UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

UNCTAD

Mainstreaming Gender in National Policies:

The cases of Ethiopia, Indonesia and Sri Lanka

UNITED NATIONS
UNCTAD

UNCTAD/GDS/INF/2022/1

Acknowledgements

This study was prepared by Elissa Braunstein and Diksha Arora under the supervision of the Unit on Economic Cooperation and Integration among Developing Countries, Division on Globalization and Development Strategies, UNCTAD.

The study is part of the project on South–South integration and the Sustainable Development Goals: Enhancing structural transformation in key partner countries of the Belt and Road initiative. UNCTAD serves as the implementing agency for this project that, within the context of the Belt and Road initiative and the economic interactions it entails, aims to build capacity in partner countries in the key policy areas of investment, industry, trade, finance and/or debt and technology.

Table of Contents

List of Figures

List of Tables

List of Appendix Figures and Tables

1. Introduction

Industrialization is a central driver of the structural transformation and productivity growth that support development. Most countries that have achieved high-income status in the modern era have done so by undergoing a shift in production and resources from traditional sectors to modern manufacturing. Relative to agriculture and services, the industrial sector has the strongest forward and backward linkages throughout the economy, with more opportunities for capital accumulation and acquiring new technology, and achieving economies of both scale and scope (UNCTAD 2016). Modern manufacturing is seemingly freer from constraints like institutions, policies or geography, offering the possibility of convergence to the frontier of technology driven by substantial and sustained labor productivity growth (Rodrik 2013). Not all of the benefits accrue on the supply side. Increasing employment opportunities in manufacturing offer higher-productivity and -paying employment relative to traditional sectors, broadening access to the benefits of development while establishing a foundation for the growth of domestic aggregate demand (Braunstein 2019).

Globalization and the growth of international trade have offered important pathways for speeding up the industrialization process. Access to larger markets enables both economies of scale and scope, capturing gains beyond what domestic consumer incomes can support. Similarly, access to global technologies, foreign exchange, and global value chains further facilitates these processes. These mechanisms underlie the promise and prominence of export-led industrialization, and the trade in manufactures that drives it, as a development strategy (UNCTAD 2016).

Partly because of the connection between exporting manufactures and women's employment, particularly in the more labor-intensive early stages of export-led industrialization, gender offers a useful lens into the social inclusion of structural transformation. In this background paper, we present an analysis of the connections between gender, employment and structural transformation since the early 1990s, including a general overview of trends and then focusing on specific country studies for Ethiopia, Indonesia and Sri Lanka. Given its recent development success, particular references to China's experience will be made throughout.

To establish a framework for the analysis, particularly for readers not as familiar with applying a gendered lens to questions of structural transformation, the paper begins with a short introduction to how development economists and practitioners have thought about sex and gender, and how different approaches affect the sorts of questions investigators ask and answer. Section 3 presents an empirical overview of women's industrial employment in the context of

development since the early 1990s, highlighting women's increasing exclusion from industrial sector employment even as their participation in paid employment has increased. Section 4 then introduces the country studies, presenting the methodology we use to evaluate structural transformation in the three country studies that follow. Using sectoral data from the Economic Transformation Database (for a total of nine sectors), a key focus will be decomposing the sources of labor productivity growth from a gender-disaggregated perspective with the aim of identifying prospects for making structural transformation more gender-inclusive.

2. Gender and industrialization in development thought: Efficiency and equity[1]

Gender equality has been a prominent part of development thought since economist Ester Boserup published her now famous book *Woman's Role in Economic Development* in 1970. For the first time, an economist claimed that not only did economic development treat women differently than men, but that so-called modernization threatened to marginalize women and make them worse off (Benería 2001). Influenced by Boserup's work, in the early 1970s a number of women development professionals coined the term "women in development" (WID) to advocate for policies and programs that drew women into modernization, including by increasing women's labor force participation in newly industrializing sectors (Braunstein 2011). This is the first appearance of the so-called "efficiency argument" for gender equality, based on the contention that women are an untapped resource whose inclusion in industrialization will spur faster growth and development (Moser 1993).

This perspective paralleled the rising dominance of neoclassical economics in the late 1980s. Neoclassical approaches emphasized policy-induced price distortions and imperfect markets as the major obstacles to development, providing the theoretical logic for the push towards liberalization and privatization that characterized the structural adjustment policies of the 1980s. These perspectives complemented WID's emerging focus on challenging discrimination in labor, credit and land markets – making markets less imperfect so that women's inclusion in them would benefit women themselves as well as their economic contributions. Other supply-side interventions like gender equality in health and education were advocated as a way to enable women to live up to their full economic potential, becoming a central feature of global advocacy for gender equality (Braunstein 2011).

[1] This discussion of efficiency and equity draws from work in Braunstein (2021).

What later came to be known as "gender and development" (GAD) also emerged in the 1980s as a critical response to the WID-type emphasis on women's inclusion in markets and modernization as a solution to gender inequality. The GAD approach emphasized gender as a social construction that specified how one's sex determined one's role in both production and reproduction, with consequences for the distribution of power between women and men (Benería 2001). Instead of focusing on exclusion from markets, GAD treats gender as emerging from the social relations between women and men, their social construction, and how women have been systematically subordinated in this relationship (Moser 1993). GAD approaches ask why and how women and men are assigned to different roles, how these roles are reflected in broader social institutions like labor markets, the state, and the household, and what the consequences are for development and development policy effectiveness (Braunstein 2011).

One can see these WID/GAD tensions in international development dialogues today. Institutions like the World Bank promote the efficiency of gender equality (e.g., "gender equality as smart economics"), targeting women's inclusion in labor, product, financial and asset markets as a pathway to individual empowerment and, eventually, social equality. By contrast, a number of United Nations organizations like UN Women and UNDP have been more focused on addressing how gender is embedded in economic and social relations and structures that reproduce existing hierarchies, partly by promoting gender norms (rules about appropriate behavior) and stereotypes (generalizations about the behavior of group members) that are internalized by individuals (UNDP 2020A; UN Women 2015). The targets that underlie Sustainable Goal 5: Achieve gender equality and empower all women and girls, including recognizing and valuing unpaid care work, ensuring women's access to sexual and reproductive health and rights, and eliminating all forms of violence against women, are all examples of this systemic or structural perspective, one that necessitates moving beyond women's inclusion in markets to achieve gender equality

3. Women's employment and industrialization: A global overview

It is with this background in mind that we can use gender as a lens into the social inclusion of industrialization and structural transformation.

Over the past few decades, globalization and trade liberalization have been associated with the nearly universal increase in women's participation in manufacturing employment across labor-abundant, high growth semi-industrialized countries (Berik and Rodgers 2009; Barrientos and Evers 2013; Standing 1989, 1999; World Bank and WTO 2020). This is particularly true for more labor-intensive manufacturing industries, where labor costs are a central part of international

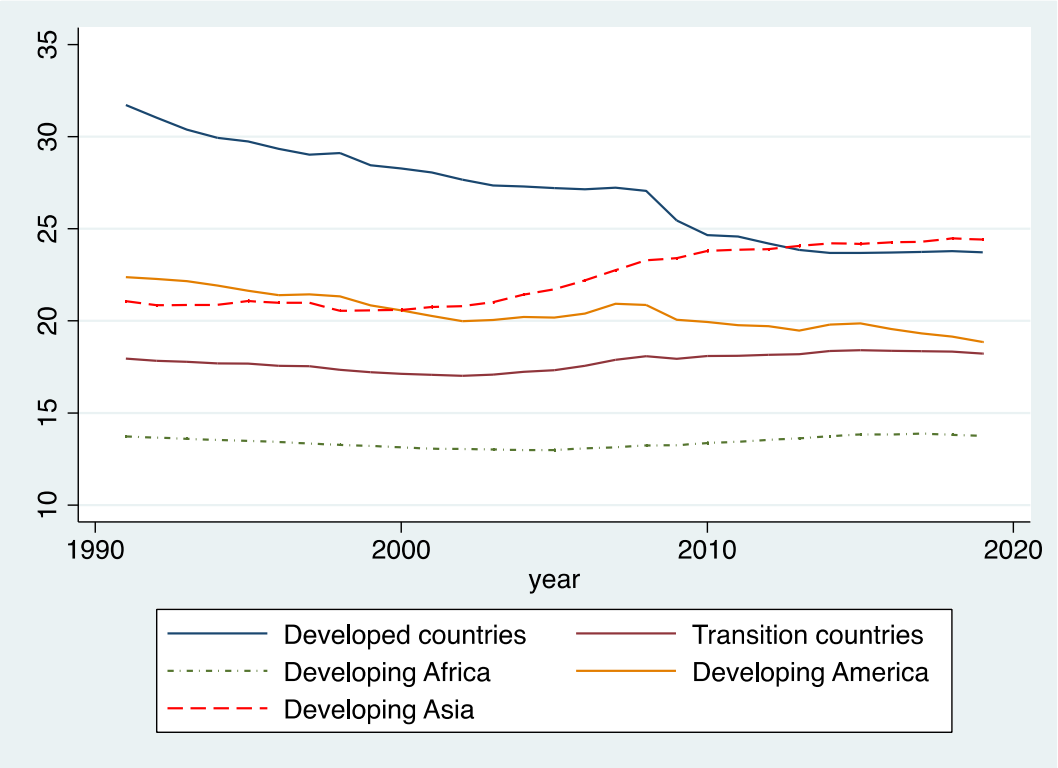
competitiveness. Employers in labor-intensive export industries prefer to hire women, both because women's wages are typically lower than men's, and because employers perceive women to be more productive in these types of jobs (Elson and Pearson 1981). In these senses, gender inequality has played an important part in export-led industrialization strategies. Gender wage gaps raise competitiveness (and profits) by helping to keep prices low (Seguino 2000). Women's lower wages can thus play the same role as exchange rate depreciation in raising export competitiveness, giving rise to what some scholars have termed the "feminization of foreign exchange earnings" (Samarasinghe 1998; Seguino 2010).

Women's rising participation in modern manufacturing also plays a more direct role in productivity-enhancing structural change. As women shift from traditional production activities, much of them unpaid, to paid work, market GDP rises. Women's shift into higher productivity and paying work is also associated with lower fertility and greater savings and investments in human capital, with positive externalities for growth, the so-called "demographic gift" (Bloom and Williamson 1997). Both of these factors support efficiency arguments for gender equality.

Despite how they reflect and reinforce the traditional gender norms that underlie gender inequality, modern industrial sector jobs are generally much better jobs than those available in the agricultural or traditional service sectors, for both women and men. The higher productivity of the industrial sector means that pay is also likely to be higher than in other sectors. Though this is clearly the case relative to agricultural work, it is important to remember that the services sector is very diverse, with high-wage categories like public administration coupled with lots of low-wage and informal work, particularly in developing countries (UNCTAD 2016). Relative to agriculture and services, industrial sector work is less likely to be informal, conducted on one's own account, or contributing family work, with less volatility and better access to social insurance (ILO 2009; 2018).

However, there has been a decline in the availability of industrial work across most regions in the world, as illustrated in **Figure 1**, which gives trends in industrial employment as a share of total employment by developing region since 1991. While the decline in the developed country group is understandable because of its late industrialization stage, the only developing region to experience the expansion in industrial employment that has traditionally accompanied the sort of structural transformation driven by industrialization is Asia. Industrial employment shares have declined about four percentage points in Developing America, and stagnated at extremely low levels in Developing Africa.

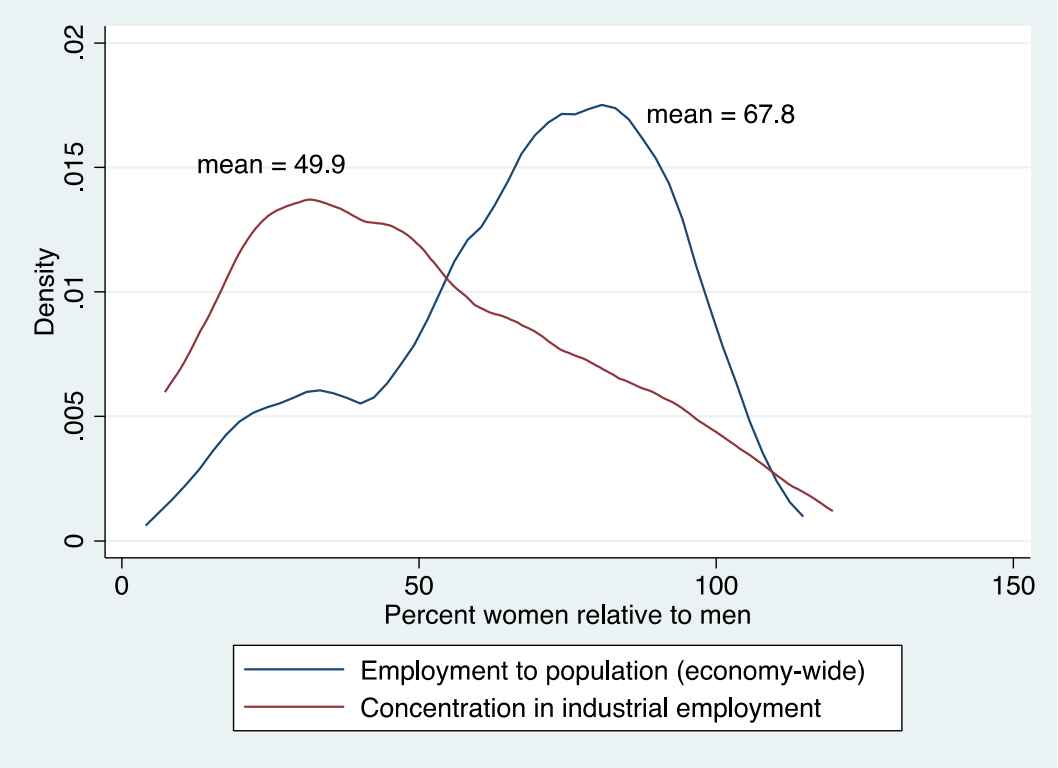
Figure 1. Industrial employment as a share of total employment by developing region, 1991 – 2019 (percent)



Note: Author's calculations based on ILO modeled data drawn from the WDI database. Regional groups conform to the U.N.'s country classification.

These declines in industrial employment shares have occurred as women have increased their labor force participation across much of the world. Despite the relative quality of industrial sector jobs, women are disproportionately excluded from them. **Figure 2** provides a snapshot of this gender segregation by illustrating a kernel density function for two measures: (1) women's employment-to-population ratio relative to men's employment-to-population for the entire economy, and (2) the share of industrial sector jobs in women's total employment relative to the same share for men. We refer to the latter measure as "women's relative concentration in industrial employment," indicating the importance of the industrial sector as a source of employment for women relative to its importance for men. The kernel density functions show the distribution of countries for the two measures. The mean for women's employment relative to men, 67.8 percent, is not only higher than women's relative concentration in industrial employment at 49.9 percent, but the entire curve illustrating the former is mostly situated outside of and to the right of the industrial employment curve.

Figure 2. Distribution of Developing Countries by Women's to Men's Economy-Wide Employment Rates and Shares of Industrial Sector Jobs, 2019



Note: Author's calculations based on ILO modeled data drawn from the WDI database.

Table 1 details changes over time (between 1991 and 2019) in the two measures by developing country region. Almost all regions have experienced increases in women's employment relative to men's over the past three decades, with the largest gains in Southern Africa and across Developing America. However, women's relative concentration in industrial employment has nearly universally declined, especially among the strong export performers in East and South-East Asia as well as Central America. **Figure 3** gives another set of functions that illustrate the distribution or density of these changes, with the mean gain in women's employment over the period equal to 6.9 percentage points, compared to a 19.2 percentage point average loss in women's relative concentration in industrial employment. Note how the two curves relate to the vertical zero axis line, with the vast majority of countries falling on the negative side for women's relative concentration in industrial employment, while at the same time experiencing increases in women's relative employment overall. The result is that, as women have increased their employment participation in developing countries, they have faced increased rates of gender segregation and exclusion from industrial sector work.

Table 1. Women's relative employment rate and concentration in industrial employment by developing region, 1991 and 2019 (percent)

	Women's relative employment-to-population rate			Women's relative concentration in industrial employment		
	1991	2019	Percentage point change	1991	2019	Percentage point change
Developing Africa						
Northern Africa	27.9	31.2	3.3	85.2	55.0	-30.2
Southern Africa	62.3	79.7	17.3	73.5	55.7	-17.8
Eastern Africa	82.8	85.5	2.6	52.2	38.7	-13.5
Western Africa	74.3	80.6	6.3	77.4	63.8	-13.6
Middle Africa	84.2	83.1	-1.1	44.7	45.2	0.5
Developing America						
South America	57.2	70.2	13.0	59.4	38.6	-20.9
Central America	44.8	58.4	13.6	99.3	63.8	-35.5
Caribbean	57.8	71.2	13.4	53.4	32.4	-21.0
Developing Asia						
Southern Asia	37.6	43.3	5.7	79.5	68.5	-11.0
Eastern Asia	73.1	78.2	5.1	85.4	46.2	-39.2
Western Asia	29.3	36.7	7.4	45.9	29.5	-16.4
South-Eastern Asia	73.7	76.2	2.4	98.2	69.5	-28.7
Developed countries	70.8	81.5	10.7	51.8	36.0	-15.8
Transition countries	73.2	72.4	-0.8	61.9	47.8	-14.1

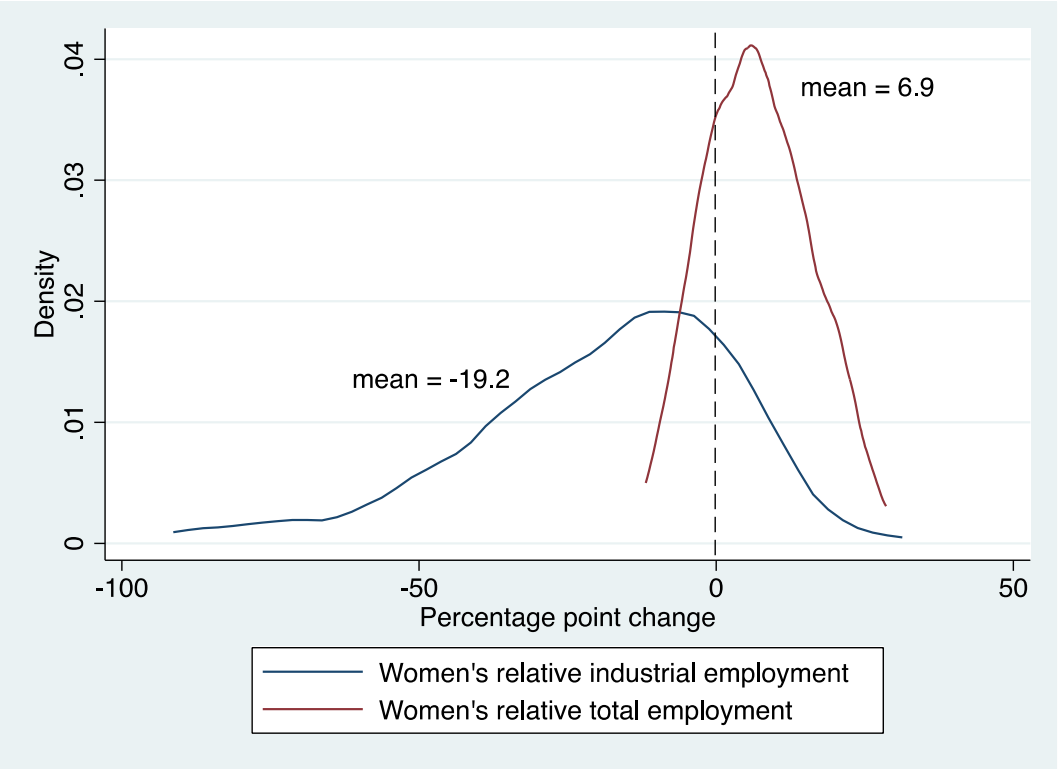
Note: Author calculations based on ILO modeled data downloaded from WDI database. Women's relative employment-to-population ratio equals women's employment rate divided by men's employment rate. Women's relative concentration in industrial employment equals women's industrial employment as a share of women's total employment divided by men's industrial employment as a share of men's total employment.

Why this decline in women's relative access to industrial sector work? One reason has to do with the impact of technological change and the rising capital intensity of production. Although employers around the world prefer to hire women for labor-intensive manufacturing, a wide variety of studies show that women tend to lose these jobs as industries upgrade (Kucera and Milberg 2014; Tejani and Milberg 2016; Seguino and Braunstein 2019).[2] Labor costs are less important in capital-intensive industries, and gender norms and stereotypes about the types of work women and men do come into play on both the demand and supply sides of the labor market. These results are consistent with the stylized finding that trade is generally associated with an increase in the relative returns to skilled labor (UNCTAD 2016), implying an increase in the relative

[2] Evidence on women's higher risk of automation is consistent with these gender-differentiated effects of technology (Brussevich et al. 2018).

demand for the sorts of jobs and workers that are identified as more skilled, i.e., those are more likely to be associated with men.

Figure 3. Change in Women's Concentration in Industrial Employment and Total Employment in Developing Countries, 1991 – 2019



Note: Author's calculations based on ILO modeled data drawn from the WDI database.

In addition to changing the gender-typing of jobs, technological change has lowered the employment intensity of industrialization and manufacturing overall. Combined with the increasing pace of globalization and the associated expansion in the global labor supply by many countries with similar comparative advantages, these changes have been associated with premature deindustrialization or stalled industrialization across a number of developing countries (Felipe, Mehta and Rhee 2019; Rodrik 2016; UNCTAD 2016). Manufacturing exporters in Asia have managed to better sustain both industrialization and its employment benefits, but other developing regions have not fared nearly as well (see Figure 1). And as industrial sector work has gotten more scarce, women across the world have become increasingly excluded from it (see Table 1). This gendered exclusion reflects how economic structures and institutions are "bearers of gender," both reflecting and reinforcing gender inequality.

We now turn to a country-specific examination of these trends, starting off with a methodology for investigating the sources of structural transformation and labor productivity growth in Ethiopia, Indonesia and Sri Lanka.

4. Structural transformation and labor productivity growth from a gender-aware perspective: Methodological approach for the country studies

4.1 Structural transformation and growth

Economists think about growth as driven by two factors: capital accumulation including human capital, and productivity growth, to which technological change is a key contributor. These two factors are connected, for instance, capital accumulation (both human and physical) can drive technological innovation. However, sustained and substantial growth of the sort that results in substantive improvements in living standards and well-being arises from increases in productivity (UNCTAD 2003). Neoclassical growth models tend to identify the causes of productivity growth as internal to the economic system and not sector specific, so structural transformation is not exclusively linked with industrialization (Palma 2005). Somewhat counter to this view, both classical and contemporary growth economists specifically concerned with development have tended to view growth as the result of a reallocation of resources from low- to high-productivity sectors with increasing returns to scale. This process depends on the structure of production, in particular on a growing share of manufacturing in output (Ocampo 2005). This perspective is also drawn from modern economic history: that with few exceptions, increasing living standards have been associated with increasing industrialization (Kaldor 1966).

This early insight probably drives the influential empirical finding that modern manufacturing exhibits "unconditional convergence." Regardless of the time period, geographical endowment, or existing economic and institutional conditions, labor productivity in modern, formal manufacturing industries will converge to the global productivity frontier. Convergence moves faster the farther away from the frontier it begins (Rodrik 2018). The better the conditions, the faster productivity growth and convergence will proceed.

This is not the case for the rest of the economy, where "conditional convergence" exhibits much closer dependence on the fundamentals. These can be impossible (geography) or very difficult (institutions) to change in the near term. From a growth and development perspective, manufacturing sectors need to be large and broadly integrated throughout the economy to eventually propel industrializing economies to the higher per capita incomes and levels of human development found in developed countries. Countries that have fully experienced industrialization, including high middle-income countries in Asia, then see a decline in the share of employment in industry, but have subsequently developed new high value-added services.

As noted in the opening sections of the paper, the intensification of globalization and pace of technological change in the modern era pose growing challenges for the traditional course of industrialization as a generator of employment and aggregate productivity growth. For instance, trade liberalization may enhance access to imported intermediates and increase participation in global value chains. But import competition might also put some less productive domestic firms out of business. At a sectoral level, this would increase productivity. But the overall effect on aggregate productivity depends on what happens to displaced workers. If they move to equally productive employment, the impact on aggregate productivity is positive. However, if they move into less productive sectors, for instance low value-added services, then aggregate productivity growth may decline. Similarly, if sectors experiencing productivity growth absorb very little labor, or exist as an enclave with weak forward or backward linkages to the rest of the economy, then contributions to growth and development will be structurally limited. This is why it is important to focus not just on productivity improvements in one sector or subsector to portray structural transformation and productivity growth, even if it is a sector central to industrialization like manufacturing. We present a methodology for doing this sectorally-based analysis in the next section.

4.2 A method for decomposing labor productivity growth

This paper applies the methodology presented in McMillan and Rodrik (2011) and Rodrik et al. (2016) to decompose the sources of aggregate labor productivity growth into two parts: (1) those that arise from changes in sectoral productivities, the "within" part; and (2) those that arise from the redistribution of employment and production across sectors with different (hopefully higher) productivities, the "across" or "structural change" part.

In mathematical form, aggregate labor productivity (output per worker) at time *t*, P_t, is represented by equation (1), where $p_{i,t}$ is labor productivity in sector *i* at time *t*, and $\theta_{i,t}$ is the proportion of the labor force employed in sector *i* at time *t*. Equation (1) thus indicates that aggregate labor productivity equals the weighted sum of sectoral labor productivities, with each sector's contribution to aggregate productivity weighted by the share of total employment in that sector.

$$(1) \qquad P_t = \sum_i \theta_{i,t} p_{i,t}$$

The change in labor productivity between time *t* and time *(t-k)* is then given in equation (2). The first term holds employment shares at the beginning of the period constant, so it is the change in aggregate productivity due to changes in sectoral productivities. The second term is the change in

productivity due to the reallocation of employment across sectors holding productivity constant. And the third term is the cross-sector productivity change, a sort of covariance term.

$$(2) \qquad \Delta P_t = \sum_i \theta_{i,t-k}\, \Delta p_{i,t} + \sum_i \Delta\theta_{i,t}\, p_{i,t-k} + \sum_i \theta_{i,t}\, \Delta p_{i,t}$$

McMillan and Rodrik (2011) put the second and third terms in equation (2) together to measure structural change, or the total change in labor productivity due to reallocation across sectors, with the final decomposition calculation based on equation (3). The first or "within" component is the weighted sum of productivity growth within sectors, where the weights are employment shares at the beginning of the period, (t-k). The second "structural change" or "across" component is the productivity growth attributable to movements of workers across sectors with different productivities. It is the product of labor productivity at the end of the time period and the change in employment shares across sectors. Equation (3) is the baseline formula we use for the decomposition calculations that follow.

$$(3) \qquad \Delta P_t = \sum_i \theta_{i,t-k}\, \Delta p_{i,t} + \sum_i p_{i,t} \Delta\theta_{i,t}$$

Decomposing the sources of labor productivity growth in this way also highlights how focusing on sector-specific changes in productivity ($\Delta p_{i,t}$) can be a misleading indicator of aggregate productivity growth (ΔP_t), because if the share of labor in that sector declines, there is an ambiguous impact on aggregate growth.

What about gender? With gender disaggregated employment shares by sector, we can further decompose equation (3) into equation (4). With *F* referring to women and *M* referring to men, the first term gives within contributions disaggregated (and weighted) by gendered employment shares, and the second and third terms together the effects of structural changes in the distribution of employment across sectors by gender. Note that the sectoral employment denominator for both women and men is total sectoral employment (women plus men), so for instance θ_i^F equals the number of women employed in sector *i* divided by the total number of people employed in sector *i*.

$$(4) \qquad \Delta P_t = \sum_i \left(\theta_{i,t-k}^F + \theta_{i,t-k}^M\right) \Delta p_{i,t} + \sum_i p_{i,t} \Delta\theta_{i,t}^F + \sum_i p_{i,t} \Delta\theta_{i,t}^M$$

4.3 Data

For the country studies that follow we use the Economic Transformation Database (ETD) for sectoral output and employment, with sectoral value added at constant local currency units to enable comparisons over time (de Vries et al. 2021). The gender distribution of employment across

sectors is drawn from ILO modeled estimates and applied to the ETD employment totals.[3] The ETD includes 12 sectors, but the ILO gender data includes only 9 sectors, so we add together 4 ETD output and employment sectors (business, finance, real estate, and transport) to mirror the ILO's gender data. The resulting sectors include (with ISIC Rev. 4 codes in parentheses): agriculture (A); mining (B); manufacturing (C); utilities (D+E); construction (F); trade services (G+I); business, finance, real estate, communications and transport services (H+J+M+N+K+L); government or public services (O+P+Q); and other services (R+S+T+U), which includes paid domestic services.

Rodrik et al. (2016) address a number potential measurement issues associated with applying this decomposition methodology given the data we have. Probably the most important from a gender perspective is the likely undercounting of both outputs and employment in the agricultural and informal sectors, or where women engage in unpaid subsistence work or contribute to family enterprises. Value-added in these sectors is likely underestimated, as is the number of women that contribute to production. On the employment side, country-level statistics offices make efforts to track informal and contributing family workers, and the ILO's econometrically modeled estimates on gendered employment make comparisons over time less affected by changes in data collection standards or statistical noise from year to year. Still, women's employment participation and contributions to value-added are likely underestimated.

In the gender disaggregation there is also the problem of not accounting for gender inequality within sectors, as contributions to productivity are simply allocated based on the number of workers. This approach does account to some extent (at an aggregate sectoral level) for how the distribution of women and men across more or less productive sectors affects their contributions to (and potential claims on) aggregate value added, a point taken up later in the paper. This approach does not, however, account for gender wage discrimination within sectors, nor the hierarchical sorting of women and men into occupations or subsectors based on gender, an issue that affects both pricing of outputs and inputs and is likely to be worse the more disaggregate the data. As such, the resulting inequality estimates can be thought of as lower bounds.

Another important issue is the prospect of one worker having multiple jobs, particularly in rural areas. Rodrik et al. (2016) cite evidence that primary classifications in farm work and rural

[3] The sectoral distribution of total employment for the ETD differs slightly from the total for ILO modeled estimates, so we apply ILO gender shares to the ETD employment data to make the productivity decomposition calculations internally consistent.

nonfarm work reflect how people spend most of their time. However, for countries where most people work in agriculture like Ethiopia, this challenge is likely more problematic.

And lastly, we do not account for differences in human capital across sectors or by gender. If human capital is on average lower in agriculture than other sectors, for instance, the calculations will overstate productivity in other sectors relative to agriculture. Rodrik et al. (2016) cite Gollin et al. (2014), who adjust employment for differences in education across sectors. After making the adjustment, they still find that agricultural productivity is significantly lower than average productivity in nonagricultural sectors. From a gender perspective, both education and health gaps have been closing around the developing world (Braunstein 2019), but there are still considerable gaps in many countries, such as Ethiopia. To the extent that men's human capital exceeds women's, estimates will overstate predominantly male sectors relative to those that are predominantly female.

While the data challenges and measurement issues are significant, it is a useful analysis for better understanding the broad patterns of labor productivity growth by gender and across sectors. As emphasized by Rodrik et al. (2016), though better data and measurement would improve our estimates, it is unlikely that the broad findings or patterns of gender inequality and relative productivities would be significantly different. With these data caveats in mind, we now turn to presenting the country studies for Ethiopia, Indonesia, and Sri Lanka.

5. Ethiopia

Over the last decade, Ethiopia has made significant strides in development, including by halving the national poverty rate (UN Women 2018). After contracting an average of -0.66 percent per year in the 1990s, per capita GDP growth increased to an annual average of 5.1 percent in the 2000s and 6.8 percent in the last decade.[4] GDP growth was accompanied by substantial improvements in access to health care, education, and other basic social services. Between 2000 and 2019, the Human Development Index (HDI) for Ethiopia increased an average of 3.5 percent per year, from 0.292 in 2000 to 0.485 in 2019, though Ethiopia is still categorized as having "low human development," ranking 173 out of 189 countries in the *2020 Human Development Report* (UNDP 2020B).

These trends have included important efforts to enhance women's empowerment and gender equality, including through endorsing the Convention on the Elimination of All Forms of

[4] Data drawn from the World Development Indicators database.

Discrimination Against Women, and the Beijing Platform for Action. Vital challenges remain. Gender disparities in the labor market are significant, as are gender differences in literacy, education and land ownership (UN Women 2018). Persistent gender gaps are reflected in Ethiopia's HDI by gender, which equaled 0.442 for women and 0.527 for men in 2019; the ratio of women's to men's HDI, the Gender Development Index (GDI), was 0.837, putting Ethiopia in the group of countries with the largest GDI gaps.

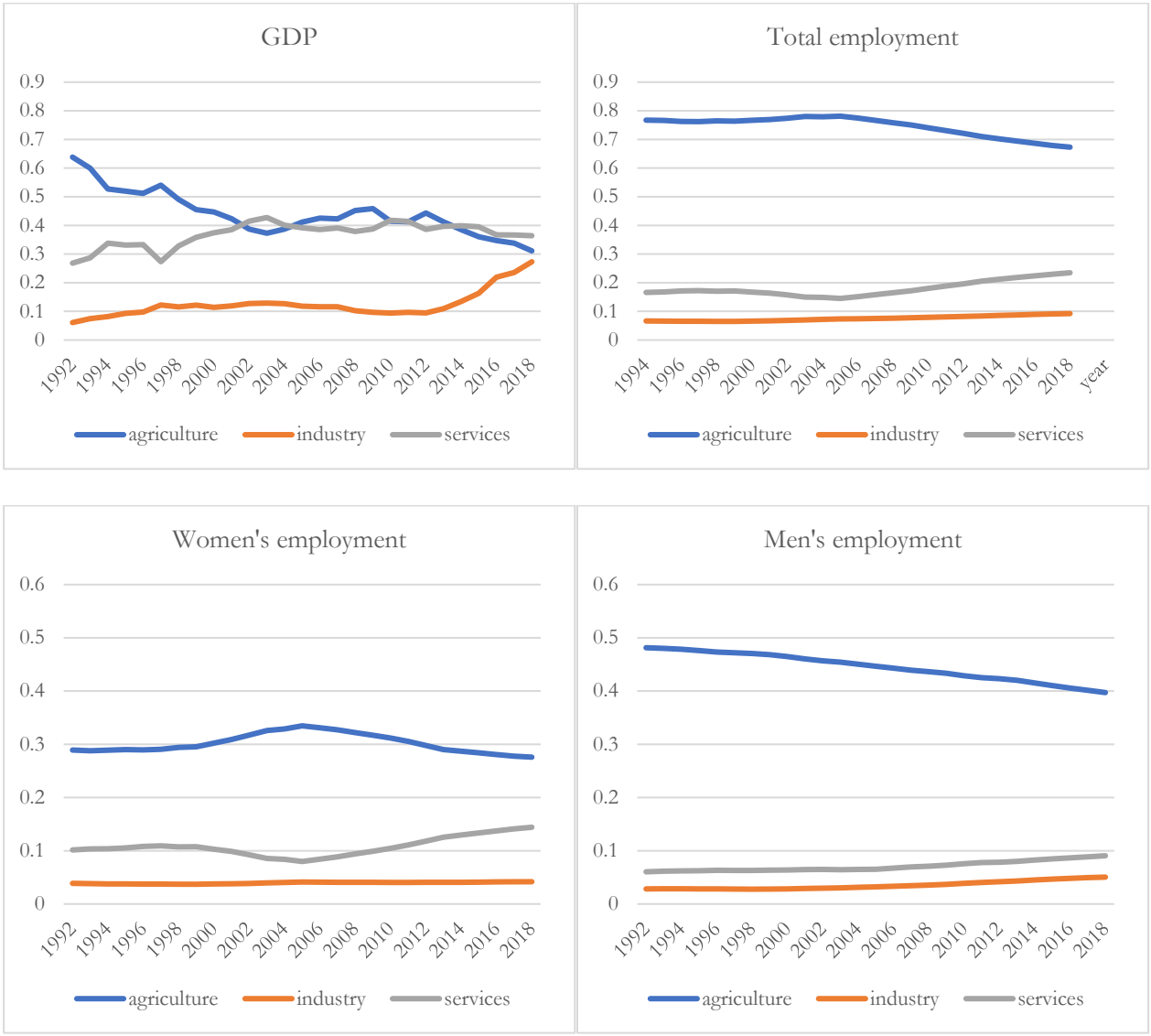
In the next sections, we highlight how gender inequality manifests within and constrains productivity growth and structural transformation in Ethiopia, starting with a brief overview of sectoral shares of value added and employment.

5.1 Shares of GDP and employment: agriculture, industry and services

Figure 4 illustrates value added versus employment shares for the aggregate sectors of agriculture, industry and services during the period 1992-2018. Focusing first on value added, after decades of stagnation, industry as a share of value added took off in 2013, increasing from 10.9 percent in that year to 27.3 percent of GDP as the share of agriculture value added declined. This growth paralleled the implementation of Ethiopia's Growth and Transformation Plan. The impact on employment, however, has been much less pronounced. Industrial employment as a share of total employment increased only 0.8 percentage points, from 8.4 percent in 2013 to 9.2 percent in 2018, while services increased from 16.2 to 23.5 percent. As industrial value added has grown and agriculture declined, workers have been transitioning out of agriculture and primarily into services rather than into industry.

Looking to the bottom of Figure 4, total employment shares are subdivided into women's and men's employment as a share of total (women plus men) employment. It helps to consider these changes relative to the changes in men's and women's participation in employment, which is presented at the top of **Table 2**. Table 2 presents average employment participation for women and men in three time periods, 1990-99, 2000-09, and 2010-18 for both Ethiopia and the three major developing regions. Starting at the top of Table 2, women's employment participation has been growing over time, with their employment to population ratio increasing from an average of 65.2 percent in the 1990s to 71.3 percent in the 2010s. Conversely, men's employment participation has declined slightly from 87.3 to 85.9 percent over the same period. Compared to other developing regions, both women's and men's participation in employment is among the highest recorded in the table, and the gender gap among the lowest. This is also true of the corresponding region for Ethiopia, Eastern Africa. Still, significant gender gaps remain.

Figure 4. Shares of GDP and Employment, Total and by Gender, 1992 –2018, Ethiopia



Note: Data on sectoral value added as a share of GDP is drawn from World Development Indicators database. Shares of employment are based on ILO modelled estimates from ILOSTAT. Note that value added shares presented for agriculture, industry, and services may not always add up to 100 percent due to the exclusion of financial intermediary services indirectly measured (FISIM) and net indirect taxe.

Table 2. Employment to population ratios by gender, Ethiopia and developing regions

	Period	Women	Men	Women/Men
Ethiopia	1991-99	65.2	87.3	74.6
	2000-09	70.7	88.0	80.3
	2010-19	71.3	85.9	83.0
Developing Africa				
Northern Africa	1991-99	17.6	61.3	28.8
	2000-09	19.1	61.7	30.9
	2010-19	19.3	62.1	31.1
Southern Africa	1991-99	34.5	54.3	63.5
	2000-09	36.2	51.8	69.9
	2010-19	40.9	53.5	76.4
Eastern Africa	1991-99	66.6	79.0	84.2
	2000-09	66.3	77.9	85.0
	2010-19	66.2	77.5	85.5
Western Africa	1991-99	54.9	73.3	74.9
	2000-09	54.3	70.6	76.9
	2010-19	52.9	67.1	78.9
Middle Africa	1991-99	59.2	69.5	85.2
	2000-09	59.2	70.0	84.5
	2010-19	58.8	70.5	83.5
Developing America				
South America	1991-99	44.1	74.6	59.2
	2000-09	47.6	74.0	64.4
	2010-19	51.2	74.5	68.8
Central America	1991-99	37.6	80.3	46.8
	2000-09	41.1	78.5	52.4
	2010-19	43.7	77.3	56.5
Caribbean	1991-99	41.8	70.6	59.2
	2000-09	43.8	68.4	64.0
	2010-19	46.8	67.6	69.2
Developing Asia				
Southern Asia	1991-99	28.8	78.0	36.9
	2000-09	30.2	76.9	39.3
	2010-19	30.3	74.1	40.9
Eastern Asia	1991-99	57.6	75.1	76.8
	2000-09	57.3	72.2	79.3
	2010-19	57.0	71.5	79.7
Western Asia	1991-99	23.1	75.8	30.5
	2000-09	23.7	73.8	32.1
	2010-19	26.6	75.4	35.3
South-Eastern Asia	1991-99	59.5	79.9	74.4
	2000-09	58.6	78.8	74.3
	2010-19	59.8	78.7	76.0

Note: Ratios refer to annual averages by time period. Data drawn from WDI database, based on ILO modeled estimates. Regional classification based on UN classification by region and level of development.

Turning again to Figure 4, most of the increase in women's employment participation was concentrated in the agricultural sector, at least through the mid-2000s. These gains paralleled Ethiopia's Agricultural Development-Led Industrialization (ADLI) policies, a policy driven by the rationale that high productivity agriculture would become the source of export earnings necessary to drive industrialization and economic growth (Moller 2015; Altenburg 2010). Women's agricultural employment as a share of total employment started the period at 28.9 percent in 1992 and peaked at 33.5 percent in 2005, after declining again to 27.6 percent in 2018, only about one percentage point behind where it began in the early 1990s. Though men have moved out of the agricultural sector at a faster rate than women, with men's agricultural employment as a share of total employment declining from 48.1 percent in 1992 to 39.7 percent in 2018, there are still more men in agriculture than women. By contrast, there are more women in the services sector than men. Women's services sector employment as a share of the total increased from 10.1 to 14.4 percent between 1992 and 2018, with men's increasing from 6.1 to 9.1 percent during the same period.

Both genders have experienced modest increases in employment in the industrial sector, though more so for men. Comparing industrial employment as a share of the total for 1992 and 2018, women's increased slightly from 3.9 to 4.2 percent, while men's increased a bit more from 2.8 to 5.1 percent, for a total industrial employment share (women plus men) of only 9.3 percent in 2018 (up from 6.7 percent in 1992). Both the level and growth of industrial employment is quite low in Ethiopia. As a comparison, consider China (**Annex Figure A.1**), where industrial employment as a share of the total started high in 1992 at 21.7 percent and increased to 28.3 percent in 2018.

In sum, then, as industrial value added has increased and agriculture declined, to the extent that there has been a shift in employment, it has largely been into services rather than industry. This is particularly true for women, in line with the international trends discussed in the beginning of the paper.

5.2 The sectoral distribution of employment and labor productivity gaps by gender

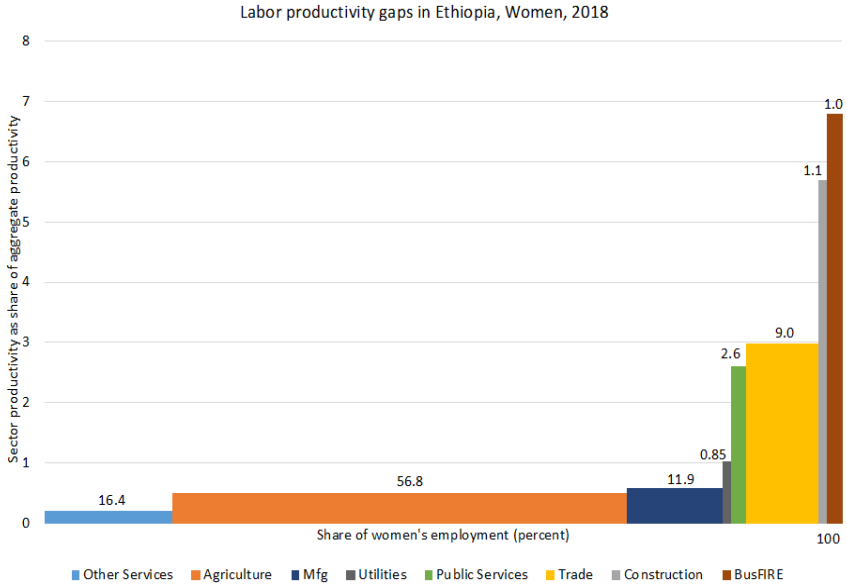
To consider these patterns with more sectoral detail, **Figure 5** illustrates the distribution of women's and men's employment across nine sectors in 1992 (on the left) and 2018 (on the right), and how those concentrations correspond with labor productivity gaps. The horizontal axes measure the sectoral shares of employment by gender, and total 100 percent. The widths of the columns correspond to the size of that share, which is also noted in the values at the top of each

column. So, for instance, in 1992, 85.9 percent of women's employment in Ethiopia was in agriculture, as was 92.8 percent of men's.

The height of each column corresponds to the value of the labor productivity in that sector divided by the economy's overall labor productivity. It thus measures that sector's relative labor productivity (RLP), the value of which is measured in relation to the y-axis. The columns are arrayed in increasing value of relative labor productivity, with the lowest for agriculture (0.77 in 1992 and 0.51 in 2018). (Note also that the column height is the same for women and men, as it measures that sector's relative labor productivity, which is the same for both.) Where sector employment shares are too narrow to appear, the employment share and RLP values are noted at the bottom of each figure.

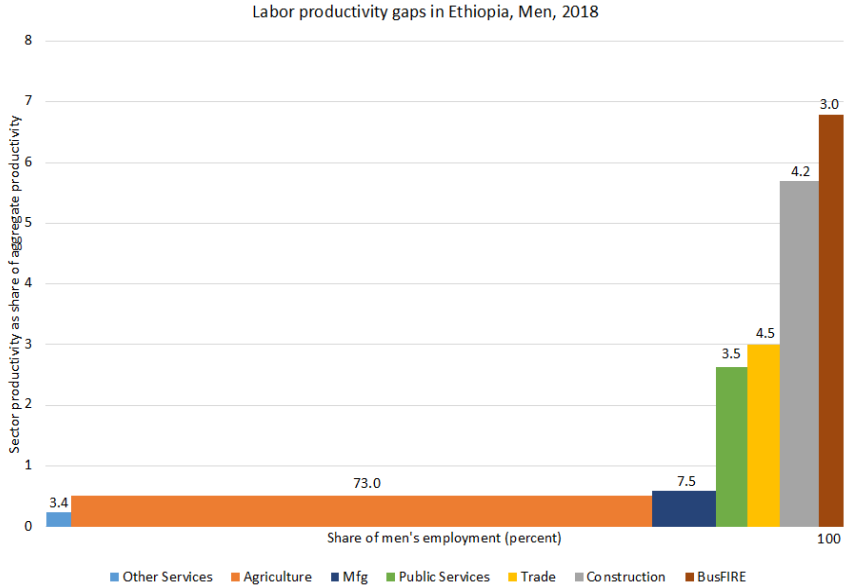
Figure 5. Labor Productivity Gaps by Sector and Gender in Ethiopia, 1992 and 2018

(Note: Emp share/RLP for Mining 0.08/3.0 Utilities 0.04/11.6 and Construction 0.07/14.2)



(Note: Emp share/LP for Mining 0.3/0.45)

(Note: Emp share/LP for Mining 0.22/3.0 and Construction 0.26/14.2)



(Note: Emp share/LP for Mining 0.6/0.45 and Utilities 0.4/1.04)

Starting with women at the top of Figure 5, one can see the dynamics illustrated in Figure 4, but there the denominator is total employment (women plus men). By contrast, in Figure 5 the denominator is women's total employment. Thus, Figure 4 illustrates how important women's employment is *to that sector's employment*, and Figure 5 illustrates how important a sector is *for women's employment*. Figure 5 illustrates a much more dramatic shift out of agriculture than is discernable in Figure 4.

Between 1992 and 2018, agricultural employment as a share of women's total employment declined from 85.9 to 56.8 percent. Though the decline is substantial at nearly 30 percentage points, the agricultural sector still provides the majority of women's employment, as it does for men. Women have instead shifted into other services, which increased from 3.6 to 16.4 percent of women's employment over the period, and manufacturing, which increased from 2.8 to 11.9 percent of women's employment. Importantly, all three of these sectors – agriculture, other services and manufacturing – are low productivity. While that might be expected for agriculture, which in 2018 was 0.51 times aggregate productivity, as well as other services, where productivity was 0.22 times the aggregate that year, it is more surprising for the manufacturing sector. In 2018, manufacturing sector productivity was only 0.60 times aggregate productivity, down from 0.86 in 1992, paralleling women's increasing employment in that sector. (Compare this to appendix Figure A.2 for China, where manufacturing was 1.3 times aggregate productivity in 1992 and 1.5 times in 2018.) This is consistent with estimates that put the share of formal jobs in manufacturing at just six percent of the total, a serious concern for industrialization prospects (Rodrik 2018).

A more positive pattern is suggested by women's increasing employment in trade services, which increased from 5.2 to 9.0 percent of their employment over the period, with labor productivity in this sector nearly about 3.0 times the national aggregate. The trade services sector is a diverse one, including wholesale and retail trade, motor vehicle repair, and accommodation and food services. Micro and small enterprises are an important feature of this sector, with women more highly concentrated among these sorts of firms (UN Women 2014). In the next section, we will get a better sense of how important these shifts have been for overall productivity growth.

Focusing on men in the bottom of Figure 5, men's employment has also shifted out of agriculture, decreasing from 92.8 to 73.0 percent of their employment between 1992 and 2018, maintaining a much higher concentration in agriculture than women. Men's employment is less concentrated in manufacturing than women's employment, with 7.5 percent of men's employment compared to 11.9 percent of women's in 2018. In addition to manufacturing, transitions out of agriculture for men have been into construction and services trade.

Adding up the proportions of women's and men's employment in sectors where labor productivity is less than Ethiopia's aggregate (RLP<1), the sums for 1992 and 2018 respectively were 85.9 and 85.4 percent of women's employment and 92.8 and 84.4 percent of men's employment. While men's employment distribution has shifted more towards higher productivity employment sectors, both women and men are concentrated in low productivity work.[5] These results indicate that there is a lot of potential for structural changes that shift workers out of agriculture and other services towards higher productivity sectors to contribute to productivity growth in Ethiopia, as well as ways to gender equitably share these gains. In the next section, we decompose the sources of productivity growth to better understand the course of these dynamics.

5.3 Decomposing labor productivity growth

Figure 6 uses equation (3) to decompose annual average labor productivity growth in Ethiopia into its "within" and "structural change" components for three time periods, 1991-99, 2000-09, and 2010-18. It includes the same calculations for Developing Africa and China for comparison. Adding the within and structural components gives total labor productivity growth. The 1990s were characterized by very slow labor productivity growth for Ethiopia, which averaged a total of just 0.45 percent per year during that period. Most of this growth was due to the positive impact of structural change, which grew an annual average of 1.11 percent. Conversely, productivity growth within sectors actually experienced an average decline of -0.66 percent. These circumstances changed considerably in the next two decades, with total labor productivity growth averaging 4.6 and 5.9 percent per year in the 2000s and 2010s respectively. The majority of this growth came from productivity growth within sectors as opposed to a reallocation of production and employment across sectors, in line with the limited movement of employment outlined above. In the latest time period, labor productivity growth within sectors averaged 4.26 percent per year, while that due to structural change averaged 1.67 percent per year.

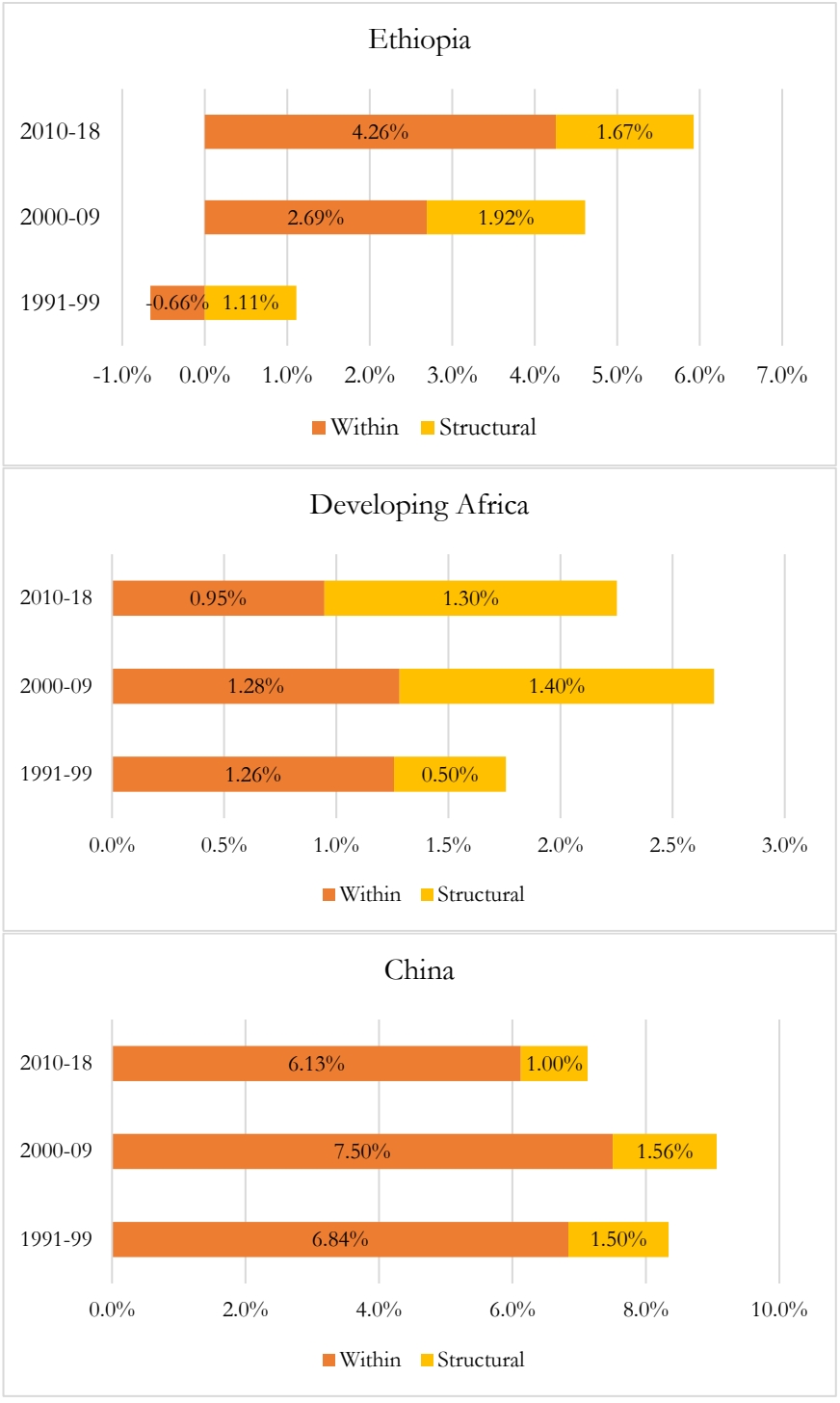
Compared with the Developing Africa region, productivity growth within and across sectors in Ethiopia are contributing more to aggregate growth. Again, given the very high concentration of employment in low-productivity agriculture, the impressive growth of productivity within sectors could contribute more to overall growth if employment shifted into higher productivity sectors at a faster rate. It is also interesting to compare Ethiopia to China at the bottom of Figure 6. China's within sector productivity growth over the past three decades has

[5] Note the tremendously high labor productivity for the business, real estate, finance and insurance sector, which came in at close to seven times aggregate productivity in 2018 (down from nearly 17 times in 1992). This result indicates some of the challenges with using labor productivity as an indicator of the potential to deliver substantive development and generate high-quality employment. In addition to experiencing more output price volatility, this sector has not been an important generator of employment through the course of development.

been formidable, averaging 6.1 percent per year in the last decade. The contributions of structural change are positive but much more modest, averaging just 1.0 percent between 2010 and 2018. China has much greater dispersion of employment across sectors relative to Ethiopia, as illustrated in Annex Figures A.1 and A.2, though there is still potential for productivity-enhancing structural changes.

To get a more disaggregated picture of the growth patterns illustrated in Figure 6, **Table 3** uses equation (4) to generate a nine-sector decomposition of labor productivity growth by gender and time period. The top three blocks of rows show annual average productivity growth by sector and time period *within* sectors (holding employment shares constant). The first block is for women, the second for men, and the third for total, which equals the sum of within sector productivity growth for women plus men. For instance, in 1991-99, average annual productivity within the agricultural sector declined -0.84 percent per year, with -0.52 percent associated with men's employment and -0.32 percent associated with women's. This split simply reflects the relative shares of men and women in agricultural employment, and also portrays how the distribution of gendered employment across sectors with differing productivities structurally constrains the contributions that women and men contribute to aggregate productivity growth. Focusing on the block of "total within" productivities and reading across, one can quickly ascertain both high- and low-growth sectors by time period. The total column gives the sum total of sectoral productivities for that time period.

Figure 6. Decomposition of productivity growth by time period, Ethiopia



Note: The addition of "within" and "structural" categories equals average annual total labor productivity growth for the time period referenced. Calculations are based on data drawn from the Economic Transformation Database (de Vries et al., 2021). Developing Africa includes: Botswana, Brukina Faso, Cameroon, Egypt, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Rwanda, Senegal, Senegal, South Africa, Tanzania, Tunisia, Uganda and Zambia.

Table 3. Contributions to labor productivity growth in Ethiopia, annual averages by gender and time period

	Ag	Min	Mfg	Uti	Con	Trade	Bus	Gov	Oser	Total
Within					Women					
1991-99	-0.32%	0.00%	-0.07%	0.00%	-0.03%	-0.07%	0.03%	0.09%	0.07%	-0.29%
2000-09	0.91%	0.00%	-0.08%	-0.01%	-0.03%	0.23%	0.02%	0.15%	0.00%	1.17%
2010-18	0.67%	-0.01%	0.19%	-0.04%	0.20%	1.00%	-0.07%	0.17%	-0.18%	1.93%
					Men					
1991-99	-0.52%	-0.01%	-0.03%	0.00%	-0.16%	-0.02%	0.16%	0.15%	0.05%	-0.37%
2000-09	1.24%	0.00%	-0.04%	-0.02%	-0.16%	0.12%	0.11%	0.26%	0.01%	1.52%
2010-18	0.94%	-0.02%	0.12%	-0.03%	0.78%	0.55%	-0.23%	0.27%	-0.06%	2.33%
					Total within					
1991-99	-0.84%	-0.01%	-0.10%	0.01%	-0.19%	-0.09%	0.20%	0.25%	0.12%	-0.66%
2000-09	2.15%	0.00%	-0.12%	-0.04%	-0.19%	0.35%	0.13%	0.40%	0.01%	2.69%
2010-18	1.61%	-0.03%	0.31%	-0.07%	0.98%	1.55%	-0.30%	0.44%	-0.24%	4.26%
Across					Women					
1991-99	-0.09%	0.00%	0.19%	0.01%	0.06%	0.41%	0.02%	0.08%	0.05%	0.72%
2000-09	-0.04%	0.02%	0.17%	0.04%	0.14%	0.34%	0.24%	-0.04%	0.09%	0.96%
2010-18	-0.40%	0.01%	0.08%	0.07%	0.13%	-0.16%	0.28%	0.10%	0.26%	0.37%
					Men					
1991-99	-0.37%	0.01%	0.09%	0.00%	0.29%	0.14%	0.08%	0.12%	0.03%	0.39%
2000-09	-0.53%	0.00%	0.09%	0.03%	0.46%	0.33%	0.63%	-0.05%	0.00%	0.96%
2010-18	-0.41%	0.03%	0.10%	0.02%	0.58%	-0.01%	0.85%	0.10%	0.03%	1.30%
					Total across					
1991-99	-0.46%	0.00%	0.28%	0.00%	0.35%	0.54%	0.10%	0.20%	0.08%	1.11%
2000-09	-0.57%	0.02%	0.26%	0.07%	0.59%	0.68%	0.86%	-0.10%	0.09%	1.92%
2010-18	-0.81%	0.03%	0.19%	0.09%	0.72%	-0.16%	1.13%	0.20%	0.29%	1.67%
Total productivity growth										
1991-99	-1.30%	-0.01%	0.18%	0.01%	0.17%	0.45%	0.30%	0.45%	0.21%	0.45%
2000-09	1.59%	0.01%	0.14%	0.03%	0.40%	1.03%	0.99%	0.31%	0.10%	4.61%
2010-18	0.80%	0.01%	0.50%	0.02%	1.70%	1.39%	0.84%	0.64%	0.05%	5.93%

Note: The addition of "within" and "structural" categories equals average annual total labor productivity growth for the time period referenced. Decomposition of productivity growth is based on Economic Transformation Database output and employment data (de Vries et al., 2021), with gendered shares of employment by sector drawn from ILO modeled estimates and then applied to ETD employment data. Data on sectoral output is taken in real local currency units. Abbreviations reference sectors as follows: Ag for agriculture; Min for mining; Mfg for manufacturing; Uti for utilities; Con for construction; Trade for trade services; Bus for business, finance, real estate, communications and transportation services; Gov for public services; and Oser for other services.

The second three blocks of rows labeled "across" list labor productivity growth due to structural change by sector, gender and time period. These figures show how employment changes are correlated with productivity levels. Negative values indicate employment is moving out of that sector. The magnitude reflects the interaction between that sector's productivity level at the end of the period and the change in employment. Looking at the total structural change contributions in agriculture (in the sixth block of rows), for instance, the average annual contribution in 2010-18 was -0.81 percent. This reflects labor moving out of agriculture and the associated loss in production, dependent in part on productivity levels in agriculture. The hope is that labor shifts into more highly productive sectors, more than making up for this sectoral productivity loss. When both productivity and employment are growing in a sector, this indicates the possibility for more widely-shared growth and development.

The bottom block of rows details total productivity growth by sector, and is the sum of the productivity growth within and across sectors. The far right column corresponds to the total productivity growth illustrated in Figure 6: 0.45 percent per year for the 1990s, 4.61 percent for the 2000s, and 5.93 percent for the 2010s.

There is a lot to explore in Table 3, so our discussion will focus on a few important sectors: agriculture, other services and manufacturing. Starting with agriculture, despite negative within sector productivity growth in the 1990s, this pattern turned around and increased to an annual average of 2.15 percent growth in the 2000s and 1.61 percent growth in the 2010s. Weighting this productivity growth by gendered shares of employment, the contributions of men's employment is higher than women's simply because more men than women work in agriculture. Productivity growth within the agricultural sector has been the largest sectoral contributor to total within productivity growth since the early 2000s, though services trade is close behind in the latest period.

Looking at the impact of structural change in the agricultural sector, the picture is a little different. These contributions are negative across all three time periods for both women and men because both groups are moving out of agriculture. As noted above, agriculture's total contribution (within plus across/structural change effects) to labor productivity growth has been positive over the 2000s, at 1.59 percent in 2000-09 and 0.80 percent in 2010-18.

Turning to other services, which is a growing share of employment especially for women, the decline in relative labor productivity illustrated in Figure 5 is apparent in Table 3, where the other services sector averaged -0.24 percent within-sector productivity growth between 2010-18. In line with their higher employment shares, women's employment has been more strongly

associated with this loss than men (with productivity growth of -0.18 percent for women versus -0.06 percent for men). Looking down to the impact of structural change in other services, given its low level of productivity, despite women's shift into this sector it is having only a moderately positive impact on overall productivity growth, making an average annual contribution of 0.29 percent in the 2010s (with 0.26 coming from women's employment and 0.03 coming from men's).

The last sector we consider in some detail is manufacturing. Starting at the top of Table 3 and within sector productivity growth, despite its importance to industrialization, the manufacturing sector in Ethiopia experienced on average negative productivity growth in both the 1990s (-0.10 percent per year) and 2000s (-0.12 percent per year). In the 2010-18 period, within sector productivity growth in manufacturing turned positive, averaging 0.31 percent per year. Though positive, this is still quite low. For comparison, **Annex Tables A.1–A.4** illustrate the same calculations for China, Developing Africa, America and Asia respectively. In China, productivity growth within the manufacturing sector averaged 3.5, 2.7 and 1.9 percent per year in the 1990s, 2000s, and 2010s respectively; the corresponding figures for Developing Africa were 0.24, 0.18 and 0.04. Relative to the Developing Africa region, Ethiopia has experienced an impressive turnaround in manufacturing sector productivity growth; but relative to China, much higher productivity growth is possible. Again, high rates of informality in manufacturing is an important constraint on productivity growth.

Turning to the effects of structural changes in the manufacturing sector – that is, how increases in manufacturing employment shares are affecting aggregate productivity growth – there are positive contributions across all three time periods for both women and men. Women made stronger contributions to productivity growth over the first two time periods than men, in line with their larger shift out of agriculture and into manufacturing. The latest time period is about evenly split between women's contributions (0.08 percent) and men's (0.10 percent), for a total of 0.19 percent annual contributions to aggregate productivity growth from employment growth in manufacturing.

The low contributions of structural changes in manufacturing to aggregate productivity growth – despite improvements within the sector – is consistent with studies showing that large, more productive and capital-intensive firms have created very little employment (Diao et al., 2021). By contrast, the movement of men into construction and business services has been the biggest contributor to productivity growth due to structural change in the 2010-18 period.

Lastly, we consider the total column on the far right, which sums up sectoral productivities. Focusing on productivity growth within sectors and comparing women and men, men's

employment tends to be concentrated in sectors with higher productivity growth, as indicated by the within total for men, a 2.33 percent annual average in the latest period, versus a 1.93 percent annual average for women. This suggests that men may have greater potential to capture the rewards of productivity growth within sectors in the form of higher wages. There is more gender disparity in structural changes, at least in the most recent period, with men moving into higher productivity sectors more than women; this is reflected in the structural change growth of 1.3 percent for men as opposed to 0.37 percent for women, and amounts to a reversal of patterns in earlier periods.

Checking the total productivity growth block at the bottom, note that the biggest contributors to aggregate productivity growth in the latest period were construction (1.7 percent per year) and trade services (1.4 percent per year). For construction, productivity growth has been primarily about structural change, with workers (especially men) moving into the sector and engaging in higher productivity work. For trade services, the contribution has been primarily centered on within sector productivity growth rather than gains in employment; the latter effect has indeed been negative (especially for women).

5.4 Drivers of employment shares: Labor productivity and trade

In the decomposition of the sources of labor productivity growth above, we saw that men's employment is moving into higher productivity sectors more so than women. To test this pattern in a different way, as well as to explore the effects of manufacturing and trade in moderating these outcomes, **Table 4** presents the results of an econometric analysis of changes in employment shares by gender (with the denominator being total, women's plus men's, employment), with lagged labor productivity levels and various measures of manufacturing trade and production as independent variables. Regressions include annual observations on nine sectors, with sectoral and time fixed effects; all variables are in logs except for changes in employment share and net manufacturing exports. The top half of the table gives results for Ethiopia, with the bottom half those for China as a comparative reference.

Starting with the regression results in column (1) for women and (4) for men, we can see labor productivity levels are negatively and significantly correlated with changes in women's employment, though there is no discernable relationship for men. A 10 percent increase in sectoral labor productivity is associated with a .014 percentage point decline in women's employment in that sector. Net manufacturing exports, that is exports of manufactures less imports of manufactures, do not have any statistically significant association with changes in employment shares. Columns (2) and (5) use medium and high tech exports as a share of manufacturing exports

as a trade measure, and here the results change somewhat. In the regression for women in column (2), sectoral labor productivity loses statistical significance, and the trade measure is negative and weakly significant. A 10 percent increase in the share of medium and high tech goods in manufacturing exports is associated with a .049 percentage point decline in women's sectoral employment share.

The results are effectively opposite for men: controlling for the technological intensity of manufacturing exports, labor productivity is now strongly positively correlated with men's employment share. A 10 percent increase in a sector's labor productivity is associated with a .099 percentage point increase in men's share of employment in that sector. This association between technological intensity and men's employment holds for manufacturing value added in general, as illustrated in column (6). In parallel, in column (3) the negative association with women's employment share is now larger.

Interestingly, the results for China are uniformly positive and statistically significant for both women and men, regardless of the measure of trade or production. This is in keeping with the fact that employment growth for both women and men has tended towards higher productivity sectors, and that trade in manufactures and more technologically intensive production in China supports employment growth as well.

Summarizing the results for Ethiopia, we find evidence that sectoral labor productivity levels are associated with lower employment shares for women and higher shares for men. Trade and production of more technologically sophisticated manufactures – the kinds of shifts that we would expect as industrialization proceeds – are also negatively associated with women's employment and positive for men. These results confirm some of the suggestive patterns reviewed above about gender disparities in potentially accessing the benefits of productivity growth in the form of higher incomes. They also specify an important target for enhancing the social inclusion of structural transformation and development. In addition to targeting sectoral productivity growth and the kinds of structural changes that afford greater access to higher wage employment, it is particularly important to ensure that women do not lose access to economic opportunities as they improve.

Table 4. Labor productivity and changes in employment share, Ethiopia and China, 1992–2018

Dependent variable: Changes in employment share	Ethiopia					
	Women			Men		
	(1)	(2)	(3)	(4)	(5)	(6)
Labor productivity, (t-1)	-0.138*** (0.0520)	0.228 (0.281)	0.228 (0.281)	-0.00712 (0.0226)	0.985** (0.421)	0.985** (0.421)
Net manufacturing exports	0.00226 (0.0179)			-0.00394 (0.00780)		
Medium and high tech exports as a share of manufacturing exports		-0.486* (0.247)			0.843** (0.371)	
Medium and high tech manufacturing as a share of manufacturing value added			-1.377* (0.701)			2.390** (1.052)
Observations	207	243	243	207	243	243
	China					
	Women			Men		
Labor productivity, (t-1)	1.883*** (0.489)	1.883*** (0.489)	1.883*** -0.489	1.978*** (0.543)	1.978*** (0.543)	1.978*** (0.543)
Net manufacturing exports	0.278*** (0.0758)			0.283*** (0.0843)		
Medium and high tech exports as a share of manufacturing exports		13.44*** (3.670)			13.72*** (4.082)	
Medium and high tech manufacturing as a share of manufacturing value added			216.3*** -59.05			220.8*** (65.68)
Observations	243	243	243	243	243	243

Note: Calculations include annual observations on nine sectors: agriculture; mining; manufacturing; utilities; construction; trade services; business, finance, real estate, communications and transportation services; public services; and other services. Employment shares are calculated as (women's sectoral employment)/(women's + men's total employment) for women and then the same for men. All variables in logs except for change in employment share and net manufacturing exports. Regressions include sector and year fixed effects, and labor productivity is lagged one year.

5.5 Concluding discussion

In this case study of Ethiopia, we considered gender-disaggregated trends in employment and labor productivity across agriculture and the major non-agricultural sectors in the economy during the period 1992-2018. Industry as a share of value added has grown substantially in recent years, but industrial employment lags far behind. Agriculture is still the main source of employment for both women and men. To the extent that there have been structural shifts of employment out of agriculture, these have largely been into services rather than industry, particularly for women. Both women's and men's employment is concentrated in low productivity work, including agriculture, other services, and even manufacturing, where labor productivity was just 60 percent of the country's aggregate labor productivity in 2018. Given the concentration of both women and men in low productivity work, there is a lot potential for productivity-enhancing structural changes by expanding employment in higher productivity sectors, while at the same time increasing productivity growth within those sectors.

The manufacturing sector has been a disappointing contributor to aggregate productivity growth, both in terms of productivity growth within the sector and structural changes that draw workers into manufacturing employment. Though manufacturing has become a larger share of women's employment than men's, low productivity limits its potential as an escalator for both women and development. From a gender perspective, though both women and men are concentrated in low productivity employment, men's employment is more highly concentrated in sectors with faster productivity growth. Particularly over the last decade, men are moving into higher productivity sectors more quickly than women, especially in business services and construction, sectors where very few women work. Labor productivity growth in trade services holds some potential for increasing incomes, particularly for women, but employment in that sector has been declining in recent years.

Given the promise of manufacturing for productivity-enhancing structural transformation, it is essential to ensure that industrialization is also socially inclusive, particularly as economic opportunities improve. For instance, in recent years, under the Growth and Transformation Plan Phase II industrialization strategy, the development of industrial parks has provided employment opportunities for women, particularly in textile and apparel manufacturing (UNDP 2018; ILO 2019). Compared to other African countries, Ethiopia has one of the lowest labor costs, $909.3 per worker, which is comparable to $835.31 per worker in Bangladesh. Low labor costs are certain to attract more investment in labor intensive manufacturing in Ethiopia, but it is important to strengthen links between foreign investments and productivity-enhancing structural change. At the same time, it will be critical to ensure that women's economic advancement does not get stalled

by wage ceilings associated with the low labor cost export-processing manufacturing model, particularly in light of Ethiopia's already high degree of gender segregation in occupations and gender inequality in secondary and higher education (UNDP 2018). A good example of a socially inclusive strategy is the ongoing program on advancing decent work and inclusive industrialization in Ethiopia, led by the ILO and other international organizations. The program, operating at the national, regional and factory levels, aims to improve workers' incomes, working conditions, voice, and representation, while ensuring enhancement of industrial productivity and competitiveness in the textile and garment sector (ILO 2019). It is important that gender-aware efforts like these which are aimed at creating a more inclusive model of industrialization are incorporated into industrial policy. The results are win-win for gender equality and labor productivity growth.

6. Indonesia[6]

Indonesia has made tremendous progress in economic development over the past few decades. In 2018, poverty rates fell below 10 percent for the first time, declining by half over the previous two decades (World Bank 2020). After the economic contraction brought on by the Asian Financial Crisis in the late 1990s, Indonesia averaged per capita growth of 3.7 percent per year in 2000-09 and 4.1 percent in 2010-19.[7] Improvements in human development mirror these changes, with the Human Development Index (HDI) averaging 1.1 percent growth per year between 1990 and 2019, increasing from 0.523 to 0.718, putting Indonesia in UNDP's "high human development category" (UNDP 2020B).

Indonesia has also made significant progress in terms of gender equality, closing education gaps and expanding basic health services (World Bank 2020). The biggest gaps remain in terms of women's limited participation in economic activities. Prevailing gender norms in Indonesia emphasize that paid work is secondary, and must be flexible enough to allow women to perform their roles at home, posing significant constraints on married women's participation in particular (Setyonaluri et al. 2014; Cameron et al. 2019). Gender differences in economic participation and associated income drive differences in the gender-specific HDIs, which equaled 0.694 for women and 0.738 for men in 2019. Increasing women's economic participation could also boost economic growth, with estimates of the returns on bringing women's participation in line with those in East Asia in the neighborhood of US$125-135 billion more in annual GDP, adding around 0.68 percentage points to annual growth (World Bank 2020). In this section, we consider these

[6] Note that each country section is designed to be a stand-alone subsection read on its own. As a result, there will be some repetition in the explanation of how figures and tables were derived, as well as for some of the regional and China comparisons.
[7] Data drawn from World Development Indicators database.

challenges from the perspective of structural transformation and aggregate labor productivity growth.

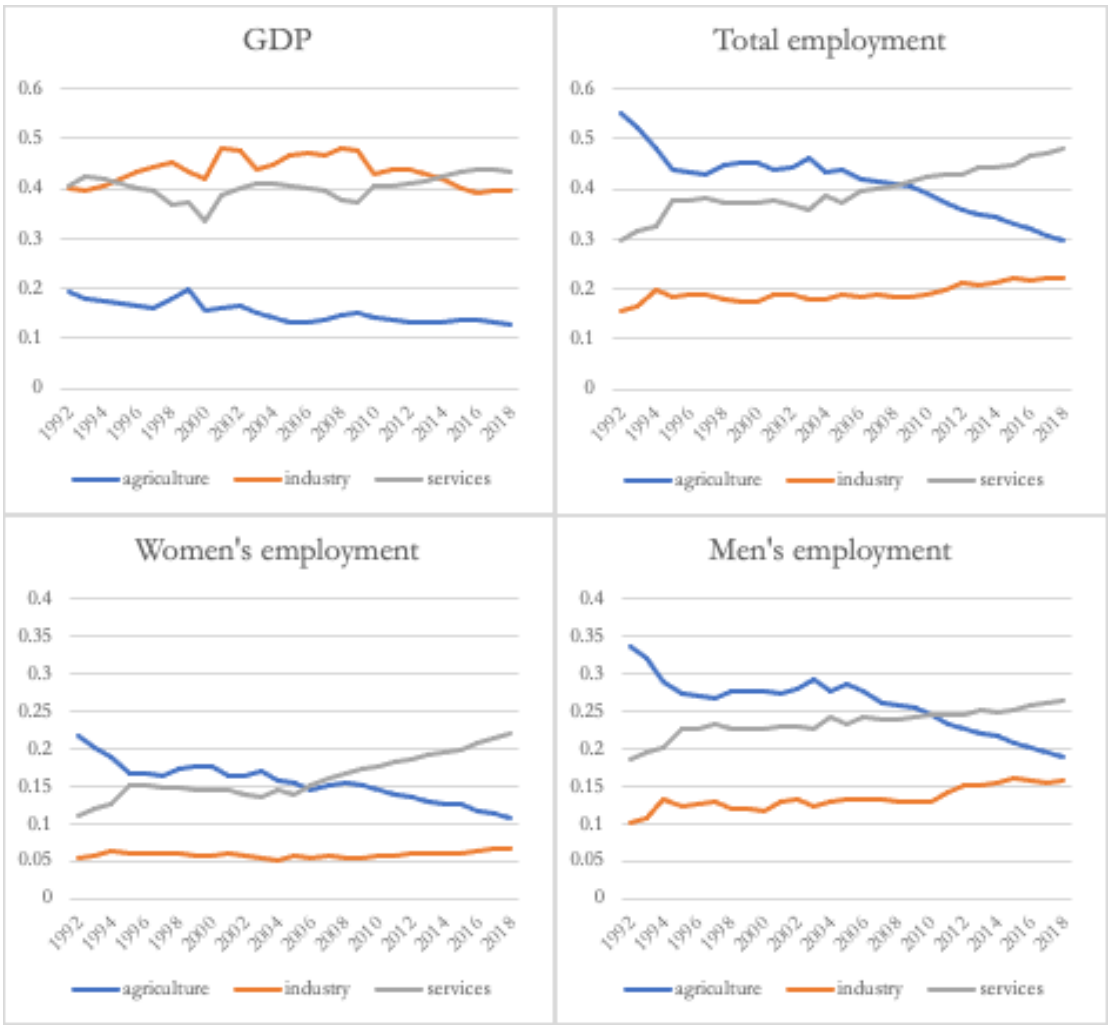
6.1 Shares of GDP and employment: agriculture, industry and services

Figure 7 illustrates value added versus employment shares for the aggregate sectors of agriculture, industry (including mining, manufacturing, utilities and construction) and services during the period 1992-2018. Focusing first on value added, agriculture value added as a share of GDP has been slowly declining over the past few decades, starting off with a share of 19.5 percent in 1992 and declining to 12.8 percent of GDP in 2018. Industrial value added started off the period at a relatively high level, at 40.0 percent, peaking at 48.1 percent in 2008, and declining again to reach 39.7 percent of GDP 10 years later. Services as a share of value added has been relatively flat over the period as well, starting off at 40.1 percent of GDP in 1992 and ending at 43.4 percent in 2018.[8]

Relative to value added shares, the shares of agriculture, industry and services in total employment changed much more. Particularly stark is the declining importance of agricultural employment, which started the period at 55.2 percent of total employment, and declined about 25 percentage points to reach just 29.6 percent of total employment in 2018. As illustrated in Figure 7, this declining trend flattened out in the mid-1990s to early 2000s, and then started downward again (in line with the contractionary effects of the Asian Financial Crisis). Industrial employment as a share of the total has slowly grown, from 15.3 to 22.2 percent of total employment, a nearly seven percentage point increase. Services employment has grown a lot faster, increasing from 29.5 percent in 1992 to 48.1 percent of total employment in 2018. Most of the employment that has shifted out of agriculture went into the services sector, even as shares of value added have remained relatively flat.

[8] The discrepancy in the total (industry plus services plus agriculture totaling less than 100 percent) is due to the exclusion of financial intermediary services indirectly measured and net indirect taxes, which varies from year to year.

Figure 7. Shares of GDP and Employment, Total and by Gender, 1992–2018, Indonesia



Note: Data on sectoral value added as a share of GDP is drawn from World Development Indicators database. Shares of employment are based on ILO modelled estimates from ILOSTAT. Note that value added shares presented for agriculture, industry, and services may not always add up to 100 percent due to the exclusion of financial intermediary services indirectly measured (FISIM) and net indirect taxes.

To get a sense of comparative patterns, we can consider the same figures for China in **Annex Figure A.1.** Here, agricultural value added as a share of GDP declined from 21.3 to 7.0 percent between 1992 and 2018, accompanied by a decline in the industrial value added share from 43.1 to 39.7 percent, and a large increase in the services value added share from 35.6 to 53.3 percent. Changes in employment shares have been starker, with agricultural employment shares declining from 58.5 to 26.1 percent of total employment (a shift similar in magnitude to Indonesia's), and industry moving from 21.7 to 28.3 percent of total employment, even as the share of industrial value added declined somewhat. As in Indonesia, the majority of employment transitions flowed out of agriculture and into services, which increased from 19.8 to 45.6 percent of total employment. Changes in value added and employment shares in China and Indonesia, at least at the aggregate level of agriculture, industry and services, are similar.

At the bottom of Figure 7, total employment shares are subdivided into women's and men's employment as a share of total (women plus men) employment. We can consider these changes relative to the changes in men's and women's participation in employment, which are presented at the top of **Table 5**. Table 5 lists average employment participation for women and men in three time periods, 1990-99, 2000-09, and 2010-18 for both Indonesia and the three major developing regions. Starting at the top of Table 5 and comparing the 1990s and 2010s, both women's and men's employment participation remained relatively flat. During the 2000-09 period, however, employment participation declined, primarily in the first half of that decade, but has since recovered. Relative to the average for the South-Eastern and Eastern Asian regions, Indonesian women's employment participation is about ten percentage points lower, suggesting that increasing their participation in paid work could be an important target for development and productivity growth policies.

Table 5. Employment to population ratios by gender, Indonesia and developing regions

	Period	Women	Men	Women/Men
Indonesia	1991-99	47.4	79.4	59.7
	2000-09	44.2	78.0	56.7
	2010-19	49.3	79.0	62.4
Developing Africa				
Northern Africa	1991-99	17.6	61.3	28.8
	2000-09	19.1	61.7	30.9
	2010-19	19.3	62.1	31.1
Southern Africa	1991-99	34.5	54.3	63.5
	2000-09	36.2	51.8	69.9
	2010-19	40.9	53.5	76.4
Eastern Africa	1991-99	66.6	79.0	84.2
	2000-09	66.3	77.9	85.0
	2010-19	66.2	77.5	85.5
Western Africa	1991-99	54.9	73.3	74.9
	2000-09	54.3	70.6	76.9
	2010-19	52.9	67.1	78.9
Middle Africa	1991-99	59.2	69.5	85.2
	2000-09	59.2	70.0	84.5
	2010-19	58.8	70.5	83.5
Developing America				
South America	1991-99	44.1	74.6	59.2
	2000-09	47.6	74.0	64.4
	2010-19	51.2	74.5	68.8
Central America	1991-99	37.6	80.3	46.8
	2000-09	41.1	78.5	52.4
	2010-19	43.7	77.3	56.5
Caribbean	1991-99	41.8	70.6	59.2
	2000-09	43.8	68.4	64.0
	2010-19	46.8	67.6	69.2
Developing Asia				
Southern Asia	1991-99	28.8	78.0	36.9
	2000-09	30.2	76.9	39.3
	2010-19	30.3	74.1	40.9
Eastern Asia	1991-99	57.6	75.1	76.8
	2000-09	57.3	72.2	79.3
	2010-19	57.0	71.5	79.7
Western Asia	1991-99	23.1	75.8	30.5
	2000-09	23.7	73.8	32.1
	2010-19	26.6	75.4	35.3
South-Eastern Asia	1991-99	59.5	79.9	74.4
	2000-09	58.6	78.8	74.3
	2010-19	59.8	78.7	76.0

Note: Ratios refer to annual averages by time period. Data drawn from WDI database, based on ILO modeled estimates. Regional classification based on UN classification by region and level of development.

Turning again to Figure 7 for Indonesia, women's employment share in agriculture has declined, moving from 21.5 to 10.8 percent of total employment over the period. Though men still predominate in agricultural employment, a similar decline in magnitude occurred for them, from 33.7 to 18.8 percent of total employment between 1992 and 2018. Employment shares in industry increased slightly for women, from 5.2 to 6.7 percent of total employment, and much more for men, from 10.0 to 15.6 percent. Both women and men shifted into services employment, with women's services employment share increasing from 11.1 to 21.8 percent (a change of about 10.5 percentage points), and men's share increasing from 18.4 to 26.2 percent (a change of about 8.0 percentage points). From a gender perspective, the shift out of agriculture into services is apparent for both women and men, but more so for women.

In sum, then, industrial value added has remained an important part of Indonesian GDP. Larger changes are happening on the employment side, with big shifts occurring out of agriculture and primarily into services employment, particularly for women.

6.2 The sectoral distribution of employment and labor productivity gaps by gender

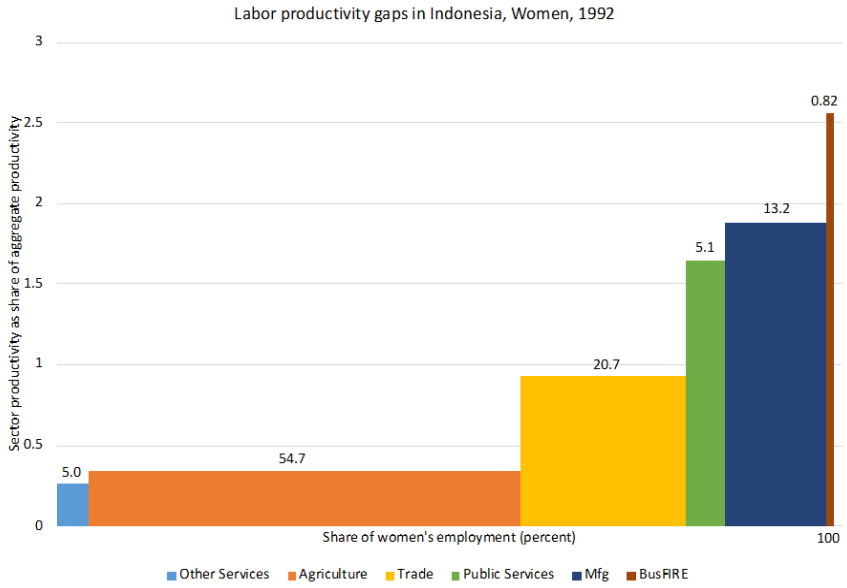
To consider these patterns with more sectoral detail, **Figure 8** illustrates the distribution of women's and men's employment across nine sectors in 1992 (on the left) and 2018 (on the right), and how those concentrations correspond with labor productivity gaps. The horizontal axes measure the sectoral shares of employment by gender, and total 100 percent. The widths of the columns correspond to the size of that share, which is also noted in the values at the top of each column. So, for instance, in 1992, 54.7 percent of women's employment in Indonesia was in agriculture, as was 51.3 percent of men's.

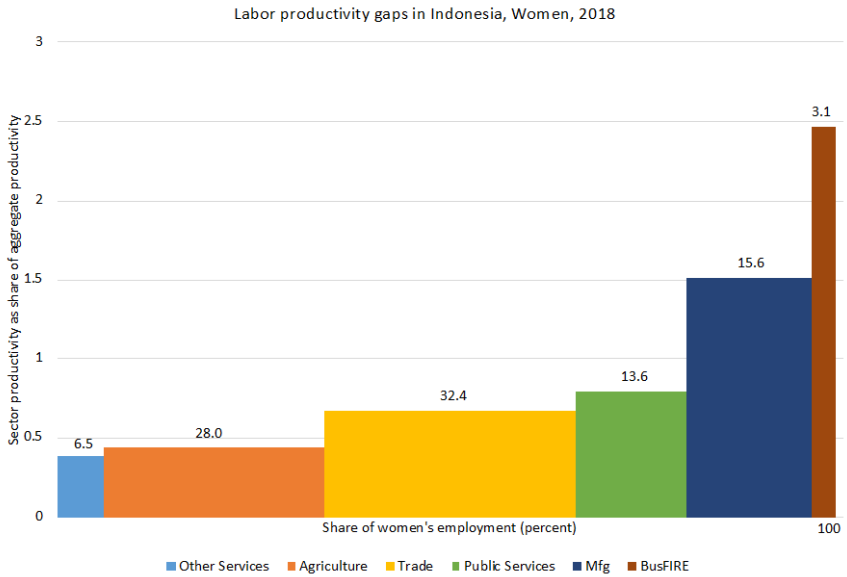
The height of each column corresponds to the value of the labor productivity (real output divided by employment) in that sector divided by the economy's overall or aggregate labor productivity. It thus measures that sector's relative labor productivity (RLP), the value of which corresponds to the y-axis. The columns are arrayed in increasing value of relative labor productivity, with the lowest for other services (0.26 in 1992 and 0.39 in 2018). (Note also that the column height is the same for women and men, as it measures that sector's relative labor productivity, which is the same for both.) Where sector employment shares are too narrow to appear, the employment share and RLP values are noted at the bottom of each figure.

Starting with women at the top of Figure 8, one can see the dynamics illustrated in the bottom of Figure 7, but there the denominator is total employment (women plus men). By contrast, in Figure 8 the denominator is women's total employment. Thus, Figure 7 illustrates how

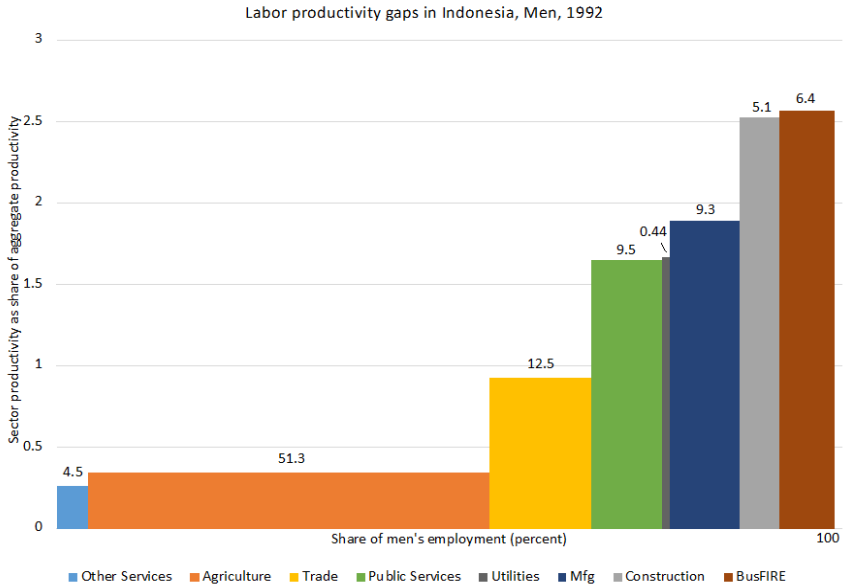
important women's employment is *to that sector's employment*, and Figure 8 illustrates how important a sector is *for women's employment*. For instance, though men constitute a majority of workers in agriculture, that sector is about equally important to women and men as a source of employment (owing to women's lower participation in employment).

Figure 8. Labor Productivity Gaps by Sector and Gender in Indonesia, 1992 and 2018

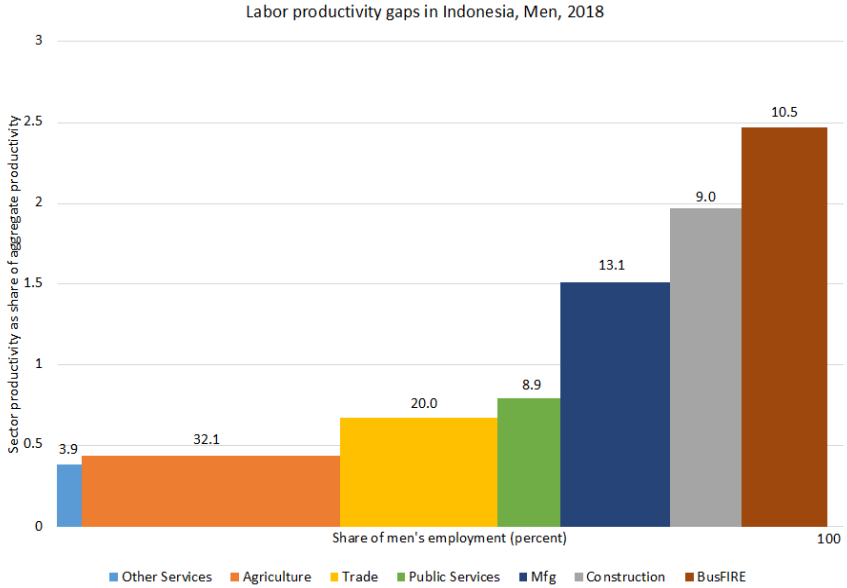




(Note: Emp share/LP for Utilities 0.07/1.67 Construction 0.28/2.5 and Mining 0.30/19.6)



(Note: Emp share/LP for Mining 0.90/19.6)



(Note: Emp share/LP for Utilities 0.84/1.98 and Mining 1.6/6.5)

Between 1992 and 2018, agricultural employment as a share of women's total employment declined from 54.7 to 28.0 percent. The biggest growth sectors included trade services, whose share increased from 20.7 to 32.4 percent of women's employment, and public services, which increased from 5.1 to 13.6 percent. Note that women's employment is concentrated in low productivity sectors (here defined as less than 1.0 times aggregate labor productivity), including other services, agriculture and trade services in 1992, and in 2018 those three sectors plus public services, which declined in RLP over the period. In 2018, low productivity sectors together totaled 80.5 percent of women's employment, nearly the same as in 1992 at 80.4 percent. Among higher productivity sectors, manufacturing is a significant sector for women, constituting 15.6 percent of their employment in 2018, higher than men's at 13.1 percent. Its relative labor productivity was 1.5 times aggregate labor productivity in 2018. These gains to an important extent reflect the intentional development of export-oriented labor intensive industries like textiles, apparel and electronics, industries that also primarily employ women (Kis-Katos et al. 2018).

Looking to the distribution for men, their shift out of agriculture, which declined from 51.3 to 32.1 percent of men's employment, was largely into trade services (from 12.5 to 20.0 percent), manufacturing (from 9.3 to 13.1 percent), construction (from 5.1 to 9.0 percent) and business services (from 6.4 to 10.5 percent). Adding up the share of men's employment in sectors with less than a 1.0 value for relative labor productivity, the total share slightly declined from 68.3 percent in 1992 to 64.9 percent in 2018. Compared with women's employment, men have much higher shares in construction and business services, both of which have high relative labor productivities (1.9 for construction and 10.5 for business in 2018). Importantly, the business, finance and real estate sector can be relatively "noisy" for development, offering limited employment growth and more likely to be associated with speculative activities. To the extent that construction is connected with substantive infrastructure development, it can contribute more directly to structural transformation. We will investigate these prospects more directly in the next sections on the sources of productivity growth.

Comparing these figures to China in **Annex Figure A.2**, there are a number of broad similarities. Totaling gendered employment shares in sectors where the relative labor productivity is less than 1.0 times aggregate productivity, i.e., low productivity, the total for women declined from 58.8 percent in 1992 to 56.8 percent in 2018, while men's stayed about even, moving from 62.7 to 61.7 percent. Women's employment is much more likely to be concentrated in low productivity sectors than women in Indonesia than in China, with larger gender gaps relative to men.

Paired with women's relatively low employment participation in Indonesia, increasing women's employment in higher productivity sectors like manufacturing offer important opportunities for productivity enhancing structural changes and greater gender equality in the labor market. Given women's increasing concentration in public services, and the decline in labor productivity in that sector, another important point for consideration is gaining a better understanding of why productivity in public services is declining, and how to reverse that trend.

6.3 Decomposing labor productivity growth

Figure 9 uses equation (3) to decompose annual average labor productivity growth in Indonesia into its "within" and "structural change" components for three time periods, 1991-99, 2000-09, and 2010-18. It includes the same calculations for Developing Asia and China for comparison. Adding the within and structural components gives total labor productivity growth. The 1990s were characterized by low labor productivity growth, which averaged 0.71 percent per year. Most of that growth was due to labor transitioning into higher productivity activities, as indicated by the 1.46 annual average contribution by structural changes. The 2000-09 period experienced a significant turnaround in productivity growth within sectors, which averaged 3.40 percent per year. Conversely, the contribution of structural change turned negative, at -0.40 percent per year, indicating that overall production and employment was shifting from higher to lower productivity sectors, including out of mining, manufacturing and public services (more on sectoral specifics when we discuss Table 6 below). The latest period saw a return of positive labor productivity growth from structural change which averaged 0.76 percent per year, with within sector productivity maintaining a significant positive contribution at 2.37 percent per year. Overall, then, within sector productivity growth has been much more important than structural change for Indonesia's aggregate productivity growth since the early 2000s.

Compared with the Developing Asia region, productivity growth both within and across sectors has been somewhat slower in Indonesia, particularly in the 1990s, driven by a negative productivity growth in the late 1990s as the Asian Financial Crisis unfolded. Both structural change and within sector productivity has been higher in China than Indonesia across all three periods, particularly within sectors, where growth has been extremely high. This suggests that there are substantial gains possible for improving productivity growth within sectors.

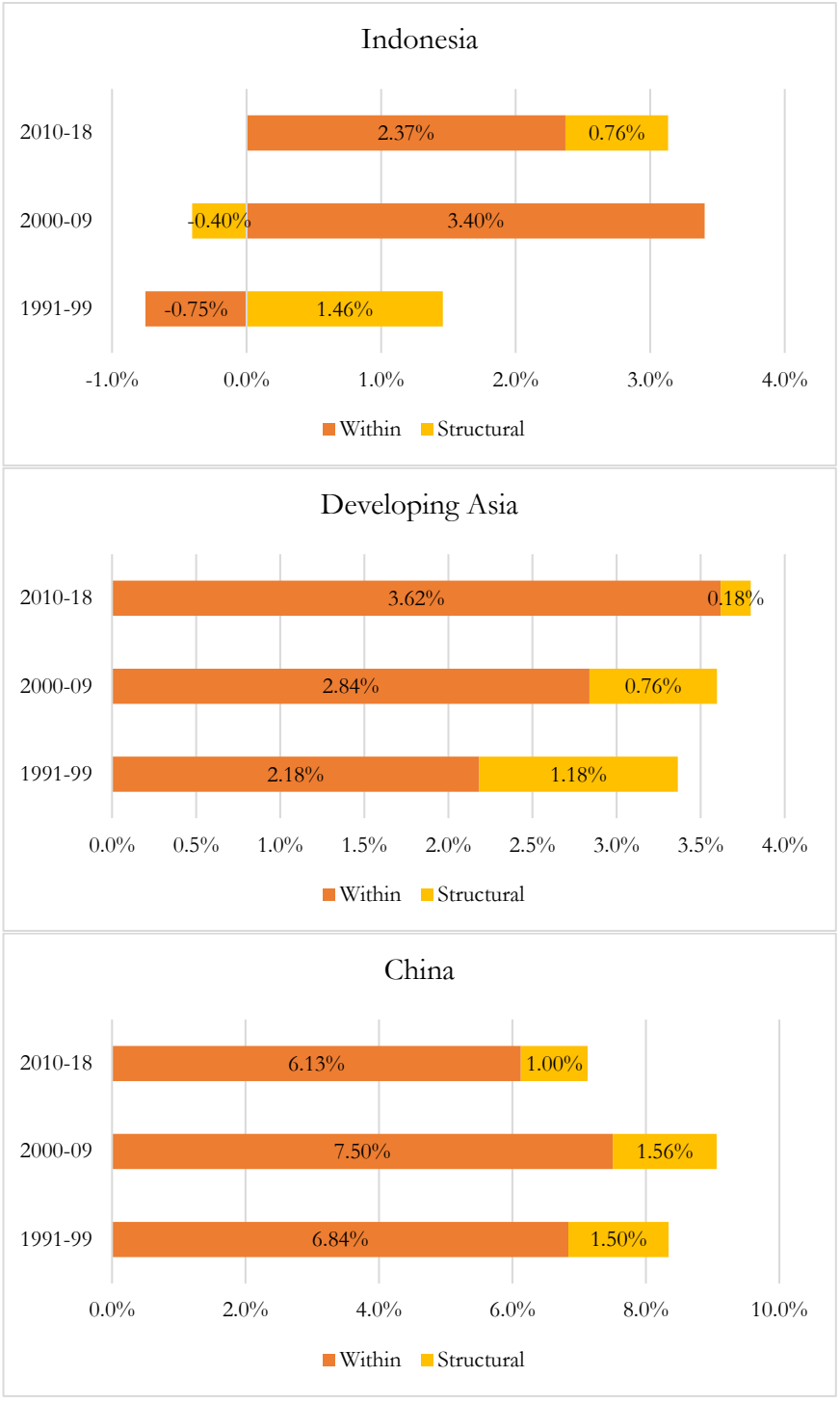
To get a more disaggregated picture of the growth patterns illustrated in Figure 9, **Table 6** uses equation (4) to generate a nine-sector decomposition of labor productivity growth by gender and time period. The top three blocks of rows show annual average productivity growth by sector and time period *within* sectors (holding employment shares constant). The first block is for women,

the second for men, and the third for total, which equals the sum of within sector productivity growth for women plus men. For instance, in 1991-99, average annual productivity within the agricultural sector increased 0.49 percent per year, with 0.30 percent associated with men's employment and 0.19 percent associated with women's. This split simply reflects the relative shares of men and women in agricultural employment, and also portrays how the distribution of gendered employment across sectors with differing productivities structurally constrains the contributions that women and men contribute to aggregate productivity growth. Focusing on the block of "total within" productivities and reading across, one can quickly ascertain both high- and low-growth sectors by time period. The total column gives the sum total of sectoral productivities for that time period.

The second three blocks of rows labeled "across" list labor productivity growth due to structural change by sector, gender and time period. These figures show how employment changes are correlated with productivity levels. Negative values indicate employment is moving out of that sector. The magnitude reflects the interaction between that sector's productivity level at the end of the period and the change in employment. Looking at the total structural change contributions in agriculture (in the sixth block of rows), for instance, the average annual contribution in 2010-18 was -0.45 percent. This reflects labor moving out of agriculture and the associated loss in production, dependent in part on productivity levels in agriculture. The hope is that labor shifts into more highly productive sectors, more than making up for this sectoral productivity loss. When both productivity and employment are growing in a sector, this indicates the possibility for more widely-shared growth and development.

The bottom block of rows details total productivity growth by sector, and is the sum of the productivity growth within and across sectors. The far right column corresponds to the total productivity growth illustrated in Figure 9: 0.71 percent per year for the 1990s, 3.00 percent for the 2000s, and 3.13 percent for the 2010s.

Figure 9. Decomposition of productivity growth by time period, Indonesia



Note: The addition of "within" and "structural" categories equals average annual total labor productivity growth for the time period referenced. Calculations are based on data drawn from the Economic Transformation Database (de Vries et al., 2021). Developing Asia includes: Bangladesh, Cambodia, China, Hong Kong, India, Indonesia, South Korea, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Chinese Taipei, Thailand, Turkey and Vietnam.

Table 6. Contributions to labor productivity growth in Indonesia, annual averages by gender and time period

	Ag	Min	Mfg	Uti	Con	Trade	Bus	Gov	Oser	Total
Within					Women					
1991-99	0.19%	0.00%	-0.05%	0.00%	0.00%	-0.17%	-0.03%	-0.10%	0.00%	-0.16%
2000-09	0.14%	0.10%	0.38%	0.01%	0.01%	0.24%	0.05%	0.06%	0.04%	1.03%
2010-18	0.26%	-0.01%	0.10%	-0.01%	0.01%	0.15%	0.12%	-0.01%	0.04%	0.65%
					Men					
1991-99	0.30%	0.00%	-0.07%	0.06%	-0.13%	-0.18%	-0.33%	-0.24%	0.00%	-0.59%
2000-09	0.24%	0.28%	0.52%	0.15%	0.25%	0.28%	0.48%	0.12%	0.04%	2.38%
2010-18	0.44%	-0.04%	0.14%	-0.05%	0.31%	0.15%	0.74%	-0.02%	0.04%	1.72%
					Total within					
1991-99	0.49%	0.00%	-0.12%	0.06%	-0.13%	-0.35%	-0.36%	-0.34%	0.00%	-0.75%
2000-09	0.38%	0.38%	0.90%	0.17%	0.26%	0.53%	0.53%	0.18%	0.08%	3.40%
2010-18	0.70%	-0.05%	0.24%	-0.06%	0.32%	0.29%	0.87%	-0.03%	0.08%	2.37%
Across					Women					
1991-99	-0.19%	0.03%	0.22%	0.00%	0.01%	0.22%	0.05%	0.15%	0.01%	0.51%
2000-09	-0.07%	-0.18%	-0.07%	-0.01%	0.00%	0.09%	0.12%	0.03%	-0.01%	-0.11%
2010-18	-0.18%	-0.02%	0.18%	0.03%	0.00%	0.16%	0.04%	0.22%	0.02%	0.46%
					Men					
1991-99	-0.31%	0.03%	0.35%	-0.01%	0.23%	0.29%	0.41%	-0.03%	-0.01%	0.95%
2000-09	-0.04%	-0.27%	-0.10%	-0.09%	0.18%	-0.01%	0.18%	-0.16%	0.01%	-0.30%
2010-18	-0.27%	0.04%	0.15%	0.07%	0.14%	0.13%	0.00%	0.06%	-0.01%	0.31%
					Total across					
1991-99	-0.49%	0.06%	0.57%	-0.01%	0.24%	0.51%	0.45%	0.13%	0.00%	1.46%
2000-09	-0.12%	-0.45%	-0.17%	-0.10%	0.18%	0.08%	0.31%	-0.14%	0.00%	-0.40%
2010-18	-0.45%	0.02%	0.34%	0.10%	0.14%	0.29%	0.04%	0.28%	0.01%	0.76%
Total productivity growth										
1991-99	0.00%	0.06%	0.45%	0.05%	0.11%	0.16%	0.09%	-0.21%	0.00%	0.71%
2000-09	0.27%	-0.07%	0.73%	0.07%	0.44%	0.61%	0.84%	0.05%	0.08%	3.00%
2010-18	0.25%	-0.03%	0.58%	0.04%	0.46%	0.58%	0.91%	0.25%	0.09%	3.13%

Note: See notes to Table 3.

There is a lot to explore in Table 6, so our discussion will focus on a few important sectors: agriculture, manufacturing, services trade and public services. Starting with agriculture, within sector productivity growth contributed an annual average of 0.49, 0.38 and 0.70 to aggregate productivity growth in the 1990s, 2000s and 2010s respectively. Weighting this productivity growth by gendered shares of employment, the contributions of men's employment is higher than women's because more men than women work in agriculture. Productivity growth within agriculture has been the largest sectoral contributor to the total within productivity growth in the latest period, almost three times as much as manufacturing.

Looking at the impact of structural change in the agricultural sector, the picture is a little different. These contributions are negative across all three time periods for both women and men because both groups have been moving out of agriculture. As noted above, agriculture's total contribution (within plus across/structural change effects) to labor productivity growth has been positive over the past couple of decades, contributing an overage of 0.27 percent per year in the 2000s and 0.25 percent per year in the 2010s.

Turning to productivity growth within the manufacturing, the picture is mixed. The 1990s witnessed negative productivity growth within that sector, averaging -0.12 percent per year, largely because of the effects of the Asian Financial Crisis In the 2000-09 period it increased substantially to an annual average of 0.90 percent, contributing the most to the economy's within total of all of the nine sectors listed. And then it declined again to just 0.24 percent per year in the 2010-18 period. Compare this to productivity growth within manufacturing in China in Appendix Table A.1, where it averaged 3.45, 2.68 and 1.92 percent per year in the three successive time periods. Referencing Appendix Table A.3 for the Developing Asia region, Indonesia's manufacturing sector productivity growth is more typical of the region of as a whole. But China's experience suggests that there are substantial gains to be had in raising labor productivity within Indonesia's manufacturing sector.

Focusing now on how structural changes have affected manufacturing's contributions to labor productivity growth, we can that, at least in the most recent period, movements of labor into manufacturing have had a larger positive effect on aggregate labor productivity than productivity growth within the sector. Productivity growth due to structural changes averaged 0.34 percent per year in the 2010-18 period, compared to 0.24 percent for productivity growth within that sector. Women's contributions to these structural change effects are slightly higher than men's (with 0.18 percent for women and 0.15 percent for men), in line with their greater movements into this sector. In important ways, the basic patterns of structural change in manufacturing are occurring in more

traditionally positive terms, at least in the last decade. But the magnitudes are small. Increasing productivity growth within that sector while maintaining (or even growing) its employment share could greatly strengthen these contributions to industrialization and development in a gender inclusive way. Given the association between technological upgrading in industry and women's industrial employment losses documented in other countries, policies designed to raise productivity growth must also ensure women maintain access to this work as jobs improve.

Despite its low level of relative labor productivity (Figure 8), trade services have witnessed solid productivity growth within the sector in the past two decades, averaging 0.53 percent per year in 2000-09 and 0.29 percent per year in 2010-18. This growth has been about evenly split between women and men in line with their similar shares of employment within the industry (though a larger share of women's employment is situated in trade services relative to men, the numbers of women and men in the sector are similar due to women's lower employment participation rates). The contributions of structural change are positive and similar for women and men as well, averaging a 0.29 percent contribution to aggregate labor productivity in the latest period, with 0.16 percent from gains in women's employment and 0.13 percent from gains in men's. Note that, despite the low level of labor productivity in this sector (where relative labor productivity was 0.67 times the aggregate in 2018), the positive contributions to productivity-enhancing structural changes are second only to manufacturing in the latest period.

Public services are important partly because it is a significant employment of both women and men (Figure 8), but also because labor productivity growth within the sector has been declining. Most of the growth decline is concentrated in the 1990s, which averaged -0.34 percent, and then increased to an average of 0.18 percent in the 2000s, before declining again to an annual average of -0.03 percent in the latest period. Largely because of the number of women shifting into this sector, in the latest period at least structural changes related to trade services have been an important positive contributor to overall productivity growth, averaging 0.28 percent annual growth in 2010-18; women's contribution was 0.22 percent, and men's 0.06 percent. Similar to trade services, employment growth in this sector has been a net positive for labor productivity growth (especially for women's employment), but these contributions are constrained by low productivity levels in the sector.

Next consider the total column on the far right, which sums up sectoral productivities. Focusing on productivity growth within sectors and comparing women and men, men's employment tends to be concentrated in sectors with higher productivity growth, as indicated by the within total for men, a 1.72 percent annual average in the latest period, versus a 0.65 percent annual average for women. This suggests that men may have greater potential to capture the

rewards of productivity growth within sectors in the form of higher wages. There is less gender disparity in structural changes, with women and men moving into higher productivity work at somewhat similar rates. This is reflected in the structural change growth of 0.31 percent for men as opposed to 0.46 percent for women in the latest period.

Checking the total productivity growth block at the bottom, note that the biggest contributors to aggregate productivity growth in the latest period were business services (0.91 percent per year), manufacturing (0.58 percent per year), and trade services (0.58 percent per year), followed closely by construction (0.46 percent per year). Looking up the column for business services, almost none of this productivity growth is due to more employment in the sector (the contributions from across/structural change versus those from within), so this sector is not very promising as a major generator of high productivity employment. The greatest sectoral potential, both in terms of employment generation and the level and growth of productivity is manufacturing, for both women and men.

6.4 Drivers of employment shares: Labor productivity and trade

In the decomposition of the sources of labor productivity growth above, we saw that men's employment is moving into sectors with higher rates of within sector productivity growth more so than women. A different way of considering these patterns is through assessing how well the level of labor productivity predicts changes in employment shares by gender. **Table 7** presents the results of an econometric analysis of these relationships (with the denominator being total, women's plus men's, employment), with lagged labor productivity levels and various measures of manufacturing trade and production as independent variables. Regressions include annual observations on nine sectors, with sectoral and time fixed effects; all variables are in logs except for changes in employment share and net manufacturing exports. The top half of the table gives results for Indonesia, with the bottom half those for China as a comparative reference.

Table 7. Labor productivity and changes in employment share, Indonesia and China, 1992–2018

Dependent variable: Changes in employment share	Indonesia					
	Women			Men		
	(1)	(2)	(3)	(4)	(5)	(6)
Labor productivity, (t-1)	0.743*	0.743*	0.743*	0.536	0.536	0.536
	(0.395)	(0.395)	(0.395)	(0.473)	(0.473)	(0.473)
Net manufacturing exports	-0.335			-0.593		
	(0.321)			(0.385)		
Medium and high tech exports as a share of manufacturing exports		-4.902			-8.672	
		(4.693)			(5.622)	
Medium and high tech manufacturing as a share of manufacturing value added			-4.888			-8.647
			(4.680)			(5.606)
Observations	243	243	243	243	243	243
	China					
	Women			Men		
Labor productivity, (t-1)	1.883***	1.883***	1.883***	1.978***	1.978***	1.978***
	(0.489)	(0.489)	-0.489	(0.543)	(0.543)	(0.543)
Net manufacturing exports	0.278***			0.283***		
	(0.0758)			(0.0843)		
Medium and high tech exports as a share of manufacturing exports		13.44***			13.72***	
		(3.670)			(4.082)	
Medium and high tech manufacturing as a share of manufacturing value added			216.3***			220.8***
			-59.05			(65.68)
Observations	243	243	243	243	243	243

Note: Calculations include annual observations on nine sectors: agriculture; mining; manufacturing; utilities; construction; trade services; business, finance, real estate, communications and transportation services; public services; and other services. Employment shares are calculated as (women's sectoral employment)/(women's + men's total employment) for women and then the same for men. All variables in logs except for change in employment share and net manufacturing exports. Regressions include sector and year fixed effects, and labor productivity is lagged one year.

Starting with the regression results in column (1) for women and (4) for men, we can see that labor productivity levels are positively correlated with changes in both women's and men's employment shares, though only the results for women are (albeit only weakly) statistically significant. A 10 percent increase in sectoral labor productivity is associated with a .074 percentage point increase in women's employment share in that sector, and a .054 percentage point increase for men. Net manufacturing exports, that is exports of manufactures less imports of manufactures, do not have any statistically significant relationship with employment (other measures of exporting and importing yield similar results), though the association is negative for both women and men. Using medium and high tech exports as a share of manufacturing exports as in columns (2) and (5), or medium and high tech manufacturing as a share of manufacturing value added as in columns (3) and (6), does not change the results, though the magnitude of the association between manufacturing activities and employment share changes gets significantly larger in (negative) magnitude.

Interestingly, the results for China are uniformly positive and statistically significant for both women and men, regardless of the measure of trade or production. This is in keeping with the fact that employment for both women and men has grown in the line with productivity, and that trade in manufactures and more technologically intensive production in China supports employment growth as well.

Summarizing the results for Indonesia, while productivity levels (as opposed to productivity growth) seem to be a stronger predictor of increases in women's employment share than men's, there is no evidence that trade in manufactures or engaging in more medium and high tech manufacturing activities positively influence employment shares. These results confirm some of the disappointing performance in manufacturing productivity growth, as well as suggests that trade has yet to deliver the sorts of productivity enhancing structural changes that policymakers often presume of it.

6.5 Concluding Discussion

Highlighting the main findings, sectoral employment shares have changed a lot more than value added over the last few decades in Indonesia. Agricultural employment as a share of the total declined about 25 percentage points. Some of these workers shifted into industry, but many more shifted into the services sector, making services the largest sectoral employer in Indonesia starting in 2009. This shift from agriculture to services is particularly pronounced for women, who are much more highly concentrated in services than men, which constituted 55.5 percent of women's employment in 2018 and 43.3 percent of men's. Significantly, these changes are cast in a context

where women's participation in employment is very low by both global and regional standards, where the ratio of women's to men's employment participation averaged just 62.4 percent over the past decade.

Turning to structural transformation, since the early 2000s, within sector productivity growth has been much more important than structural change for Indonesia's aggregate labor productivity growth. Both women's and men's employment is concentrated in low productivity agriculture and services, but women's employment is more so. At the same time, higher productivity manufacturing is a more important source of employment for women than men, in 2018 constituting 15.6 percent of their employment and 13.1 percent of men's. Productivity-enhancing structural changes, as employment has grown in manufacturing for both women and men, means that a more traditional (and virtuous) pattern of industrialization shows promise. But the overall magnitudes of these effects are still limited relative to aggregate trends. For instance, manufacturing contributed 18.5 percent of the 3.1 percent annual average aggregate labor productivity growth in Indonesia during 2000-18. For comparison, manufacturing in China contributed 26.2 percent of the 7.1 percent annual average aggregate labor productivity during that period. Given women's concentration in manufacturing, further expanding opportunities in this sector offers potential for simultaneously speeding up structural transformation and strengthening gender equality.

Increasing women's economic participation in ways that center employment generation in high productivity growth sectors should be a central feature of industrial policy. These would need to address the main barriers and disincentives to expanding women's paid work, particularly the hold of traditional gender norms and institutions that discourage this participation. Such policies should also address introducing more family friendly work arrangements and providing childcare infrastructure and flexible work options. Other supply side interventions that invest in women's education and skills in ways that break down barriers to traditionally masculine sectors like business services and more capital-intensive manufacturing would be important as well. At the heart of these interventions, however, must be the expansion of higher productivity employment opportunities that support both structural transformation and women's inclusion in industrialization.

7. Sri Lanka[9]

Sri Lanka has a strong record of growth and development over the past three decades. Annual per capita GDP growth averaged 4.4, 4.2 and 4.4 percent in the 1990s, 2000s and 2010s respectively, despite the dislocations brought about by Civil War in the 1990s and again in the late 2000s.[10] GDP growth helped support policies to advance human development. Between 1990 and 2019, the human development index for Sri Lanka has increased by over 24 per cent, from 0.629 in 1990 to 0.782 in 2019, which puts the country in the "high human development" category, and ranking 72 out of 189 countries *2020 Human Development Report* (UNDP 2020B).

In terms of gender equality, Sri Lanka has made impressive progress in closing gender gaps in education and health, with women's HDI reaching 0.759 in 2019, compared to men's HDI at 0.794. However, vital challenges for gender equality remain. In particular, women's economic participation is quite low by regional and global standards. Women's employment rate was just 31.2 percent in 2019, effectively the same as 30 years earlier. This is less than half the employment rate for men, which was 71.5 percent in 2019. Low participation in the market economy limits women's empowerment, as well as their potential contributions to growth and development. Scholars connect women's persistently low labor force participation to the strength of social norms that govern their responsibilities for the family and care work and inhibit women from joining labor markets (Solotaroff et al. 2020) In the next sections, we analyze the challenge of gender inequality in labor markets with respect to Sri Lanka's structural transformation and aggregate labor productivity growth.

7.1 Shares of GDP and employment: agriculture, industry and services

Figure 10 illustrates value added versus employment shares for the aggregate sectors of agriculture, industry (including mining, manufacturing, utilities and construction) and services during the period 1992-2018. Focusing first on value added, agriculture value added as a share of GDP declined throughout the period, starting at 26.1 percent of GDP in 1992 and ending at 8.0 percent of GDP in 2018.[11] The decline in agricultural value added was replaced largely with services value added, whose share of GDP increased from 48.0 to 57.3 percent between 1992 and 2018. The share of industrial value added in GDP has stayed roughly level at around 26 percent, maxing

[9] Note that each country section is designed to be a stand-alone subsection read on its own. As a result, there will be some repetition in the explanation of how figures and tables were derived, as well as for some of the regional and China comparisons.
[10] Data drawn from the World Development Indicators Database.
[11] The discrepancy in the total (industry plus services plus agriculture totaling less than 100 percent) is due to the exclusion of financial intermediary services indirectly measured and net indirect taxes, which varies from year to year.

out in 2006 at 30.6 percent of GDP. It is notable these transitions occurred despite the Civil War, with significant causalities (defined as more than 1,000 in one year) throughout the 1990s and again in 2006-09, when the War concluded (deVries et al. 2021).

Looking now at changes in sectoral employment shares, these have mirrored changes in value added. Employment has shifted out of agriculture, declining from 45.0 to 25.4 percent of total employment over the period, with most of that decline happening since the early 2000s. The shift out of agriculture has been primarily into services employment, but industry experienced significant gains as well. Services grew from 35.0 to 46.6 percent of total employment between 1992 and 2018, with the industrial employment share increasing eight percentage points from 20.0 to 28.0 percent.

To get a sense of comparative patterns, we can consider the same figures for China in **Annex Figure A.1.** Here, agricultural value added as a share of GDP declined from 21.3 to 7.0 percent between 1992 and 2018, changes similar in magnitude to those experienced in Sri Lankan agriculture. The declining importance of agriculture was accompanied by a small decline in the industrial value added share from 43.1 to 39.7 percent, and a large increase in the services value added share from 35.6 to 53.3 percent. Changes in employment shares in China have been starker, with agricultural employment shares declining from 58.5 to 26.1 percent of total employment, and industry moving from 21.7 to 28.3 percent of total employment, even as the share of industrial value added declined somewhat as in Sri Lanka. The majority of employment transitions in China flowed out of agriculture and into services, whose share of total employment increased from 19.8 to 45.6 percent. Comparing Sri Lanka and China, while agricultural value added shares are similar, the share of industry in GDP is larger in China, with services taking up the gap in Sri Lanka. Employment shares across agriculture, industry and services in the two countries are quite similar, suggesting industrial productivity has a lot of potential for growth in Sri Lanka. We will return to this question in section 7.4 on decomposing labor productivity growth.

At the bottom of Figure 10, total employment shares are subdivided into women's and men's employment as a share of total (women plus men) employment. We can consider these changes relative to the changes in men's and women's participation in employment, which are presented at the top of **Table 8**. Table 8 lists average employment participation for women and men in three time periods, 1990-99, 2000-09, and 2010-18 for both Sri Lanka and the three major developing regions. Starting at the top of Table 8, both women's and men's employment participation increased somewhat over the past 30 years. Sri Lankan women's employment participation is in line with levels for the Southern Asia region, which is quite low by global standards. For instance, relative to the averages for Eastern and South-Eastern Asia, Sri Lankan

women's employment participation is about twenty-five percentage points lower, indicating that increasing women's participation in paid work is an important target for development and structural transformation policies as well as gender equality.

Figure 10. Shares of GDP and Employment, Total and by Gender, 1992–2018, Sri Lanka

Note: Data on sectoral value added as a share of GDP is drawn from World Development Indicators database. Shares of employment are based on ILO modelled estimates from ILOSTAT. Note that value added shares presented for agriculture, industry, and services may not always add up to 100 percent due to the exclusion of financial intermediary services indirectly measured (FISIM) and net indirect taxes.

Table 8. Employment to population ratios by gender, Sri Lanka and developing regions

	Period	Women	Men	Women/Men
Sri Lanka	1991-99	31.0	70.2	44.2
	2000-09	32.8	72.7	45.1
	2010-19	32.3	73.3	44.1
Developing Africa				
Northern Africa	1991-99	17.6	61.3	28.8
	2000-09	19.1	61.7	30.9
	2010-19	19.3	62.1	31.1
Southern Africa	1991-99	34.5	54.3	63.5
	2000-09	36.2	51.8	69.9
	2010-19	40.9	53.5	76.4
Eastern Africa	1991-99	66.6	79.0	84.2
	2000-09	66.3	77.9	85.0
	2010-19	66.2	77.5	85.5
Western Africa	1991-99	54.9	73.3	74.9
	2000-09	54.3	70.6	76.9
	2010-19	52.9	67.1	78.9
Middle Africa	1991-99	59.2	69.5	85.2
	2000-09	59.2	70.0	84.5
	2010-19	58.8	70.5	83.5
Developing America				
South America	1991-99	44.1	74.6	59.2
	2000-09	47.6	74.0	64.4
	2010-19	51.2	74.5	68.8
Central America	1991-99	37.6	80.3	46.8
	2000-09	41.1	78.5	52.4
	2010-19	43.7	77.3	56.5
Caribbean	1991-99	41.8	70.6	59.2
	2000-09	43.8	68.4	64.0
	2010-19	46.8	67.6	69.2
Developing Asia				
Southern Asia	1991-99	28.8	78.0	36.9
	2000-09	30.2	76.9	39.3
	2010-19	30.3	74.1	40.9
Eastern Asia	1991-99	57.6	75.1	76.8
	2000-09	57.3	72.2	79.3
	2010-19	57.0	71.5	79.7
Western Asia	1991-99	23.1	75.8	30.5
	2000-09	23.7	73.8	32.1
	2010-19	26.6	75.4	35.3
South-Eastern Asia	1991-99	59.5	79.9	74.4
	2000-09	58.6	78.8	74.3
	2010-19	59.8	78.7	76.0

Note: Ratios refer to annual averages by time period. Data drawn from WDI database, based on ILO modeled estimates. Regional classification based on UN classification by region and level of development.

Women's limited participation in paid employment is also apparent in the bottom of Figure 10. Starting in the late 1990s, they shifted out of agriculture and primarily into services. Women's agricultural employment as a share of total employment (women plus men) declined from 14.3 to 9.3 percent between 1992 and 2018, with the same figure for services increasing from 8.7 to 14.9 percent, and a small increase in women's industrial employment from 7.0 to 8.5 percent. Men's shift out of agriculture was much larger in magnitude, though there are about twice as many men working in that sector than women; men's agricultural employment as a share of the total declined from 30.1 to 16.1 percent between 1992 and 2018. Men's share of employment shifted about evenly into industrial employment, where men's share of the total increased from 13.0 to 19.5 percent over the period, and services employment, where men's share of the total increased from 26.3 to 31.7 percent. From a gender perspective, the shift out of agriculture into services is apparent for both women and men, but men have been much more likely to shift work into the industrial sector than women.

Even though women's employment participation in Sri Lanka is low by global standards, there has long been substantial out-migration of workers to other countries among both women and men, particularly to the Gulf States, India, and a handful of advanced economies including the United Kingdom, Canada, Australia and the United States. Women constitute about 40 percent of departures in recent years, with most concentrated in low-skill domestic work in line with their traditional family responsibilities, while men are concentrated in so-called higher skill industrial work, especially in the construction trades (Weeraratne 2021). To get a sense of magnitude, in 2019 we estimate the stock of Sri Lankan nationals working abroad equaled about 12 percent of the working age population (UNDESA 2019). These substantial stocks are part of what motivated the Family Background Report (FBR), introduced in 2013 in Sri Lanka to restrict mothers with children under five from seeking domestic employment abroad. It was extended to cover all women's employment abroad in 2015 (Weeraratne 2021). The policy's intention was to safeguard care for the children left behind and guard against family breakdown, but it is based on the presumption that it is mothers who are responsible for unpaid care work, and does not address the deeper structural issues that drives Sri Lankan women abroad to seek work (Ibid.). In addition to fortifying gender norms and stereotypes that task women with unpaid care work and men as being the head of the household, the policy does not address the lack of employment opportunities for women in Sri Lanka.

7.2 The sectoral distribution of employment and labor productivity gaps by gender

To consider gendered employment in more sectoral detail, **Figure 11** illustrates the distribution of women's and men's employment across nine sectors in 1992 (on the left) and 2018 (on the right), and how those concentrations correspond with labor productivity gaps. The horizontal axes measure the sectoral shares of employment by gender, and total 100 percent. The widths of the columns correspond to the size of that share, which is also noted in the values at the top of each column. So, for instance, in 1992, 43.7 percent of women's employment in Sri Lanka was in agriculture, as was 39.4 percent of men's.

The height of each column corresponds to the value of that sector's labor productivity (real output divided by employment) divided by the economy's overall or aggregate labor productivity. It thus measures that sector's relative labor productivity (RLP), the value of which corresponds to the y-axis. The columns are arrayed in increasing value of relative labor productivity, with the lowest for agriculture (0.36 in 1992 and 0.31 in 2018). (Note also that the column height is the same for women and men, as it measures that sector's relative labor productivity, which is the same for both.) Where sector employment shares are too narrow to appear, the employment share and RLP values are noted at the bottom of each figure.

Starting with women at the top of Figure 11, one can see the sectoral dynamics illustrated in the bottom of Figure 10, but there the denominator is total employment (women plus men). By contrast, in Figure 11the denominator is women's total employment. Thus, Figure 10 illustrates how important women's employment is *to that sector's employment*, and Figure 11 illustrates how important a sector is *for women's employment*. For instance, though men constitute a majority of workers in agriculture, that sector is a more important source of employment for women than men, owing to women's lower participation in employment.

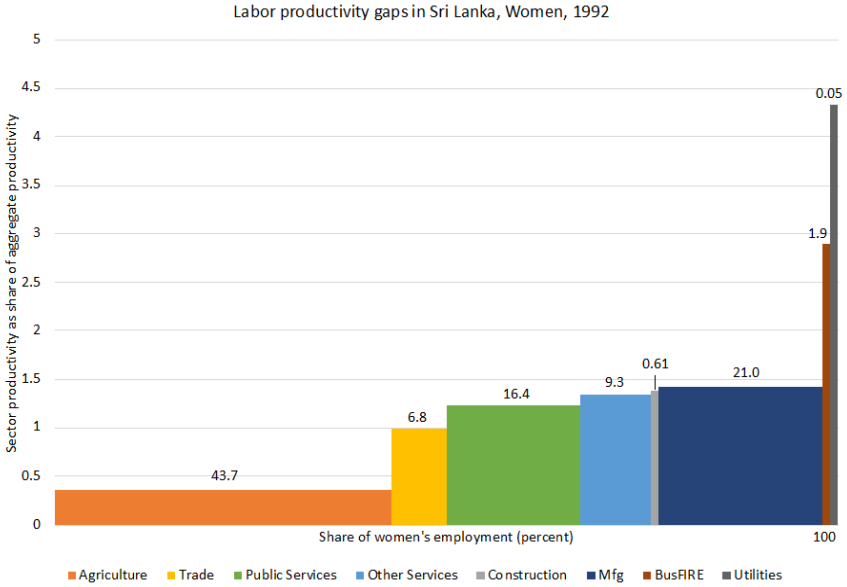
Between 1992 and 2018, agricultural employment as a share of women's total employment declined from 43.7 to 28.4 percent. To a lesser extent, women's employment also shifted out of other services, which declined as a share of women's employment from 9.3 to 4.3 percent. Note that the latter decline occurred as other services increased in relative labor productivity, from 1.35 times aggregate productivity in 1992 to 2.50 times in 2018. Growing sectors for women's employment between 1992 and 2018 included trade services, whose share of women's employment increased from 6.8 to 14.3 percent, and to a lesser extent public services, which increased from 16.4 to 19.6 percent, and manufacturing, which increased from 21.0 to 25.1 percent. Note that as public services and manufacturing increased in importance for women's employment, relative

sectoral labor productivities declined, from 1.24 to 0.85 in public services, and from 1.42 to 0.95 in manufacturing.

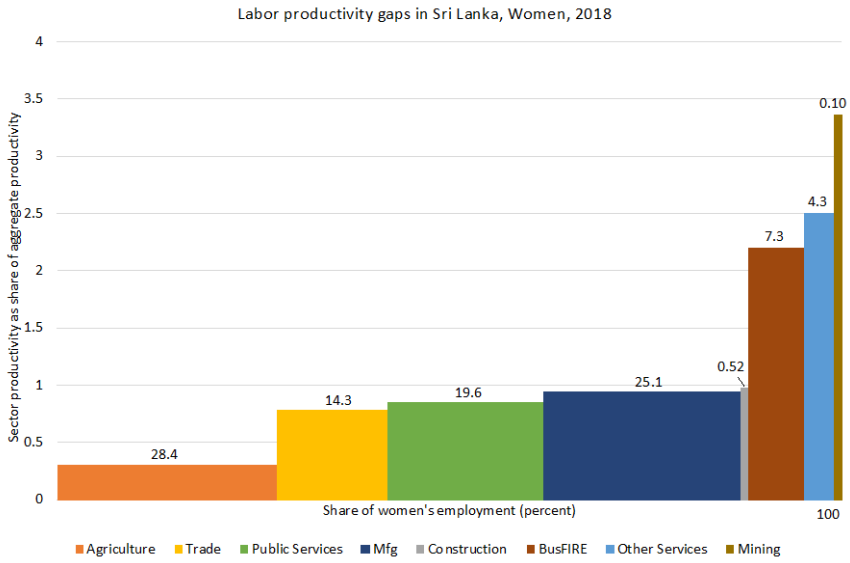
Adding up employment shares in low productivity sectors, defined as those where labor productivity is less than 1.0 times aggregate productivity, 50.7 percent of women's employment was in low productivity sectors in 1992, compared to 87.4 percent in 2018, a tremendous increase in the concentration of women in low productivity employment. Most of this change is related to women moving into manufacturing and trade services as the relative labor productivity of these sectors declined. As noted above, RLP in manufacturing decreased from 1.42 times aggregate productivity in 1992 to 0.95 times in 2018; that in trade services decreased from 0.99 times in 1992 to 0.79 times in 2018. Given the changing productivities across sectors, it helps to consider the weighted average of RLP associated with women's employment, calculated by multiplying sectoral RLP by the share of women's employment in that sector. The weighted average RLP for women equaled 0.92 in 1992 and 0.89 in 2018, so relative labor productivity weighted by employment shares did decline, though not nearly as much as employment shares alone would suggest.

Like women, the share of men's employment in agriculture also declined, moving from 39.4 percent of men's employment in 1992 to 24.1 percent in 2018. Men's employment increased across a number of sectors, including in manufacturing which went from 9.7 to 14.9 percent of men's employment, construction from 4.9 to 12.0 percent, business services from 8.9 to 15.1 percent, and trade services from 16.1 to 18.6 percent. Focusing on 2018, manufacturing is a lower share of men's employment (14.9 percent) than women's employment (25.1 percent). However, adding up all industrial sectors (mining, manufacturing, utilities and construction), industrial employment as a share of the total is higher for men at 28.8 percent of their employment, than for women at 26.1 percent of their employment. Also, keep in mind that because of women's much lower participation in paid employment, there are many more men working in industry than women. Referring back to Figure 10, in 2018 industrial employment as a share of the total was about 28 percent; men's employment constituted about 70 percent of that share, and women's employment 30 percent.

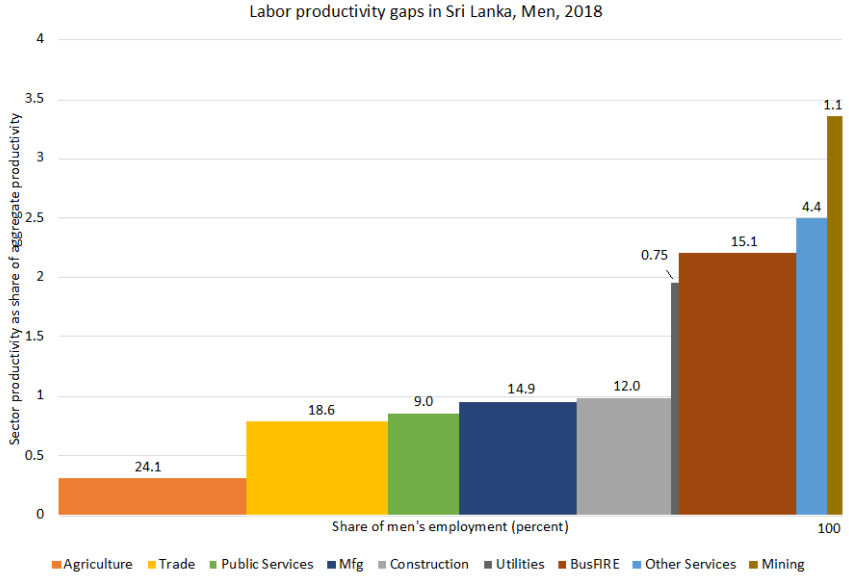
Figure 11. Labor Productivity Gaps by Sector and Gender in Sri Lanka, 1992 and 2018



(Note: Emp share/LP for Mining 0.27/0.93)



(Note: Emp share/LP for Utilities 0.35/1.96)



Given men's much higher employment participation overall, women's high share of manufacturing is distinctive. It partly reflects women's predominance in the labor-intensive export-oriented garments sector, where women can constitute upwards of 70 to 80 percent of the labor force (Lopez-Acevdo and Robertson 2016). It also provides a framework for understanding the decline in relative productivity in manufacturing, both from a cost perspective (women's wages are lower than men's), and a pricing perspective (owing to hypercompetitive global markets).

Moving on to the concentration of men in low productivity work, the share of men's employment in sectors where RLP is less than 1.0 times aggregate labor productivity, the total was 56.9 percent in 1992 and 78.7 percent in 2018. Though the share is lower than that for women, like women this share has increased over the period. For men, this increase is largely due to the decline in RLP in manufacturing and construction. Calculating the weighted average of RLP for men, in 1992 it was 1.03 and in 2018 1.05, higher than women's and experiencing a small increase.

Comparing these figures to China in **Annex Figure A.2**, there are a number of broad similarities, at least in the latest period. Totaling gendered employment shares in sectors where the relative labor productivity is less than 1.0 times aggregate productivity, i.e., low productivity, the total for women declined from 58.8 percent in 1992 to 56.8 percent in 2018, while men's stayed about even, moving from 62.7 to 61.7 percent. Comparing weighted RLP in China, for women it increased from 0.94 in 1992 to 1.00 in 2018; the values for men actually declined from 1.05 to 1.00. So there has actually been gender convergence in weighted RLP for women and men in China.

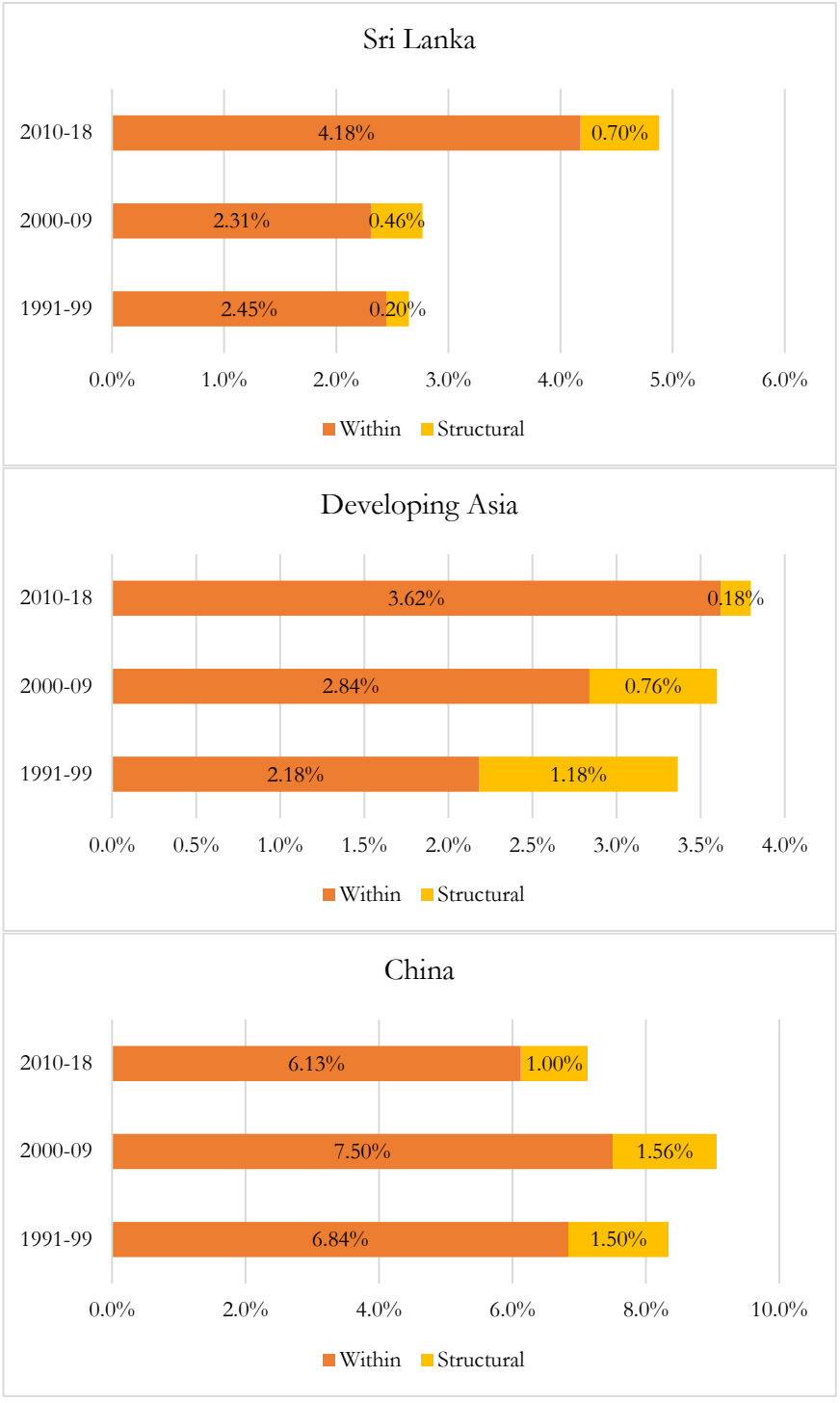
From a gender perspective, women's low participation in employment, as well as their concentration in lower productivity sectors like agriculture and trade services, greatly constrain women's capacities to contribute to growth and development, as well as the potential for growth and structural transformation to improve women's well-being and gender equality. A key target to address both would be to improve productivity in manufacturing, particularly in ways that preserve and grow women's employment and enables labor to share in the gains of productivity growth.

7.3 Decomposing labor productivity growth

Figure 12 uses equation (3) to decompose annual average labor productivity growth in Sri Lanka into its "within" and "structural change" components for three time periods, 1991-99, 2000-09, and 2010-18. It includes the same calculations for Developing Asia and China for comparison. Adding the within and structural components gives total labor productivity growth. The 1990s were characterized by moderate labor productivity growth, which averaged 2.65 percent per year. Most of that growth was due to productivity growth within sectors, as indicated by the 2.45 percent

growth rate of within sector productivity. The 2000-09 period was similar, with a little more positive contributions to productivity growth from structural change, which averaged 0.46 percent per year. In the latest period, productivity growth in Sri Lanka reached an average of 4.88 percent per year, exceeding that of the Developing Asia region both in terms of structural change and within sector productivity growth, but still a bit behind China's impressive performance. Overall, then, within sector productivity growth has been much more important than structural change for Sri Lanka's aggregate productivity growth, a pattern that has only gotten more pronounced over the past few decades. To the extent that there has been a reallocation of labor across sectors, labor is transitioning into low productivity sectors.

Figure 12. Decomposition of productivity growth by time period, Sri Lanka



Note: The addition of "within" and "structural" categories equals average annual total labor productivity growth for the time period referenced. Calculations are based on data drawn from the Economic Transformation Database (de Vries et al., 2021). Developing Asia includes: Bangladesh, Cambodia, China, Hong Kong, India, Indonesia, South Korea, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Chinese Taipei, Thailand, Turkey and Vietnam.

To get a more disaggregated picture of the growth patterns illustrated in Figure 12, **Table 9** uses equation (4) to generate a nine-sector decomposition of labor productivity growth by gender and time period. The top three blocks of rows show annual average productivity growth by sector and time period *within* sectors (holding employment shares constant). The first block is for women, the second for men, and the third for total, which equals the sum of within sector productivity growth for women plus men. For instance, in 1991-99, average annual productivity within the agricultural sector increased 0.13 percent per year, with 0.09 percent associated with men's employment and 0.05 percent associated with women's. This split simply reflects the relative shares of men and women in agricultural employment, and also portrays how the distribution of gendered employment across sectors with differing productivities structurally constrains the contributions that women and men contribute to aggregate productivity growth. Focusing on the block of "total within" productivities and reading across, one can quickly ascertain both high- and low-growth sectors by time period. The total column gives the sum total of sectoral productivities for that time period.

The second three blocks of rows labeled "across" list labor productivity growth due to structural change by sector, gender and time period. These figures show how employment changes are correlated with productivity levels. Negative values indicate employment is moving out of that sector. The magnitude reflects the interaction between that sector's productivity level at the end of the period and the change in employment. Looking at the total structural change contributions in agriculture (in the sixth block of rows), for instance, the average annual contribution in 2010-18 was -0.25 percent. This reflects labor moving out of agriculture and the associated loss in production, dependent in part on productivity levels in agriculture. The hope is that labor shifts into more highly productive sectors, more than making up for this sectoral productivity loss. When both productivity and employment are growing in a sector, this indicates the possibility for more widely-shared growth and development.

The bottom block of rows details total productivity growth by sector, and is the sum of the productivity growth within and across sectors. The far right column corresponds to the total productivity growth illustrated in Figure 12: 2.65 percent per year for the 1990s, 2.77 percent for the 2000s, and 4.88 percent for the 2010s.

There is a lot to explore in Table 9, so our discussion will focus on a few important sectors: agriculture, manufacturing, business services and other services. Starting with agriculture, within sector productivity increased substantially in the latest relative to the earlier periods, averaging 0.49 percent per year. Referencing agricultural productivity growth in Appendix Table A.3 for the Developing Asia region, which averaged just 0.18 percent per year in the 2010s, Sri Lanka's rate

of productivity growth within agriculture is strong. However, it is still lower than China's agricultural productivity growth as illustrated in Appendix Table A.1, which reached 0.66 percent in 2010-18, down from 1.27 percent in the 1990s and 0.88 percent in the 2000s. Looking at the impacts of structural change in agriculture in Sri Lanka, the contributions are nearly universally negative as labor has moved out of the sector, a proportionately stronger impact for men's employment than women's.

Turning to manufacturing, annual productivity growth within the sector averaged 0.52 percent in the 1990s, declined to 0.21 percent in the 2000s, and increased again to 0.49 percent in the 2010s. These contributions to aggregate productivity were about evenly distributed between women's and men's employment, in line with their shares of manufacturing employment. Comparing Sri Lanka to China in Annex Table A.1, where within sector productivity growth in manufacturing averaged 3.45, 2.68 and 1.92 percent in the three successive time periods, confirms that there are substantial gains to be had in improving labor productivity within manufacturing.

Table 9. Contributions to labor productivity growth in Sri Lanka, annual averages by gender and time period

	Ag	Min	Mfg	Uti	Con	Trade	Bus	Gov	Oser	Total
Within					Women					
1991-99	0.05%	0.00%	0.25%	0.00%	0.01%	0.07%	0.05%	0.16%	0.10%	0.68%
2000-09	0.07%	0.02%	0.10%	0.00%	0.00%	0.06%	0.06%	0.08%	0.31%	0.70%
2010-18	0.18%	0.02%	0.22%	0.00%	0.01%	0.12%	0.12%	0.15%	0.37%	1.18%
					Men					
1991-99	0.09%	0.03%	0.28%	0.02%	0.13%	0.30%	0.46%	0.28%	0.19%	1.77%
2000-09	0.12%	0.17%	0.12%	0.03%	0.00%	0.24%	0.38%	0.12%	0.44%	1.61%
2010-18	0.31%	0.24%	0.27%	0.03%	0.33%	0.34%	0.73%	0.18%	0.59%	3.00%
					Total within					
1991-99	0.13%	0.03%	0.52%	0.02%	0.14%	0.36%	0.51%	0.44%	0.29%	2.45%
2000-09	0.18%	0.18%	0.21%	0.04%	0.00%	0.30%	0.44%	0.20%	0.75%	2.31%
2010-18	0.49%	0.26%	0.49%	0.03%	0.34%	0.45%	0.85%	0.32%	0.96%	4.18%
Across					Women					
1991-99	0.02%	0.00%	0.06%	0.09%	-0.01%	0.07%	0.04%	-0.12%	-0.07%	0.00%
2000-09	-0.07%	-0.01%	0.14%	0.12%	0.00%	0.11%	0.16%	0.12%	-0.08%	0.37%
2010-18	-0.09%	-0.02%	0.04%	0.31%	0.01%	0.10%	0.27%	0.07%	-0.31%	0.09%
					Men					
1991-99	-0.16%	-0.01%	0.43%	0.02%	0.09%	0.04%	-0.05%	-0.07%	-0.08%	0.20%
2000-09	-0.11%	-0.03%	0.08%	0.02%	0.22%	-0.04%	0.42%	-0.10%	-0.36%	0.09%
2010-18	-0.16%	-0.06%	0.05%	0.01%	0.26%	0.14%	0.57%	-0.15%	-0.06%	0.61%
					Total across					
1991-99	-0.14%	-0.01%	0.49%	0.11%	0.08%	0.11%	-0.01%	-0.19%	-0.15%	0.20%
2000-09	-0.18%	-0.04%	0.22%	0.13%	0.22%	0.07%	0.58%	0.01%	-0.44%	0.46%
2010-18	-0.25%	-0.07%	0.09%	0.32%	0.27%	0.24%	0.84%	-0.07%	-0.38%	0.70%
Total productivity growth										
1991-99	-0.01%	0.02%	1.01%	0.13%	0.22%	0.47%	0.50%	0.24%	0.14%	2.65%
2000-09	0.01%	0.15%	0.44%	0.17%	0.22%	0.37%	1.02%	0.22%	0.31%	2.77%
2010-18	0.24%	0.19%	0.58%	0.35%	0.60%	0.69%	1.69%	0.25%	0.58%	4.88%

Note: See Table 3.

Looking at the effects of structural change in manufacturing in Sri Lanka, there has been very little aggregate productivity growth as a result of workers moving into manufacturing from lower productivity work, for both women and men. The contributions of manufacturing to productivity-enhancing structural change have been constrained both by the lack of employment growth, and the sector's low productivity. Again, the latter is connected to maintaining labor intensive export-oriented manufacturing as a key driver of the sector. While export-driven demand can theoretically create more and higher-productivity employment, the results on structural change in manufacturing indicate that the export-oriented strategies have yet to deliver significant structural transformation.

The highest annual average rate of within sector productivity growth, as least for the last two decades, has been in business services and other services. For the 2010-18 time period, productivity within the business services sector grew at an annual average rate of 0.85 percent, and other services at 0.96 percent. The two sectors together contributed about half of Sri Lanka's within sector productivity growth (which totaled 4.18 percent per year) during this latest time period. Business services also experienced strong positive growth from structural change, contributing a total of 1.7 percent per year to Sri Lanka's aggregate productivity growth and 4.88 percent per year between 2010 and 2018. Given men's higher concentration in business services, these benefits have been concentrated on men's employment, with 0.73 percent from the within effect and 0.57 percent from the structural change effect in the 2010s.

Next consider the total column on the far right, which sums up sectoral productivities. Focusing on productivity growth within sectors and comparing women and men, men's employment tends to be much more concentrated in sectors with higher productivity growth, as indicated by the within total for men, a 3.00 percent annual average in the latest period, versus a 1.18 percent annual average growth for women. This suggests that men may have greater potential to capture the rewards of productivity growth within sectors in the form of higher wages. There is less gender disparity in structural changes, with men moving into higher productivity work at somewhat faster rates than women, at least in the 2010-18 period, when labor productivity growth from structural change averaged 0.61 percent for men as opposed to 0.09 percent for women in the latest period. In the 2000s, this gender advantage was flipped, with labor productivity growth from structural change averaging just 0.09 percent for men and 0.37 percent for women.

Checking the total productivity growth block at the bottom, note that the biggest contributors to aggregate productivity growth in the latest period were business services (1.69 percent per year), trade services (0.69 percent per year), construction (0.60 percent per year), manufacturing (0.58 percent per year), and other services (0.58 percent per year). The only sector

for which structural change is a main driver of these results is business services, as noted above, and here the positive impacts are concentrated on men. In construction, trade services, and manufacturing, women have experienced very few benefits of productivity-enhancing structural change.

7.4 Drivers of employment shares: Labor productivity and trade

In the decomposition of the sources of labor productivity growth above, we saw that men's employment is moving into sectors with higher rates of within sector productivity growth more than women. A different way of considering these patterns is through assessing how well the level of labor productivity predicts employment share changes by gender. **Table 10** presents the results of an econometric analysis of changes in employment shares by gender (with the denominator being total, women's plus men's, employment), with lagged labor productivity levels and various measures of manufacturing trade and production as independent variables. Regressions include annual observations on nine sectors, with sectoral and time fixed effects; all variables are in logs except for changes in employment share and net manufacturing exports. The top half of the table gives results for Sri Lanka, with the bottom half those for China as a comparative reference.

Starting with the regression results in column (1) for women and (4) for men, we can see that labor productivity levels are positively and significantly correlated with changes in both women's and men's employment shares (the presence or absence of controls for trade and technology do not change these coefficient estimates very much). A 10 percent increase in sectoral labor productivity, on average, is associated with 0.20 percentage point increase in women's employment in a sector as a share of total employment, and a 0.05 percentage point increase in men's employment share. These correlations are positive and significant but not economically large. The major driver of these relationships is the shift out of agriculture into higher productivity sectors. If we drop that sector from the regressions, the coefficient for lagged labor productivity is statistically zero for women and -0.33 for men.

Net manufacturing exports, that is exports of manufactures less imports of manufactures, are positively and significantly associated with women's employment, but have no statistically significant association with men's. The contrasting findings on medium and high tech manufactures as a share of exports versus domestic value added in columns (2) and (3) are consistent with women's concentration in export-oriented manufacturing. A 10 percent increase in the share of medium and high tech manufactures as a share of manufactures exports is associated with a 1.1 percentage point increase in women's employment share. The same increase in medium and high tech manufactures as a share of manufacturing value added is associated with

a decline of 3.9 percentage points in women's employment share. The associations for men are not statistically significant.

Interestingly, the results for China are uniformly positive and statistically significant for both women and men, regardless of the measure of trade or production. This is in keeping with the fact that employment for both women and men has grown in line with productivity, and that trade in manufactures and more technologically intensive production in China supports employment growth as well.

Summarizing the results for Sri Lanka, while productivity levels (as opposed to productivity growth) seem to be a stronger predictor of increases in women's employment share than men's, this difference is driven by employment shifting out of the agricultural sector. Conversely, exporting manufactures is associated with more employment for women, though increasing technological intensity of domestic manufacturing value added overall seems to discourage women's employment. This is in line with findings elsewhere in the literature that technological upgrading may discourage women's employment.

Table 10. Labor productivity and changes in employment share, Sri Lanka and China, 1992–2018

Dependent variable: Changes in employment share	Sri Lanka					
	Women			Men		
	(1)	(2)	(3)	(4)	(5)	(6)
Labor productivity, (t-1)	1.945*** (0.407)	1.672*** (0.341)	1.672*** (0.341)	0.580** (0.264)	0.501** (0.222)	0.501** (0.222)
Net manufacturing exports	2.649*** (0.484)			0.0976 (0.315)		
Medium and high tech exports as a share of manufacturing exports		10.95*** (1.972)			0.328 (1.282)	
Medium and high tech manufacturing as a share of manufacturing value added			-38.90*** (7.002)			-1.166 (4.552)
Observations	198	243	243	198	243	243
	China					
	Women			Men		
Labor productivity, (t-1)	1.883*** (0.489)	1.883*** (0.489)	1.883*** -0.489	1.978*** (0.543)	1.978*** (0.543)	1.978*** (0.543)
Net manufacturing exports	0.278*** (0.0758)			0.283*** (0.0843)		
Medium and high tech exports as a share of manufacturing exports		13.44*** (3.670)			13.72*** (4.082)	
Medium and high tech manufacturing as a share of manufacturing value added			216.3*** -59.05			220.8*** (65.68)
Observations	243	243	243	243	243	243

Note: Calculations include annual observations on nine sectors: agriculture; mining; manufacturing; utilities; construction; trade services; business, finance, real estate, communications and transportation services; public services; and other services. Employment shares are calculated as (women's sectoral employment)/(women's + men's total employment) for women and then the same for men. All variables in logs except for change in employment share and net manufacturing exports. Regressions include sector and year fixed effects, and labor productivity is lagged one year.

7.5 Concluding Discussion

Sri Lanka experienced significant structural transformation over the period studied, 1992-2018, with declines in agricultural value added as a share of GDP largely replaced with services

value added, which now constitutes almost 60 percent of Sri Lanka's GDP. Employment shifts have mirrored these changes in value added, with most structural changes connected to workers shifting out of agriculture and into services, which reached 46.6 percent of Sri Lankan employment in 2018. Industrial employment also increased, now at 28.0 percent of the total. Both women and men shifted out of agriculture and into services, but men have seen faster growth in industrial employment than women.

Manufacturing is second only to agriculture as a source of employment for women, and constituted 25.1 percent of their employment in 2018, compared to 14.9 percent for men. This is connected to how women's employment has been the driving force behind export-oriented textile and garment manufacturing, where women form close to 80 percent of the total labor force (Hancock, Middleton and Moore 2012). Despite women's significance to export-oriented manufacturing, adding together all industrial sectors (mining, utilities, construction and manufacturing), industrial employment is a larger share of men's employment (28.8 percent) than women's (26.1 percent) (And note that since men's employment participation is more than twice that of women's, there are more than twice as many men in industry as women.). In light of women's low employment participation relative to men, women's relatively high participation in manufacturing is distinctive, and suggests that there is potential for further developing employment opportunities in nontraditional sorts of work in ways that support industrialization and structural transformation.

Growth decomposition results show that productivity growth within sectors has been much more important than structural change for aggregate labor productivity growth, especially in agriculture and services. The contributions of manufacturing to productivity-enhancing structural change have been limited by slow employment growth and the sector's low level of productivity. A key way to address the latter would be to develop higher value-added export production. But without concomitant employment growth, the sector's contributions to aggregate productivity growth will remain limited. To be inclusive, policies aimed at raising productivity growth must ensure that women have access to improving economic opportunities.

The gender disaggregated picture of sectoral labor productivity growth shows that men's employment tends to be much more concentrated in sectors with higher productivity growth. There is less gender disparity in structural changes, with men moving into higher productivity work at somewhat faster rates than women, at least in the 2010-18 period, when labor productivity growth from structural change averaged 0.61 percent for men as opposed to 0.09 percent for

women. While export-oriented manufacturing is associated with more employment for women, most of it has been in low-tech industries like textile and garments. On the other hand, increasing technological intensity of domestic manufacturing value added overall seems to discourage women's employment. Women's participation in high tech sectors like ICT has been constrained by social norms that influence parents' perceptions of "appropriate" educational fields for boys and girls, and by the narrow range of study and training courses that are considered to be gender appropriate (Solotaroff 2020).

To increase women's economic empowerment, the foremost aim should be to ease the main barriers to women's participation in the paid workforce, including traditional social norms and women's disproportionate responsibility for unpaid care work, as well as the lack of employment opportunities in higher productivity sectors. Social norms in Sri Lankan society steer girls and women toward domestic and care work rather than toward well-remunerated jobs. This manifests in the form of social prohibitions against women working after marriage and the educational streamlining of women into lower-paying non-technical and traditional women-dominated fields (Solotaroff 2020).

8. Recommendations for mainstreaming gender in national policies for industrialization, structural transformation and trade

Use gender as a lens into the social inclusion and development impact of industrial and trade policies. A main focus of this paper has been to illustrate how a gendered decomposition of the sources of labor productivity growth enables a better understanding of the opportunities and challenges associated with industrialization and structural transformation in the modern era, and the trade and industrial policies designed to support. These challenges and opportunities relate not just to the direct impacts on women's economic empowerment and gender equality, they also shed light on the potential of trade and industrialization to contribute to economic development in substantial, sustained, and socially inclusive ways.

From the perspective of opportunities, increasing trade in manufactures and export-led industrialization strategies raise the relative demand for women in industrial sector work, at least in the more labor-intensive stages of this production orientation. The growth of export-oriented jobs offers opportunities for women to move out of traditional agriculture, informal services, and unpaid family work and into higher productivity and better remunerated work. The association

between labor-intensive export orientation and women's employment is so strong that it appears even where traditional gender norms inhibit women's participation in the paid labor force overall, as illustrated by the cases of Indonesia and Sri Lanka explored in this paper. In an important sense, then, export-led industrialization and the trade in manufactures that accompanies it can be considered a promising vector for moving women into the paid labor force, particularly where their employment participation is otherwise limited. This enables women to better contribute to growth and development by: (1) shifting their production from unpaid to paid activities, which directly contributes to GDP growth; (2) facilitating structural transformation via the transition from lower, more traditional production activities to higher productivity work; and (3) enabling the expansion of exported manufactures in particular, with positive externalities for industrialization and growth (UNCTAD 2016).

The studies in this paper also point to a number of challenges for trade and industrial policy that taking a gender lens has helped uncover. Women tend to be more highly concentrated in sectors where both the level and growth of productivity is lower than sectors dominated by men. To the extent that women move into industrial sector work as trade in manufactures becomes a more important part of industrial production, women also tend to lose these jobs as the technological or capital intensity of industrial production increases (Seguino and Braunstein 2019; Kucera and Tejani 2014; Tejani and Milberg 2016). Though women's industrial employment is particularly sensitive to losses introduced by technological change, the weakening connection between industrialization and employment is a more general problem that affects both women and men.

Part of the story of low productivity growth in labor-intensive, export-oriented manufacturing is about price competition. Labor productivity is simply a measure of the (price) value of outputs relative to the amount of labor involved in producing it. To the extent that production for export is concentrated in highly competitive global markets, there is limited scope for raising prices or improving wages. This is particularly the case for more labor-intensive product markets, and in the context of the proliferation of global value chains (GVCs). While GVCs make it easier to participate in globalization by affording more accessibility to the lower value added links of the chain, the structure of GVCs, and the concentration of pricing power and value added at the top, can also make it difficult to climb up (UNCTAD 2016). Participation in GVCs is not enough to drive development or socially inclusive industrialization. Productivity growth must generate opportunities for labor to participate in structural transformation; using gender as a lens to evaluate the impact of trade and industrial policy can help ensure these goals come about.

Industrial and trade policies must target not just productivity growth within lead sectors or enclaves; to deliver development they must also bring about broad-based structural transformation and higher productivity employment generation for both women and men. Aggregate productivity growth is not necessarily supported by productivity growth in a particular sector or subsector. The macroeconomic impact depends on what happens to the utilization of resources, including labor. If productivity in one sector grows and releases resources into lower productivity activities, aggregate productivity can actually decline.

For the countries explored in this study, most aggregate labor productivity growth has been driven by growth within sectors. The lack of structural transformation, or the movement of labor from low- to high-productivity sectors, severely constrains the potential for this narrow form of productivity growth to contribute to development. From a gender perspective, the lack of employment opportunities can act as a barrier for gender equality, keeping women at home or in traditional economic activities despite advances in education and health. As in the case of Sri Lanka, it can also induce women to migrate to other countries in search of employment, with negative consequences for the care needs of the families left behind.

Creating industrial enclaves can be an effective way to concentrate infrastructure, investment, attract foreign direct investment, and facilitate the capture of economies of agglomeration that come with proximity. However, strong enclave performers can be disconnected from the wider economy. Highly productive enclaves may provide limited opportunities for backward and forward linkages with the domestic economy. And the more capital or technologically-intensive production that drives their performance also constrains their capacity to generate much employment. A case in point is Ethiopia, where large, highly productive manufacturing exporters do not create much employment, and economy-wide manufacturing performance has been driven by smaller, informal, and less productive firms (McMillan and Zeufack 2022).

The question then becomes how highly productive enclaves can be leveraged to make more substantial and sustained contributions to development. One possibility is to explore prospects for connecting large exporters with smaller, less productive firms, strengthening linkages between highly productive enclaves and the wider domestic economy, and creating new opportunities for productivity-enhancing spillovers. These connections could be particularly important where overall manufacturing sector productivity growth has been quite low, as in Ethiopia.

On the employment front, a key advantage of exporting is to access the scale effects of foreign demand, and to move beyond what domestic demand can support, including employment growth in industrializing sectors. But the extent of competition in global export markets constrains demand and pricing potential (particularly in the highly saturated markets for labor-intensive manufactures). A promising alternative is to look to regional trading blocks for demand and dynamism, where markets are less saturated and GVCs less established (and less likely to already be dominated by large international firms). Diversifying into regional markets could thus ease the transition into higher value added production, allowing the wage growth that is ultimately necessary to drive domestic aggregate demand and broad-based improvements in livelihoods.

Counter traditional gender norms and stereotypes that keep women from participating in trade and structural transformation on an equal footing with men, particularly in the context of increasing technological intensity and automation in industry, and prospects for greening jobs. Traditional gender norms and stereotypes constrain women's participation in market production, greatly limiting their capabilities to provision for their families and contribute to growth and development. These norms and stereotypes also underlie the labor market segmentation that keeps women concentrated in the most labor-intensive segments of industry and out of higher productivity work. With the prospect of increasing automation in industry, women's exclusion may become more pronounced. For instance, recent research among OECD countries finds that across all occupations and industries, women perform more routine tasks than men, and are thus more exposed to the risk of automation (Brussevich et al. 2018).

Similarly, with increasing calls for Keynesian-type policies for green industrialization and growth, it is also important to apply a gender lens to these new opportunities. Green jobs are projected to be more middle skill jobs, more knowledge- and skill-intensive than the jobs they replace (Chan and Lam 2012). In developing countries, women are already concentrated among some of the lower value-added activities targeted for green transformation, such as waste management and recycling, where the work is informal, unstable, and often hazardous. But waste management and recycling industries are highly formalized and automated in developed countries, as well as dominated by men (ILO 2012; Samson 2009).

Without policies designed to ensure that women workers participate in the gains brought about by technological change or the expansion of green jobs, they will be increasingly excluded from the benefits that these higher productivity (and paying) jobs create. Given the achievements

in gender equality in education and health across much of the world, this challenge is less about skill-building than addressing the gender norms and stereotypes that segregate women and men into different activities or industries, or keep women and girls from seeing themselves as leaders, innovators, or entrepreneurs.

Include social infrastructure and investments in the care economy as part of industrial policy. As the health crisis of COVID-19 lead to a severe macroeconomic crisis across the world, it also challenged the reigning macroeconomic policy consensus that governments should largely stay out of the way of markets. Industrial policy is also now back on the table, as revealed in the implicit activism of the U.N.'s and other international policy organizations' pandemic call to action to "build forward better." The "better" part refers partly to reaching beyond recovery in a way that is more socially inclusive and ecologically sustainable, as well as more effective at delivering development. From this perspective, industrial policy is not just about manufacturing. Investing in the care work that it takes to educate children; care for the sick, elderly and disabled; and maintain an able-bodied workforce on a daily basis should be a central element of industrial policy. Care provisioning is essential for well-being, as well as for the production and maintenance of the labor force and productivity growth (Braunstein 2015).

Ignoring this human dimension, and the special roles that women and girls play in providing care, implicitly presumes an unlimited supply of caring labor, and that this largely nonmarket production will seamlessly adjust to changing demands and structures in the market sector (Elson 1995). This perspective not only ignores one of the main sources of gender inequality (women's disproportionate responsibility for care), it also can undermine the objectives of the policies themselves. On the latter point, consider the case of cutting public social spending on health as a way to contain fiscal deficits or reorient spending. Because health spending cuts do not induce changes in our physical capacities, the consequent fiscal savings are compensated either through additional spending from the private sector, or through unpaid caregiving by women and girls. The latter is not costless. It can limit women's participation in paid work, as well as compromise girls' human capital investments, with negative externalities for future investments in children. Both factors lower labor-force participation and human capital investments and detract from growth and development in the immediate and longer-term, undermining the goals of fiscal spending cuts.

This negative feedback loop has been an important and persistent criticism of fiscal austerity measures that induce disinvestments in human capital and exacerbate gender inequality

(Benería and Feldman 1992; Elson 1995; Ortiz and Cummins 2013; Razavi 2007; Seguino 2020). It also underlies the nearly universal call among international development institutions to alleviate women's care burdens and support their greater participation in paid work. The economic case for doing so is clear. As the economic downturn associated with the pandemic saddled many developing countries with more debt than they can service, these issues of gender inequities and development costs embedded in fiscal austerity measures have become more important than ever (Ghosh 2020).

Relatedly, public borrowing for investing in physical infrastructure like roads and bridges is rightly substantiated because it adds to the stock of capital and yields future returns, both directly in terms of increasing output, and indirectly in terms of increasing future productivity. Likewise, public spending on education, health and care services also increases current output—not only through raising aggregate demand but by also raising women's labor participation—as well as future labor productivity. However, spending on social infrastructure is classified as government consumption, not public investment. This severely limits the scope of social infrastructure financing.

From a cost-benefit perspective, investing in the care sector is also a more efficient generator of employment and eventual tax revenues than similar public investments in physical infrastructure sectors like construction (De Henau and Himmelweit 2021). Country-level input-output simulations for South Africa, Turkey and the United States find that public spending on social infrastructure creates more employment than other types of fiscal spending, and more employment for women and low-income workers in particular (Antonopoulos and Kim 2011; İlkkaracan et al. 2015). To get a sense of magnitude, for a set of seven OECD countries, De Henau et al. (2016) simulate the relative impact of a spending increase of 2% of GDP on social versus physical infrastructure (proxied by construction). Social infrastructure spending generated between 2.4 and 6.1 percent increases in employment, versus half as much employment generation for the same spending on construction. Both women's and men's employment increase more due to social infrastructure spending because of greater multiplier effects, but women's increases more than men's, thereby lowering the gender employment gap.

One of the important challenges in this approach to public spending and infrastructure is the low wages associated with care work. Despite their providing essential care work, care-sector jobs are often very low-paying, especially when they are dominated by women (Folbre et al. 2021). To address these issues, the ILO has called for "adequate" wage policies as an accelerator of the Sustainable Development Goals, including pay for essential care work (ILO 2020). Such wage

policies can play an important role in industrial policy overall. But it does require a more expansive approach to industrial policy, one that moves beyond an exclusive focus on manufacturing. The pandemic and responses to build forward better provide an opening to do just that.

References

Altenburg, Tilmann. 2010. Industrial policy in Ethiopia. Discussion Paper #2. Bonn: German Development Institute.

Antonopoulos, Rania and Kijong Kim. 2011. *Public Job-Creation Programs: The Economic Benefits of Investing in Social Care. Case Studies in South Africa and the United States*. Working Paper No. 671. Annandale-on-Hudson: Levy Economics Institute of Bard College.

Barrientos, Stephanie and Evers, Barbara. 2013. "Gender Production Networks: Push and pull on corporate responsibility?", in S. M. Rai and G. Waylen (eds.) *New Frontiers in Feminist Political Economy*, London: Routledge, pp. 43-61.

Benería, Lourdes. 2001. "Introduction," in Lourdes Benería with Savitri Bisnath (eds.) *Gender and Development: Theoretical, Empirical and Practical Approaches*. Northampton, MA: Edward Elgar, pp. xixxi.

Benería, Lourdes and Shelley Feldman. 1992. *Unequal Burden: Economic Crises, Persistent Poverty, and Women's Work*. Boulder: Westview Press.

Berik, Gunseli and Yana van der Muelen Rodgers. 2009 "Engendering development strategies and macroeconomic policies? What's sound and sensible?" in G. Berik, Y. van der Meulen Rodgers, and A. Zammit (eds.) *Social Justice and Gender Equality: Rethinking Development Strategies and Macroeconomic Policies*, New York: Routledge for UNRISD.

Bloom, David E. and Jeffrey G. Williamson. 1997. "Demographic Transitions and Economic Miracles in Emerging Asia." NBER Working Paper No. 6268.

Braunstein, Elissa. 2021. "Gender and the Future of Industrialization in a Post-Pandemic World." Background paper *Industrial Development Report 2022*.

Braunstein, Elissa. 2019. "Gender-Inclusive Industrialization for Growth and Development in the Context of Globalization," in Diane Elson and Anuradha Seth (eds.), Gender Equality and Inclusive Growth: Economic Policies to Achieve Sustainable Development. New York: UN Women, 2019, pp. 76-106.

Braunstein, Elissa. 2015. *Economic Growth and Social Reproduction: Gender Inequality as Cause and Consequence*. UN Women Discussion Paper No. 5. New York: UN Women.

Braunstein, Elissa. 2011. *Gender and Economic Development*. Nairobi, Kenya: United Nations Human Settlements Programme (UN-HABITAT).

Brussevich, Mariya, Era Dabla-Norris, Christine Kamunge, Pooja Karnane, Salma Khalid, and Kalpana Kochar. 2018. Gender, Technology and the Future of Work. IMF Staff Discussion Note SMD/18/07.

Cameron, Lisa, Diana Contreras Suarez and William Rowell. 2019. "Female labour force participation in Indonesia: why has it stalled?" *Bulletin of Indonesian Economic Studies*. 55(2): 157–192.

Chan, C.K. and Lam, M., 2012. The Reality and Challenges of Green Jobs in China: An Exploration. *International Journal of Labour Research* 4(2): 189-207.

de Vries, Gaaitzen, Linda Arfelt, Dorothea Drees, Mareike Godemann, Calumn Hamilton, Bente Jessen-Thiessen, Ahmet Ihsan Kaya, Hagen Kruse, Emmanuel Mensah and Pieter Woltjer. 2021. "The Economic Transformation Database (ETD): Content, Sources, and Methods". WIDER Technical Note 2/2021.' DOI: 10.35188/UNU-WIDER/WTN/2021-2. Database downloaded on 28 December, 2021.

De Henau, Jerome and Sue Himmelweit. 2021. "A Care-Led Recovery From Covid-19: Investing in High-Quality Care to Stimulate And Rebalance The Economy." *Feminist Economics* 27(1-2): 453-469.

De Henau, Jerome, Sue Himmelweit, Zofia Lapniewska, and Diane Perrons. 2016. *Investing in the Care Economy. A_Gender Analysis of Employment Stimulus in Seven OECD Countries*. Brussels: International Trade Union Confederation.

Diao, Xinshen, Mia Ellis, Margaret S. McMillan, and Dani Rodrik. 2021. "Africa's Manufacturing Puzzle: Evidence from Tanzanian and Ethiopian Firms." *NBER Working Paper* No. 28344.

Elson, Diane. 1995. "Gender Awareness in Modeling Structural Adjustment." *World Development,* 23(11): 1851–1868.

Elson, Diane and Ruth Pearson. 1981. "Nimble fingers make cheap workers: An analysis of women's employment in third world export manufacturing." *Feminist Review* 7:87-107.

Folbre, Nancy, Leila Gautham, and Kristin Smith. 2021. Essential Workers and Care Penalties in the United States. *Feminist Economics* 27(1-2): 173-187.

Felipe, Jesus, Aashish Mehta and Changyong Rhee. 2019. "Manufacturing matters...but it's the jobs that count." *Cambridge Journal of Economics* 43(1): 139-168.

Ghosh, Jayati. 2020. *The COVID-19 Debt Deluge*. Project Syndicate. Published online 16 March 2020. Available at: https://www.project-syndicate.org/commentary/coronavirus-debt-crisis-by-jayati-ghosh-2020-03.

Giovannetti, G., Sanfilippo, M. and Vivoli, A. 2021. "Trade liberalization, employment and gender in Ethiopia." *UNU WIDER Working Paper* 2021/59.

Gollin, Douglas, David Lagakos and Michael E. Waugh. 2014. "The Agricultural Productivity Gap." *The Quarterly Journal of Economics* 129(2): 939-993.

Hancock, Peter, Sharon Middleton and Jamie Moore. 2012. "Gender, globalisation and empowerment: a study of women who work in Sri Lanka's Export Processing Zones." *Work Organisation, Labour & Globalisation*. 6(1): 131-146.

İlkkaracan, İpek, Kijong Kim, and Tolga Kaya. 2015. *The Impact of Public Investment in Social Care Services on Employment, Gender Equality and Poverty*. Istanbul Technical University Women's Studies Center in Science, Engineering and Technology, Levy Economics Institute, ILO, UNDP and UN Women, Istanbul.

ILO. 2020. *Global Wage Report 2020-21: Wages and Minimum Wages in the Time of Covid-19*. Geneva: International Labour Organization.

ILO. 2019. *Baseline report for the ILO program "SIRAYE: Advancing decent work and industrialization in Ethiopia."* Geneva: ILO.

ILO. 2018. *World Employment and Social Outlook: Trends 2018*. Geneva: ILO.

ILO. 2012. *Working Towards Sustainable Development: Opportunities for Decent Work and Social Inclusion in a Green Economy*. Geneva: International Labour Organization.

ILO. 2009. *Global Employment Trends for Women March 2009*. Geneva: ILO.

Kaldor, Nicholas. 1966. *Causes of the Slow Rate of Economic Growth in the United Kingdom*. Cambridge: Cambridge University Press.

Kis-Katos, Krisztina, Janneke Pieters and Robert Sparrow. 2018. "Globalization and social change: Gender-specific effects of trade liberalization in Indonesia." *IMF Economic Review* 66(4): 763-793.

Kucera, David and Sheba Tejani. 2014. "Feminization, Defeminisation and Structural Change in Manufacturing." *World Development* 64: 569-582.

Lopez-Acevedo, Gladys and Raymond Robertson. 2016. *Stitches to Riches?: Apparel Employment, Trade, and Economic Development in South Asia*. Washington D.C.: The World Bank.

McMillan, Margaret and Dani Rodrk. 2011. "Globalization, Structural Change and Productivity Growth." NBER Working Paper 17143.

McMillan, Margeret and Albert Zeufack. 2022. "Labor Productivity Growth and Industrialization in Africa." *Journal of Economic Perspectives* 36(1): 3-32.

Moller, Lars Christian. 2015. *Ethiopia's great run: the growth acceleration and how to pace it*. Washington, D.C., World Bank Group.

Moser, Caroline O.N. 1993. Gender Planning and Development: Theory, Practice and Training. New York: Routledge.

Ocampo, José Antonio. 2005. "The Quest for Dynamic Efficiency: Structural Dynamics and Economic Growth in Developing Countries," in José Antonio Ocampo (ed.) *Beyond Reforms. Structural Dynmaics and Macroeconomic Vulnerability*. Washington, DC: ECLAC and Stanford University Press.

Ortiz, Isabel and Matthew Cummins. 2013. "Austerity Measures in Developing Countries: Public Expenditure Trends and the Risks to Children and Women." *Feminist Economics* 19(3): 55-81.

Palma, José Gabriel. 2005. "Four Sources of 'De-Industrialization' and a New Concept of the 'Dutch Disease,'" in José Antonio Ocampo (ed.) *Beyond Reforms. Structural Dynamics and Macroeconomic Vulnerability*. Washington, DC: ECLAC and Stanford University Press.

Razavi, Shahra. 2007. *The Political and Social Economy of Care in a Development Context. Conceptual Issues, Research Questions and Policy Options*. UNRISD Gender and Development Programme Paper No. 3. Geneva: United Nations Research Institute for Social Development.

Rodrik, Dani. 2018. "An Africa Growth Miracle?" *Journal of African Economies* 27 (11), pp. 10-27.

Rodrik, Dani. 2016. "Premature deindustrialization." *Journal of Economic Growth* 21(1): 1-33.

Rodrik, Dani. 2013. "Unconditional Convergence in Manufacturing." *Quarterly Journal of Economics* 128(1):165-204.

Rodrik, Dani, Margaret McMillan, and Claudia Sepúlveda. 2016. "Structural Change, Fundamentals, and Growth," in Margaret McMillan, Dani Rodrik and Claudia Sepúlveda (eds.) *Structural Change, Fundamentals, and Growth: A Framework and Case Studies*. Washington, DC: IFPRI.

Samarasinghe, V. 1998. "The Feminization of Foreign Currency Earnings: Women's Labour in Sri Lanka." *Journal of Developing Areas* 32 (3), pp. 303-326.

Samson, M., 2009. *Refusing to be Cast Aside: Waste Pickers Organising Around the World*. Cambridge: Women in Informal Employment: Globalizing and Organizing.

Seguino, Stephanie. 2020. "Engendering Macroeconomic Theory and Policy." *Feminist Economics* 26(2): 27-61.

Seguino, Stephanie**.** 2010. "Gender, Distribution and Balance of Payments Constrained Growth in Developing Countries." *Review of Political Economy* 22(3): 373-404.

Seguino, Stephanie**.** 2000. "Accounting for Gender in Asian Economic Growth." *Feminist Economics* 6(3): 27-58.

Seguino, Stephanie and Elissa Braunstein. 2019. "The Costs of Exclusion: Gender Job Segregation, Structural Change and the Labour Share of Income." *Development and Change* 50(4): 976-1008.

Setyonaluri, Diahhadi, Gita Nasution, Fitri Ayunisa, Aninda Kharistiyanti and Febry Sulistya. 2014. *Social Norms and Women's Economic Participation in Indonesia*. Investing in Women – An initiative of Australian Government and Prospera – Australia Indonesia Partnership for Economic Development.

Solotaroff, Jennifer L., George Joseph, Anne T. Kuriakose, and Jayati Sethi. 2020. Getting to Work: Unlocking Women's Potential in Sri Lanka's Labor Force. Washington D.C.: The World Bank.

Standing, Guy. 1999. "Global Feminization Through Flexible Labor: A Theme Revisited." *World Development* 27(3): 583-602.

Standing, Guy. 1989. "'Global Feminization' Through Flexible Labor." *World Development* 17(7): 1077-1095.

Steenbergen, Victor and Trang Thu Tran. 2020. "The distributional effects of FDI: Evidence from Ethiopia, Turkey and Vietnam." In *Global investment competitiveness report 2019-2020*. Washington D.C.: The World Bank.

Tejani, Sheba and William Milberg. 2016. "Global Defeminization? Industrial Upgrading, Occupational Segmentation and Manufacturing Employment in Middle-Income Countries." *Feminist Economics* 22(2): 24-54.

UNCTAD. 2016. *Trade and Development Report 2016: Structural transformation for inclusive and sustained growth*. Geneva and New York: UNCTAD.

UNCTAD. 2003. *Trade and Development Report*. Geneva and New York: UNCTAD.

UNDESA. 2019. International Migrant Stock 2019 (United Nations database, POP/DB/MIG/Stock/Rev.2019). Population Division, Department of Economic and Social Affairs, United Nations.

UNDP. 2020A. *Tackling Social Norms. A game changer for gender inequalities*. New York: UNDP.

UNDP. 2020B. *Human Development Report 2020*. New York: UNDP.

UNDP. 2018. *Women in manufacturing in Ethiopia: Opportunities, challenges and strategic interventions*. New York: UNDP.

UN Women. 2018. *UN Women Ethiopia. Changing the Lives of Women and Girls*. Downloaded from: https://africa.unwomen.org/en/digital-library/publications/2019/01/un-women-in-ethiopia, 22 January 2022.

UN Women. 2015. *Progress of the World's Women 2015-2016: Transforming Economics, Realizing Rights*. New York: UN Women.

UN Women. 2014. *Preliminary Gender Profile of Ethiopia*. Downloaded from: https://www.usaid.gov/sites/default/files/documents/1860/Preliminary%20Gender%20Profile%20of%20Ethiopia%20Nov%2017%20final.pdf, 15 January 2022.

Weeraratne, Bilesha. 2021. "Ban on female migrant workers: Skills-differentiated evidence from Sri Lanka." *WIDER Working Paper 2021/44*.

World Bank. 2018. *Ethiopia Economic Update: The Inescapable Manufacturing-Services Nexus*. World Bank, Washington, DC.: World Bank.

World Bank. 2020. *Indonesia Country Gender Assessment: Investing in Opportunities for Women*. Washington, DC: The World Bank.

World Bank and WTO. 2020. *Women and Trade: The Role of Trade in Promoting Gender Equality*. Washington, DC: World Bank Publications.

Appendix Tables and Figures

Table A.1. Contributions to labor productivity growth in China, annual averages by gender and time period

	Ag	Min	Mfg	Uti	Con	Trade	Bus	Gov	Oser	Total
Within					Women					
1991-99	0.53%	0.08%	1.85%	0.06%	0.01%	0.13%	0.21%	0.05%	0.13%	3.05%
2000-09	0.36%	0.10%	1.35%	0.05%	0.02%	0.24%	0.36%	0.59%	0.14%	3.21%
2010-18	0.26%	0.05%	0.94%	0.03%	0.00%	0.26%	0.44%	0.50%	0.16%	2.64%
					Men					
1991-99	0.74%	0.25%	1.60%	0.23%	0.13%	0.15%	0.59%	0.03%	0.06%	3.79%
2000-09	0.51%	0.37%	1.32%	0.20%	0.24%	0.25%	0.96%	0.38%	0.06%	4.30%
2010-18	0.40%	0.23%	0.98%	0.10%	0.03%	0.25%	1.05%	0.37%	0.08%	3.48%
					Total within					
1991-99	1.27%	0.34%	3.45%	0.29%	0.14%	0.28%	0.80%	0.08%	0.19%	6.84%
2000-09	0.88%	0.46%	2.68%	0.25%	0.26%	0.48%	1.32%	0.97%	0.20%	7.50%
2010-18	0.66%	0.28%	1.92%	0.13%	0.03%	0.51%	1.49%	0.88%	0.24%	6.13%
Across					Women					
1991-99	-0.28%	0.00%	-0.40%	0.01%	0.03%	0.31%	0.26%	0.39%	0.05%	0.36%
2000-09	-0.18%	-0.02%	0.04%	0.01%	0.04%	0.25%	0.29%	-0.05%	0.00%	0.39%
2010-18	-0.19%	-0.04%	-0.08%	0.00%	0.06%	0.21%	0.33%	0.00%	-0.01%	0.28%
					Men					
1991-99	-0.35%	0.05%	-0.19%	0.01%	0.00%	-0.40%	0.01%	0.26%	0.02%	1.14%
2000-09	-0.24%	0.03%	0.24%	0.00%	-0.02%	0.04%	0.01%	0.04%	0.00%	1.17%
2010-18	-0.24%	-0.16%	0.04%	-0.01%	-0.04%	-0.08%	0.00%	0.04%	0.00%	0.72%
					Total across					
1991-99	-0.63%	0.05%	-0.60%	0.02%	0.03%	-0.09%	0.26%	0.65%	0.07%	1.50%
2000-09	-0.43%	0.02%	0.28%	0.01%	0.02%	0.29%	0.30%	-0.01%	0.00%	1.56%
2010-18	-0.43%	-0.20%	-0.03%	-0.01%	0.01%	0.13%	0.33%	0.04%	-0.01%	1.00%
Total productivity growth										
1991-99	0.64%	0.39%	2.85%	0.31%	0.17%	0.18%	1.07%	0.73%	0.26%	8.34%
2000-09	0.45%	0.48%	2.95%	0.26%	0.28%	0.78%	1.62%	0.95%	0.21%	9.06%
2010-18	0.23%	0.08%	1.89%	0.12%	0.04%	0.64%	1.82%	0.92%	0.23%	7.13%

Note: See Table 3.

Table A.2. Contributions to labor productivity growth in Developing Africa, annual averages by gender and time period

	Ag	Min	Mfg	Uti	Con	Trade	Bus	Gov	Oser	Total
Within					Women					
1991-99	0.27%	0.01%	0.11%	0.01%	0.01%	0.05%	0.01%	-0.02%	0.00%	0.44%
2000-09	0.23%	0.00%	0.06%	0.02%	0.00%	0.07%	0.01%	0.09%	0.00%	0.47%
2010-18	0.28%	0.01%	-0.01%	0.01%	0.01%	0.01%	-0.04%	0.05%	0.02%	0.33%
					Men					
1991-99	0.27%	0.25%	0.13%	0.08%	0.05%	0.02%	0.01%	-0.01%	0.01%	0.81%
2000-09	0.28%	0.14%	0.12%	0.06%	0.04%	0.07%	-0.07%	0.17%	0.00%	0.81%
2010-18	0.37%	0.10%	0.04%	0.01%	0.12%	0.03%	-0.15%	0.05%	0.04%	0.62%
					Total within					
1991-99	0.55%	0.25%	0.24%	0.09%	0.06%	0.07%	0.01%	-0.03%	0.02%	1.26%
2000-09	0.52%	0.14%	0.18%	0.07%	0.04%	0.14%	-0.06%	0.25%	0.00%	1.28%
2010-18	0.66%	0.10%	0.04%	0.02%	0.13%	0.04%	-0.19%	0.10%	0.05%	0.95%
Across					Women					
1991-99	-0.08%	-0.02%	-0.01%	0.01%	-0.01%	0.15%	0.11%	0.10%	0.02%	0.28%
2000-09	-0.14%	0.02%	0.03%	0.00%	0.00%	0.20%	0.17%	0.11%	0.05%	0.44%
2010-18	-0.21%	0.01%	0.09%	0.01%	0.02%	0.26%	0.21%	0.16%	0.02%	0.57%
					Men					
1991-99	-0.10%	-0.28%	-0.01%	-0.03%	0.07%	0.13%	0.38%	0.07%	0.00%	0.22%
2000-09	-0.16%	0.02%	0.06%	-0.04%	0.16%	0.20%	0.69%	0.00%	0.03%	0.96%
2010-18	-0.22%	-0.01%	0.05%	0.01%	0.12%	0.10%	0.58%	0.10%	0.00%	0.73%
					Total across					
1991-99	-0.17%	-0.30%	-0.02%	-0.03%	0.06%	0.28%	0.49%	0.17%	0.02%	0.50%
2000-09	-0.29%	0.04%	0.09%	-0.04%	0.16%	0.40%	0.86%	0.11%	0.08%	1.40%
2010-18	-0.43%	0.01%	0.14%	0.02%	0.14%	0.36%	0.80%	0.26%	0.02%	1.30%

Note: See Table 3. Developing Africa includes: Botswana, Brukina Faso, Cameroon, Egypt, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Rwanda, Senegal, Senegal, South Africa, Tanzania, Tunisia, Uganda and Zambia.

Table A.3. Contributions to labor productivity growth in Developing America, annual averages by gender and time period

	Ag	Min	Mfg	Uti	Con	Trade	Bus	Gov	Oser	Total
Within					Women					
1991-99	0.05%	0.07%	0.15%	0.01%	0.00%	-0.12%	-0.05%	0.01%	0.01%	0.13%
2000-09	0.07%	0.01%	0.08%	0.01%	0.00%	-0.03%	-0.01%	0.02%	0.01%	0.16%
2010-18	0.05%	0.01%	0.07%	0.02%	0.00%	0.12%	0.11%	0.14%	0.04%	0.55%
					Men					
1991-99	0.19%	0.52%	0.33%	0.06%	0.07%	-0.13%	-0.21%	-0.01%	0.01%	0.84%
2000-09	0.18%	0.14%	0.14%	0.04%	0.00%	-0.04%	-0.09%	0.02%	0.01%	0.39%
2010-18	0.12%	0.07%	0.13%	0.06%	0.03%	0.11%	0.28%	0.11%	0.02%	0.95%
					Total within					
1991-99	0.25%	0.59%	0.48%	0.07%	0.07%	-0.24%	-0.26%	0.00%	0.02%	0.97%
2000-09	0.25%	0.14%	0.22%	0.06%	0.00%	-0.07%	-0.11%	0.04%	0.02%	0.55%
2010-18	0.18%	0.08%	0.21%	0.08%	0.03%	0.23%	0.40%	0.25%	0.05%	1.50%
Across					Women					
1991-99	-0.03%	-0.05%	-0.10%	0.00%	0.00%	0.22%	0.22%	0.07%	0.02%	0.35%
2000-09	-0.05%	-0.03%	-0.07%	-0.01%	0.01%	0.15%	0.24%	0.04%	0.01%	0.29%
2010-18	0.00%	0.02%	-0.03%	-0.01%	0.00%	0.05%	0.09%	0.01%	-0.01%	0.11%
					Men					
1991-99	-0.16%	-0.39%	-0.25%	-0.02%	-0.01%	0.10%	0.50%	-0.08%	0.00%	-0.29%
2000-09	-0.19%	-0.08%	-0.12%	-0.03%	0.12%	0.01%	0.32%	-0.03%	-0.02%	-0.01%
2010-18	-0.09%	-0.12%	-0.14%	-0.02%	0.03%	-0.02%	0.18%	-0.04%	0.01%	-0.21%
					Total across					
1991-99	-0.19%	-0.43%	-0.35%	-0.01%	-0.01%	0.32%	0.72%	-0.01%	0.02%	0.06%
2000-09	-0.24%	-0.12%	-0.18%	-0.04%	0.13%	0.17%	0.56%	0.01%	-0.01%	0.27%
2010-18	-0.09%	-0.10%	-0.17%	-0.03%	0.03%	0.03%	0.27%	-0.03%	-0.01%	-0.10%
Total productivity growth										
1991-99	0.06%	0.16%	0.13%	0.06%	0.06%	0.08%	0.46%	-0.01%	0.04%	1.03%
2000-09	0.01%	0.03%	0.03%	0.01%	0.13%	0.09%	0.45%	0.05%	0.01%	0.82%
2010-18	0.09%	-0.03%	0.04%	0.05%	0.06%	0.26%	0.66%	0.22%	0.05%	1.41%

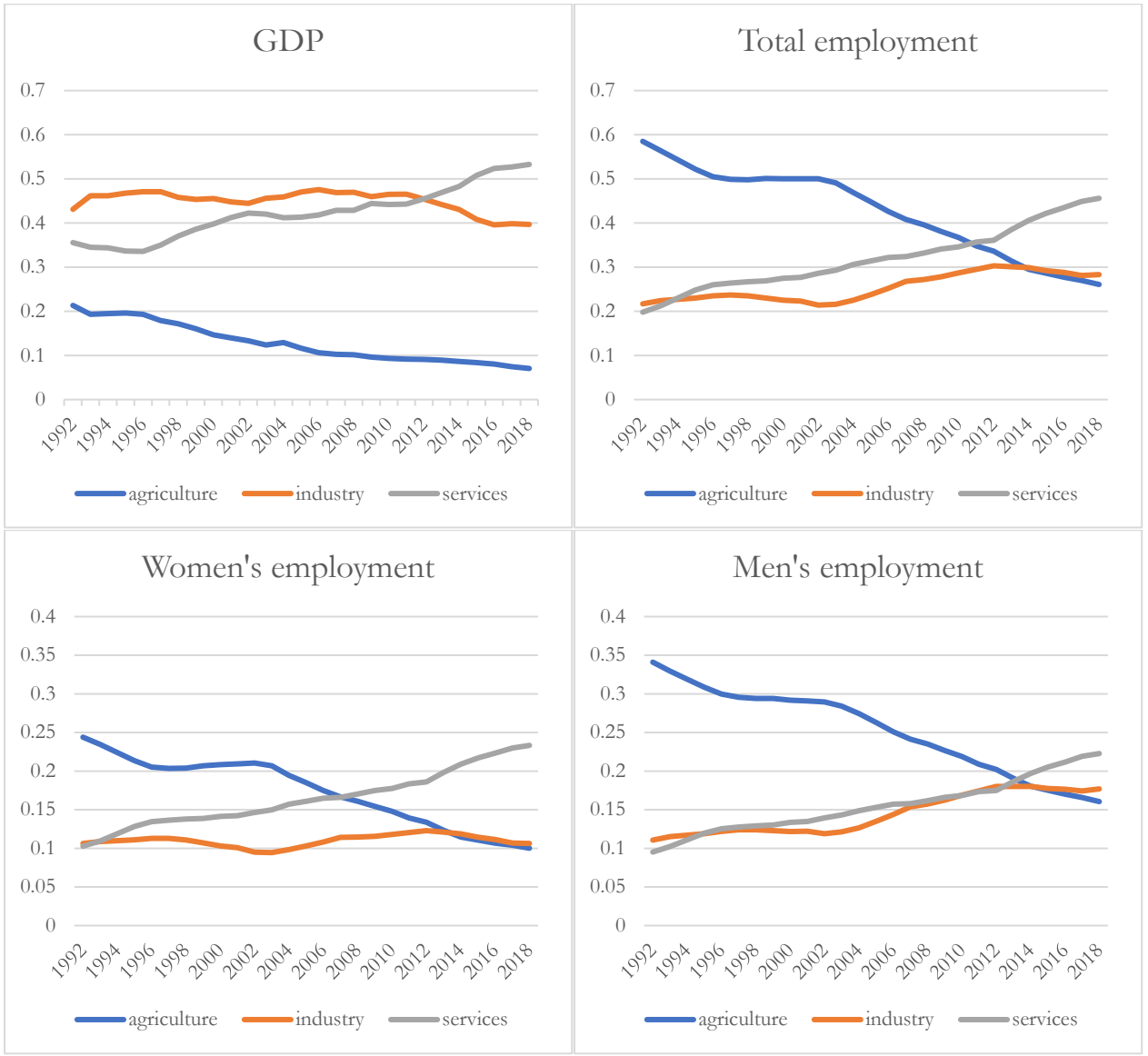
Note: See Table 3. Developing America includes: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico and Peru.

Table A.4. Contributions to labor productivity growth in Developing Asia, annual averages by gender and time period

	Ag	Min	Mfg	Uti	Con	Trade	Bus	Gov	Oser	Total
Within					Women					
1991-99	0.24%	0.04%	0.25%	0.02%	-0.01%	0.08%	0.06%	0.08%	0.07%	0.82%
2000-09	0.26%	0.04%	0.35%	0.01%	0.01%	0.19%	0.09%	0.09%	0.06%	1.09%
2010-18	0.25%	0.02%	0.29%	0.03%	0.00%	0.24%	0.15%	0.11%	0.08%	1.15%
					Men					
1991-99	0.35%	0.12%	0.39%	0.06%	-0.08%	0.11%	0.08%	0.19%	0.15%	1.36%
2000-09	0.38%	0.10%	0.46%	0.06%	0.08%	0.19%	0.27%	0.15%	0.06%	1.75%
2010-18	0.31%	0.07%	0.44%	0.11%	0.10%	0.82%	0.43%	0.13%	0.07%	2.47%
					Total within					
1991-99	0.60%	0.16%	0.63%	0.08%	-0.10%	0.19%	0.14%	0.27%	0.22%	2.18%
2000-09	0.64%	0.14%	0.81%	0.08%	0.09%	0.37%	0.36%	0.25%	0.12%	2.84%
2010-18	0.56%	0.08%	0.73%	0.14%	0.10%	1.06%	0.58%	0.24%	0.15%	3.62%
Across					Women					
1991-99	-0.12%	0.00%	0.07%	0.01%	0.03%	0.16%	0.18%	0.10%	0.06%	0.48%
2000-09	-0.10%	-0.02%	-0.03%	0.00%	0.01%	0.17%	0.19%	0.09%	0.01%	0.32%
2010-18	-0.13%	-0.01%	0.09%	0.01%	0.03%	0.09%	0.18%	0.12%	-0.01%	0.35%
					Men					
1991-99	-0.19%	0.00%	0.08%	0.03%	0.24%	0.16%	0.57%	-0.05%	-0.12%	0.70%
2000-09	-0.19%	0.01%	0.02%	-0.01%	0.13%	0.14%	0.42%	-0.02%	-0.02%	0.44%
2010-18	-0.21%	-0.02%	0.05%	0.00%	0.23%	-0.49%	0.30%	0.01%	-0.02%	-0.17%
					Total across					
1991-99	-0.31%	0.00%	0.14%	0.04%	0.28%	0.32%	0.75%	0.05%	-0.06%	1.18%
2000-09	-0.29%	-0.01%	-0.01%	-0.01%	0.15%	0.31%	0.61%	0.07%	-0.01%	0.76%
2010-18	-0.34%	-0.03%	0.14%	0.01%	0.25%	-0.40%	0.48%	0.13%	-0.03%	0.18%
Total productivity growth										
1991-99	0.29%	0.16%	0.78%	0.12%	0.18%	0.51%	0.89%	0.32%	0.15%	3.36%
2000-09	0.35%	0.12%	0.80%	0.07%	0.23%	0.68%	0.97%	0.32%	0.11%	3.60%
2010-18	0.22%	0.05%	0.87%	0.15%	0.36%	0.66%	1.06%	0.37%	0.12%	3.80%

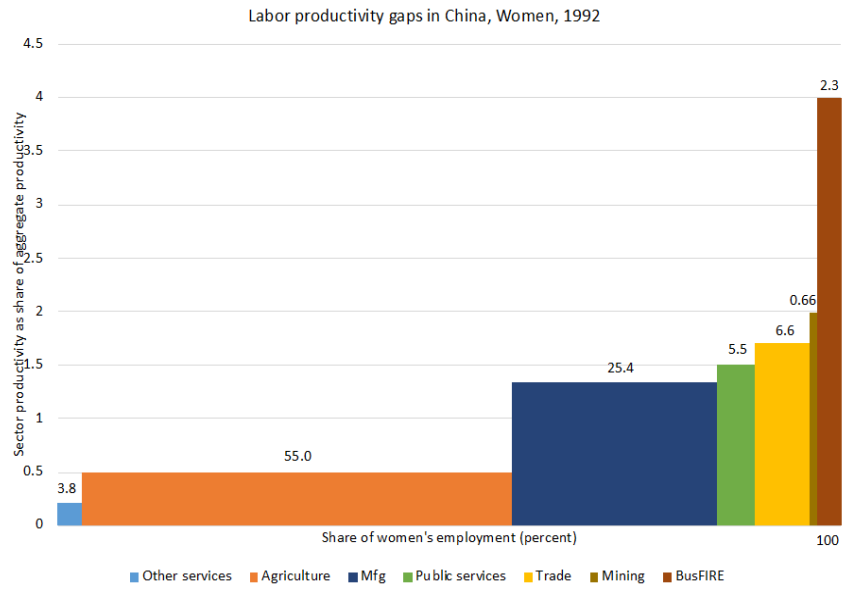
Note: See Table 3. Developing Asia includes: Bangladesh, Cambodia, China, Hong Kong, India, Indonesia, South Korea, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Chinese Taipei, Thailand, Turkey and Vietnam.

Figure A.1. Shares of GDP and Employment, Total and by Gender, 1992 –2018, China

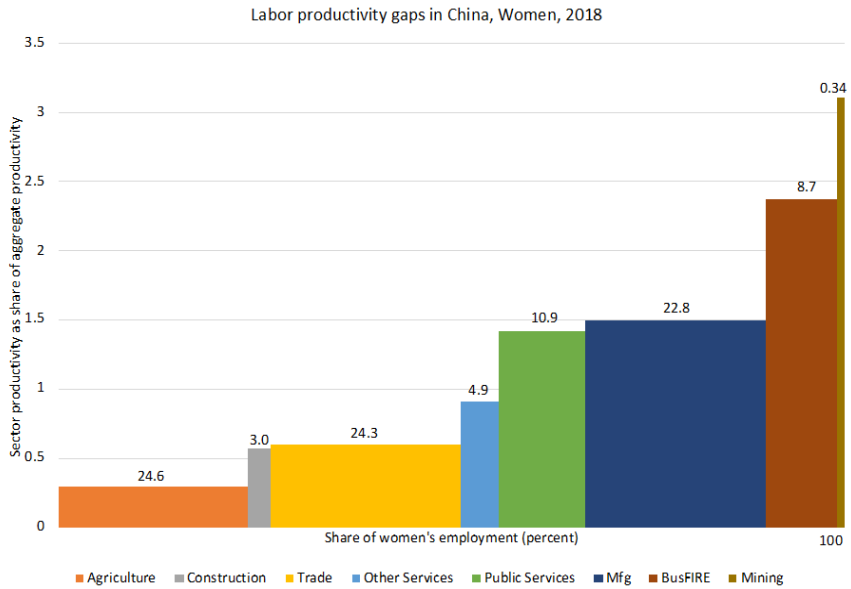


Note: Data on sectoral value added as a share of GDP is drawn from World Development Indicators database. Shares of employment are based on ILO modelled estimates from ILOSTAT. Note that value added shares presented for agriculture, industry, and services may not always add up to 100 percent due to the exclusion of financial intermediary services indirectly measured (FISIM) and net indirect taxes.

Figure A.2. Labor Productivity Gaps by Sector and Gender in China, 1992 and 2018



(Note: Emp share/LP for Construction 0.4/2.5 and Utilities 0.3/2.8)



(Note: Emp share/LP for Utilities 0.5/2.5)