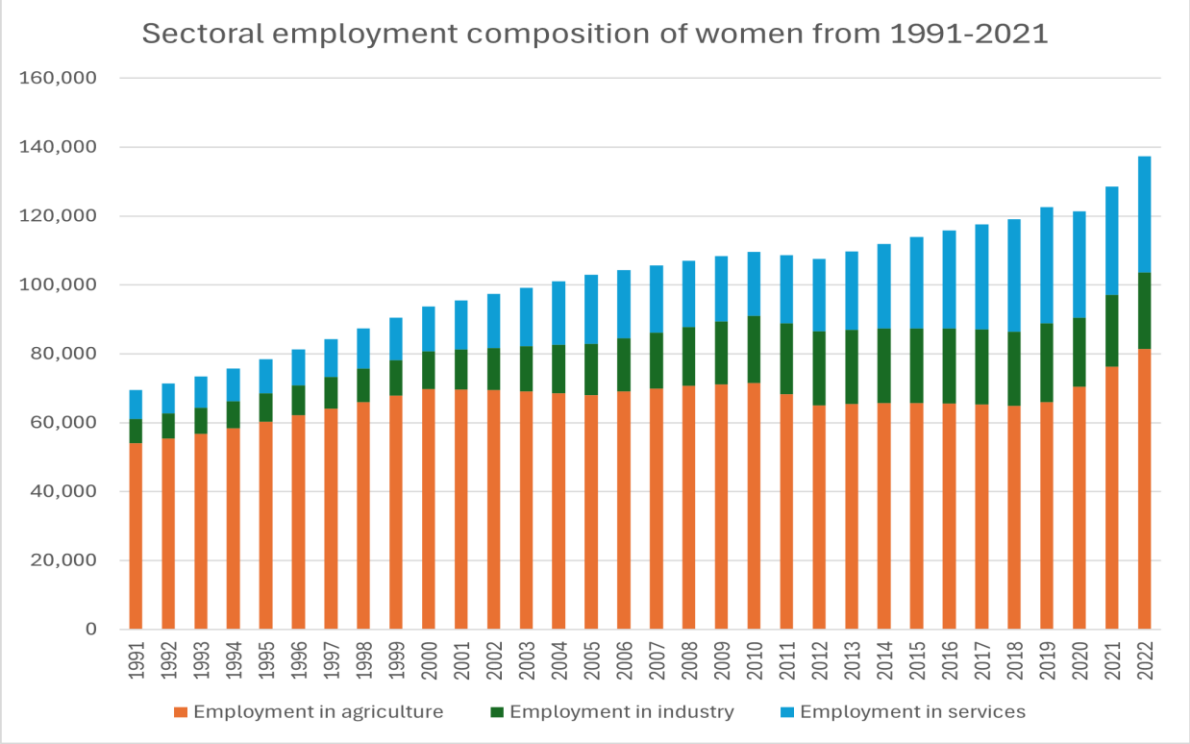

Figure 1.1 (Data source: ILO Modelled Estimates)

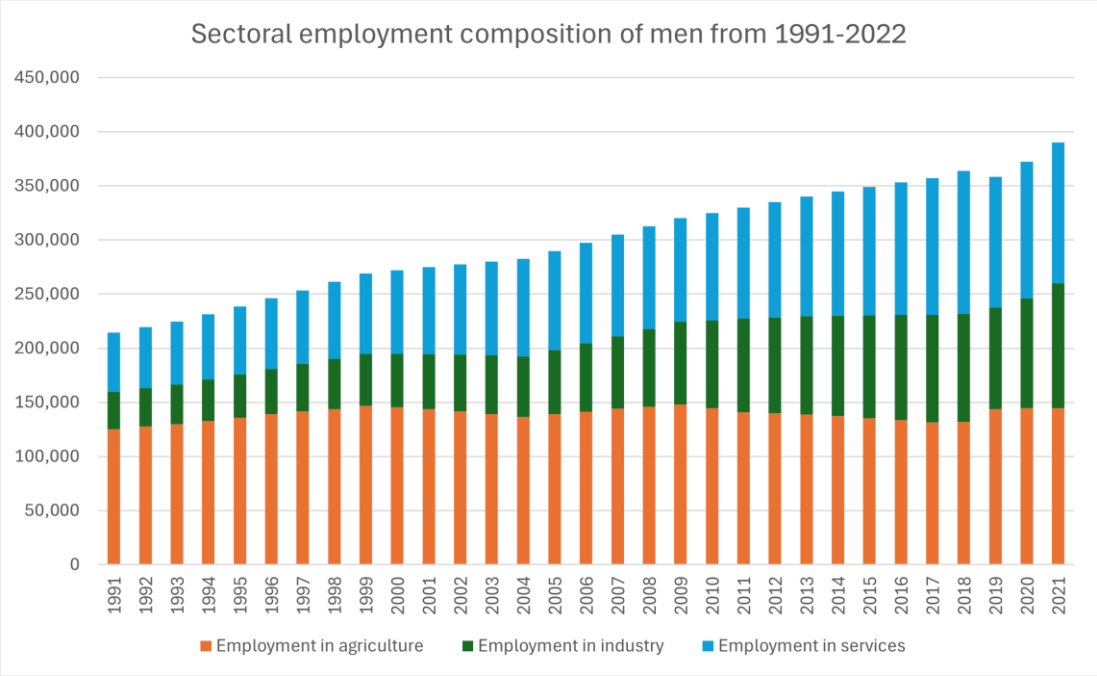

Figure 1.2 (Data source: ILO Modelled Estimates)

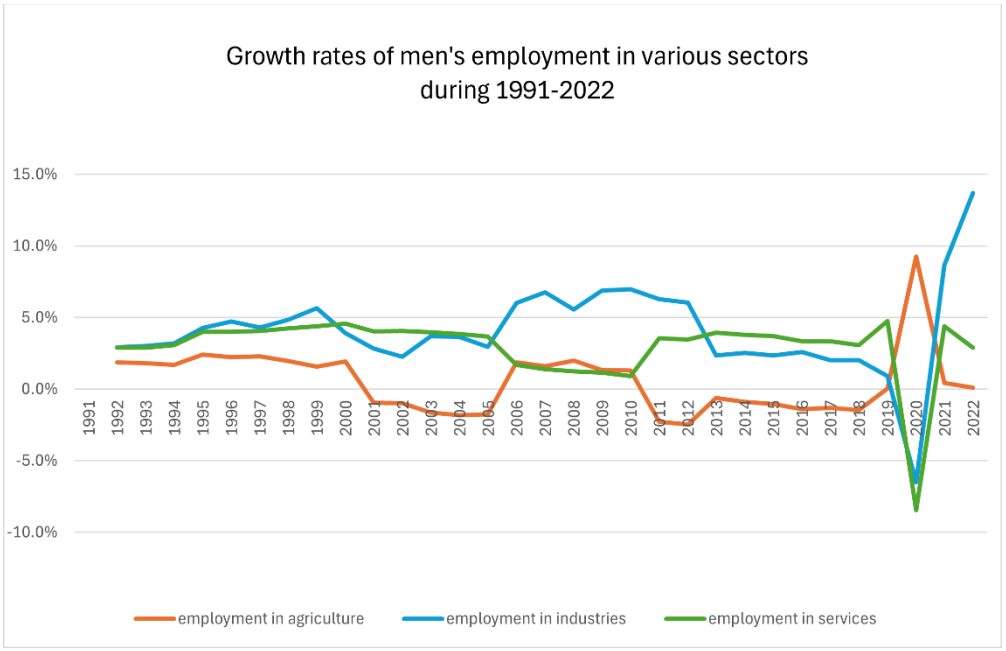

Figure 2.1 (Data source: ILO Modelled Estimates)

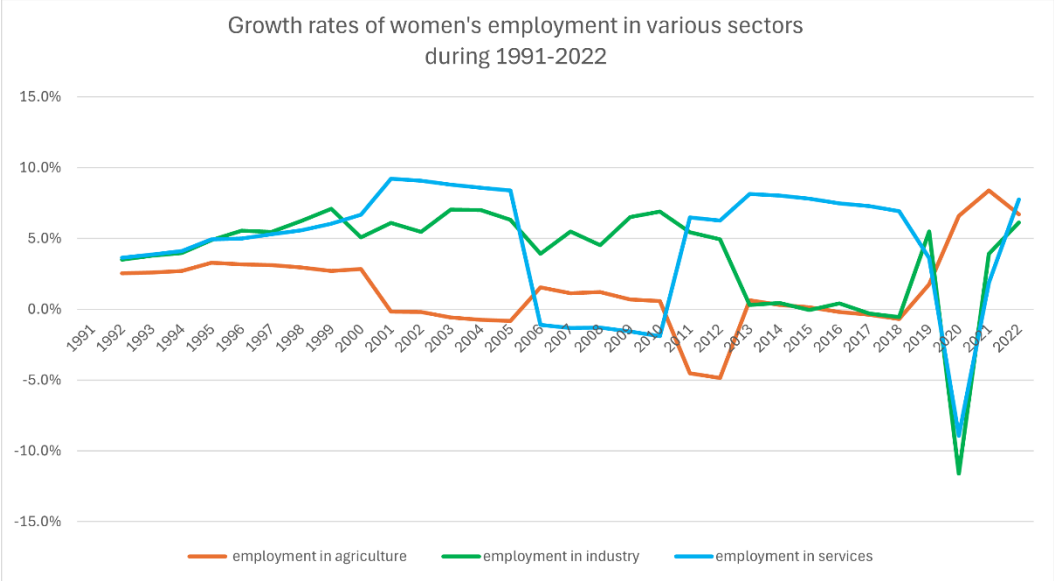

Figure 2.2 (Data source: ILO Modelled Estimates)

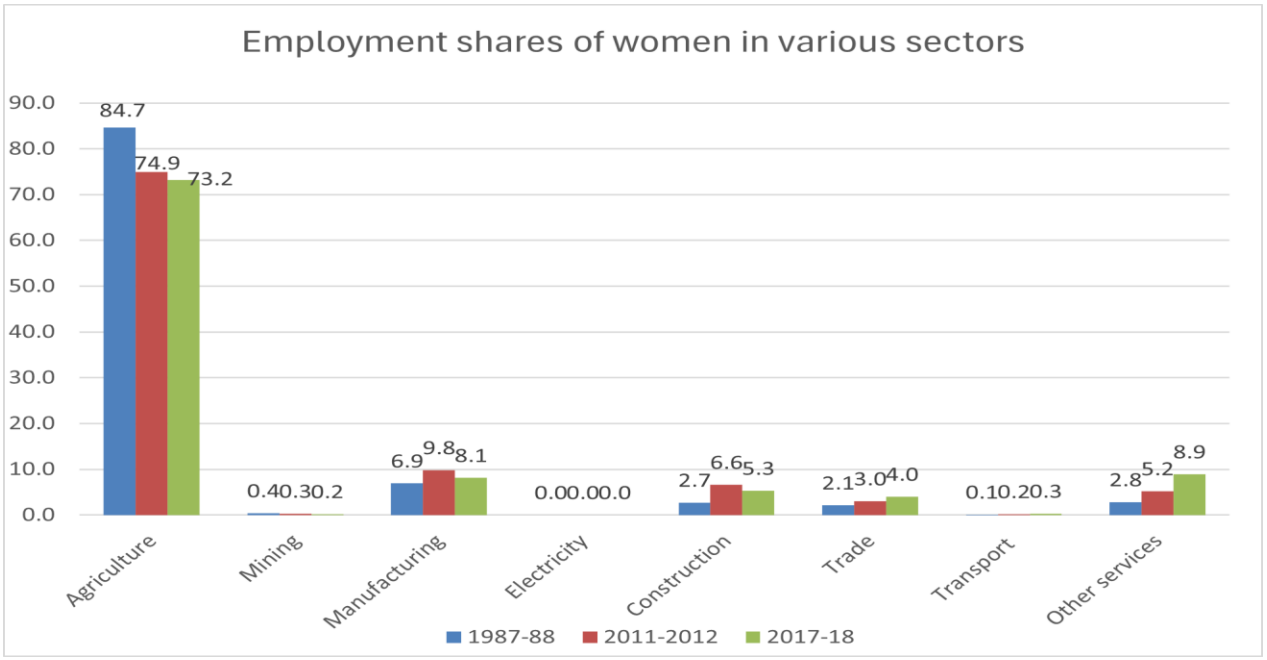

Figure 3 (Data source: Periodic Labor Force Survey of India)

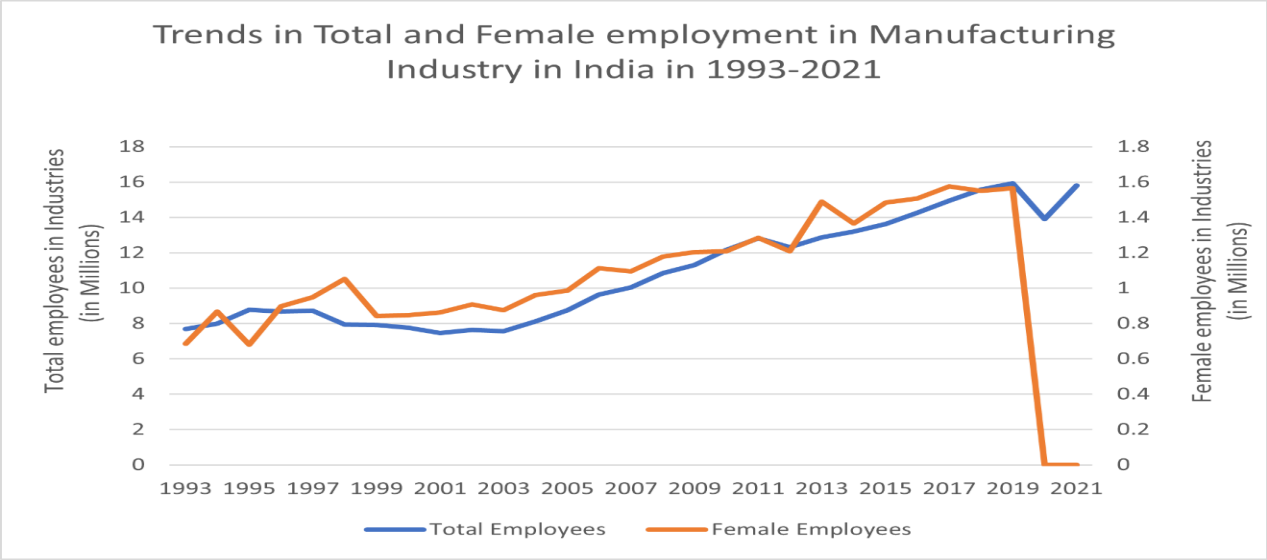

Figure 4

(Data source: INDSTAT 2-digit manufacturing database ISIC Classification Revision 3 published by UNIDO Statistics)[6]

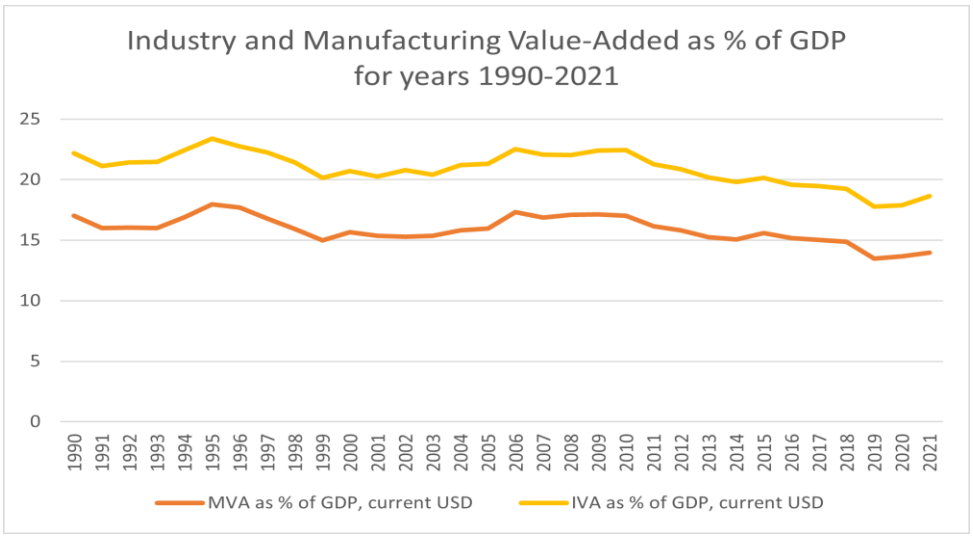

Figure 5 (Data source: National Income Statistics: Main Aggregates and Detailed Tables)[7]

[6] Figure 4 shows the total employment in manufacturing industry in Millions in the left-hand axis and female employment in Millions in the right-hand axis

[7] Figure 5 shows industry and manufacturing-value added as shares of GDP between 1990 and 2021, while figure 6 illustrates import, exports, and external balances as shares of GDP between 2005 and 2024. Both figures show stable patterns over time. Data is derived from the National Accounts Database on GDP, Industry Value Added, Manufacturing Value Added and population. The MVA and IVA series as a % of GDP have remained relatively stable with slight increases and decreases. The manufacturing-value added is included in the Industry value-added, but needs to be considered

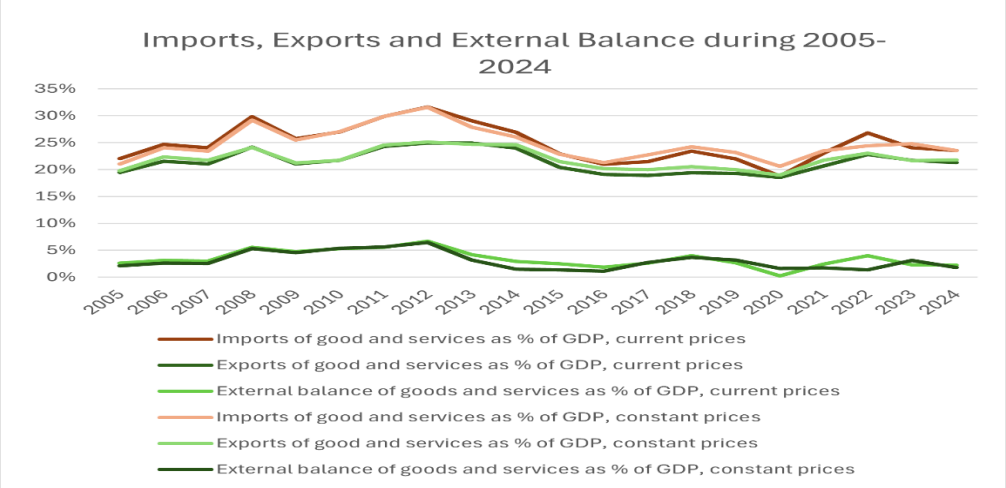

Figure 6

Data source: International Monetary Fund, National Economic Accounts (NEA), Annual Data

separately since this study focuses majorly on manufacturing productivity and employment trends. The major decline happened around covid years in 2019. Further, annual GDP Deflator indices are used for the subsequent years to calculate real productivity values (reindexing for base year 2011).

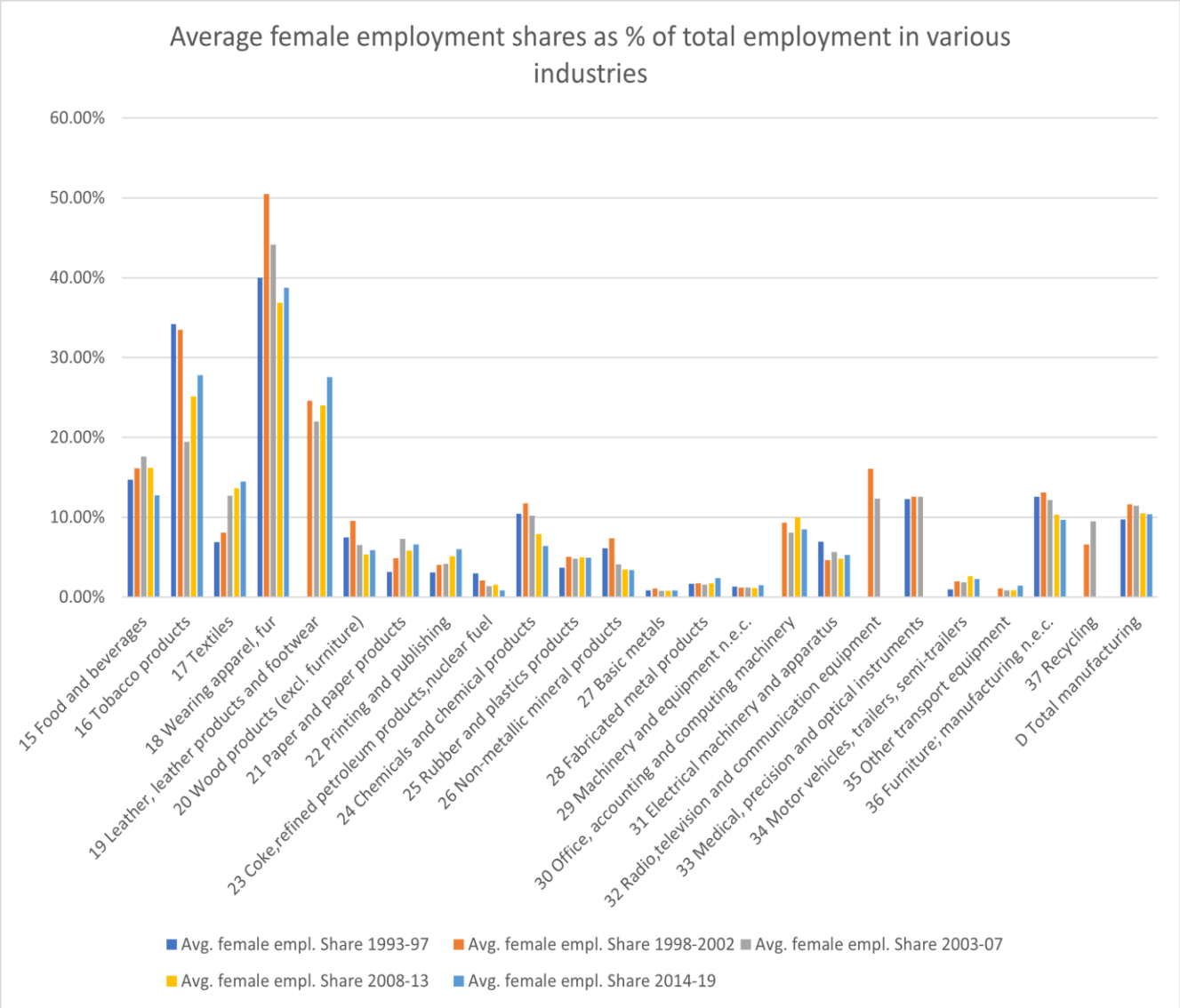

Figure 7

(Data source: INDSTAT 2-digit manufacturing database ISIC Classification Revision 3 published by UNIDO Statistics)

Appendix

India's five-year plan periods (considered in this chapter):

8th five-year plan: 1992-1997
9th five-year plan: 1997-2002
10th five-year plan: 2002-2007
11th five-year plan: 2007-2012
12th five-year plan: 2012-2017