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Women Workers in India: Labour Force Trends, Occupational Diversification and Wage Gaps

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I. Introduction: Defining and recognising women's work

Understanding the nature of work performed by women in India requires first of all that we broaden our understanding of what is work, and recognize the different kinds of socially necessary as well as other work. The nature of work and how to capture it in empirical data have indeed been among the most complicated and debated issues in social sciences. This is particularly so in societies where much work occurs in informal, often even very private, settings that can be very hard to identify, let alone measure. The fact that international definitions of work and of economic activity have themselves been changing over time only adds to the complexity.

Most standard dictionaries define work as any “activity involving mental or physical effort done in order to achieve a result”.¹ Economic activities are typically defined in a more restrictive way, as actions that involve the production, distribution and consumption of goods and services at all levels within a society, which of course begs the further question of what constitutes “goods and services”. For example, the activities associated with motherhood are typically seen as “non-economic”. Yet many of the most essential of such activities can be outsourced, such as breastfeeding, delivered through the hiring of a wet nurse, which then makes it an economic activity, with the wet nurse engaged in paid work. An even more extreme but recently proliferating example is that of surrogate motherhood, in which a woman is paid to be impregnated, carry a child in her womb and go through child birth, making all of these explicitly paid economic activities which, in turn, also contribute to national income to the extent of the remuneration received. Yet a woman who does this for her “own” child rather than someone else's, and without any monetary reward, is classified as “not in the labour force” in most if not all national statistical systems – and indeed, the very notion of “maternity leave” from paid work suggests that the mother is in effect on some sort of holiday, rather than actively engaged in the work of producing a child. In short, whether or not a given activity counts as productive depends primarily on its being “delegated” and traded. All

¹ This formulation is from Judy Pearsall (ed.): *The Concise Oxford Dictionary*. Tenth edition. Oxford, Oxford University Press, 1999, p. 1647.

services produced for own account or in caring for other household members are thus discounted, just like leisure activities or self-care (Jany-Catrice and Méda, 2012).

Clearly, therefore, definitions of work and economic activity are not that simple - and nowhere is this complexity more marked than in the case of care activities. There was a conceptual breakthrough at the 19th International Conference of Labour Statisticians (ICLS), which distinguished between work and employment and expanded the concept of work: "Work comprises any activity performed by persons of any sex and age to produce goods or to provide services for use by others or for own use" (ICLS, 2013, p. 2). The inclusion of the last phrase "for use by others or for own use" provides the crucial difference, as it includes the production of goods and services performed in the home for other household members and for personal use. So work is now defined irrespective of its formal or informal character or the legality of the activity. It only excludes activities that do not involve producing goods or services (e.g. begging and stealing), self-care (e.g. personal grooming and hygiene) and activities that cannot be performed by another person on one's own behalf (e.g. sleeping, learning and activities for own recreation). The significance of this definition is that it maintains that work can be performed in any kind of economic unit, including the family or household. Employment - defined as "work for pay or profit" - therefore becomes a subset of work. This new and enlarged concept of work requires changes the way in which work is both recognized and measured, and enables a greater recognition of unpaid work and its various forms, most especially the varied nature of care work.

This forms the background within which we examine trends of women's work in India over the previous two decades. The second section contains an aggregate discussion of overall work participation rates of women with a preliminary explanation of these patterns. While women working in agriculture constitute the bulk of women workers, we do not deal with them for reasons of space. Rather, we are concerned with recognised women workers in non-agriculture, since this is typically seen as the area which is likely to show more dynamism for women's work especially in a rapidly growing economy such as that of India. In the third section, we examine the extent to which there has been occupational diversification within non-agriculture for women workers in both urban and rural areas, and whether "new" forms of employment also fit into traditional gender stereotypes. In the fourth section we consider trends in gender wages gaps for both rural and urban workers and attempt a decomposition that separates the effects of education and discrimination. The fifth section

contains a discussion of the more recent trends in gender wages gaps in manufacturing industry. There is a brief conclusion.

II. Recent trends in women's work force participation in India

Given the historical context of vagueness and imprecision, it is not surprising that Indian definitions of work have also been characterised by some lack of clarity about what can be classified as "work" in the sense of economic activity. At one level, the NSSO from its inception has displayed a substantial degree of sophistication by introducing the concepts of "principal" and "subsidiary" activities, and seeking information on these in terms of "usual status", "current weekly status" and "current daily status". From the 50th Round (1993-94) onwards, the NSS has moved to a notion of work based on "economic activity", that covers market activities and non-market activities in agriculture directed towards own consumption, including cultivation, post-harvest activities, gathering of uncultivated crops, forestry, hunting, fishing, etc. In addition, it included another set of activities that were previously not included: those related to the production of fixed assets on own account, such as the construction of own houses, roads, wells etc. and of machinery, tools etc. for household enterprises and also construction of any private or community facilities free of charge. Involvement in such own account construction either as labourer or supervisor is construed as economic activity. However, the processing of primary products for own consumption has not been considered as economic activity. All domestic work is excluded, as are miscellaneous activities such as prostitution, begging, gambling, etc., even if these generate earnings.

The NSS survey results describe a broad category that is "neither working nor available for work (or not in labour force)", which includes the following codes:

- 91 attended educational institutions
- 92 attended to domestic duties only
- 93 attended to domestic duties and was also engaged in free collection of goods (vegetables, roots, firewood, cattle feed, etc.), sewing, tailoring, weaving, etc. for household use
- 94 rentiers, pensioners, remittance recipients, etc.
- 95 not able to work owing to disability
- 97 others (including beggars, prostitutes, etc.)
- 98 did not work owing to sickness (for casual workers only)
- 99 children of age 0-4 years

Codes 92 and 93 are fundamentally different from the other codes listed here because they do involve the production of goods and services that are potentially marketable and are therefore economic in nature. Indeed, when they are outsourced for payment by any household, they are included in both national income and in estimates of employment and therefore “work”.² Yet both these codes encompass activities that are absolutely essential for society, which simply must be undertaken. It is impossible to imagine either households or society functioning if these activities are not performed, which means that they must therefore be characterised as not only work but essential work. To the extent that domestic and care services generally are provided privately within households they obviously do not enter the national product, but on the other hand the national product could not be generated at all without such activities. The matter is further complicated by the fact that the NSSO also includes some unpaid work in its definition of work, by including “unpaid helpers in household enterprises” among those defined as working. Indeed, there is no conceptual basis for denying that Codes 92 and 93 refer to work, even if it is unpaid work.

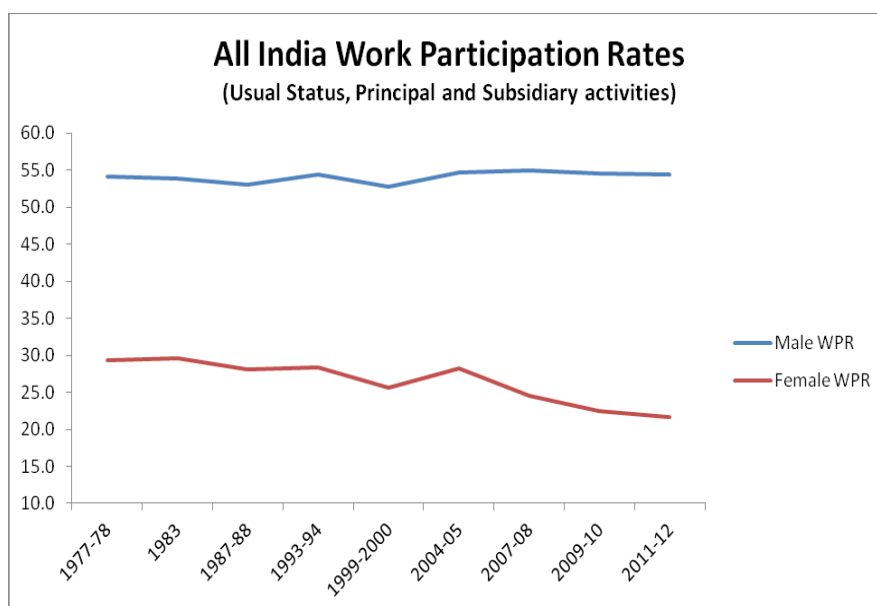
Code 97 presents a different kind of anomaly: marketed activities that are not considered as work presumably for some moral reasons, though this is not stated explicitly (and also it is not clarified why, for example, smuggling should be acceptable if begging is not). Therefore, Codes 92, 93 and 97 should contribute to the estimation of work participation rates. But doing so dramatically changes the picture with respect to trends in work participation in the recent past.

There has been much discussion on the evidence from recent NSS large sample surveys on employment, of the significant decline in women’s workforce participation rates. The work participation rate of rural women aged 15-59 years declined from 51.6 per cent in 1993-94 to 37.2 per cent in 2011-12, while the rate for urban women declined further from an already low rate of 23.3 per cent in 1993-94 to 21 per cent in 2011-12. Various explanations have been offered for this, including rising real wages that have allowed women in poor households to avoid or reduce

² The NSS recognises paid domestic workers as workers: “the procedure to be followed in ascertaining the activity status of a domestic servant who is a member of the employer’s household is different from that adopted for other members of the household. It may be noted that engagement in domestic duties by such household members is not considered economic activity as defined for the survey. On the other hand, although a domestic servant staying in the employer’s household and taking food from the common kitchen is, by definition, a member of the employer’s household, he/she is also *engaged in domestic duties in return for wages* in cash and/or kind. Thus, *as a special case, domestic duties pursued by a domestic servant will be considered as an economic activity* and the activity status code as is applicable will be assigned to him/her.” (NSSO 2014b)

involvement in very physically arduous and demanding work with relatively low wages and turn instead to more focus on “domestic duties”. Implicit in this discussion is a notion of a household-level backward bending supply curve, which allows women especially in poorer families to choose not to “work” when their economic conditions allow it.

Chart 1. Work participation rates of men and women in India, 1977-78 to 2011-12



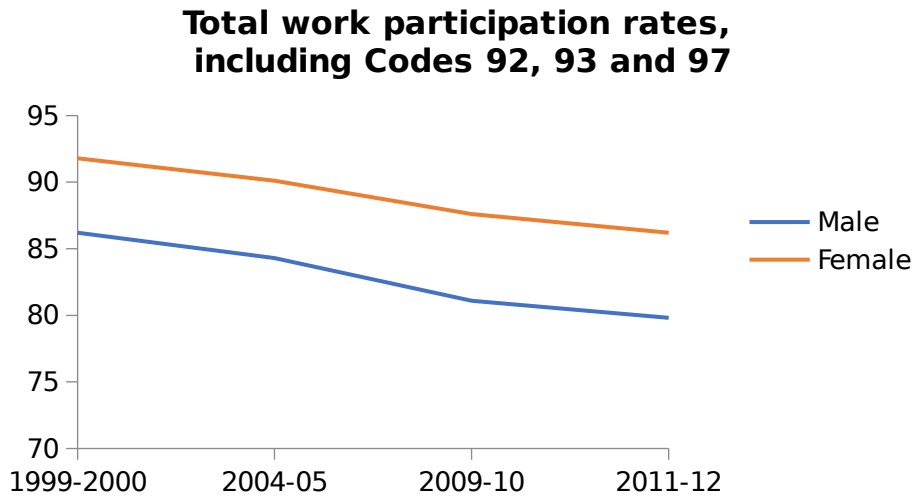
Source: NSSO Surveys of Employment and Unemployment, various issues

But once we include Codes 92, 93 and 97 in the definition of work, then such a decline is no longer evident: rather it is simply that there is apparently a shift from paid to unpaid work, as evident in Chart 2. Further, judged by this more expansive definition of work, many more women work than men in India – the work participation rate for all women in India has been consistently higher than for men. In 2011-12, across both rural and urban areas, the total female work participation rate (even after declining over the decade) was as high as 86.2 per cent, compared to 79.8 per cent for men.

Charts 3 and 4 (which relate to usual principal activity status over the survey periods since 1999-2000) show that once such work is factored in, and other paid but unrecognised work (the category “others”) is also included, then aggregate work participation of women declined by only 6.1 percentage points in rural areas and 3.8 percentage points in urban areas – and this decline can be mostly explained by increased

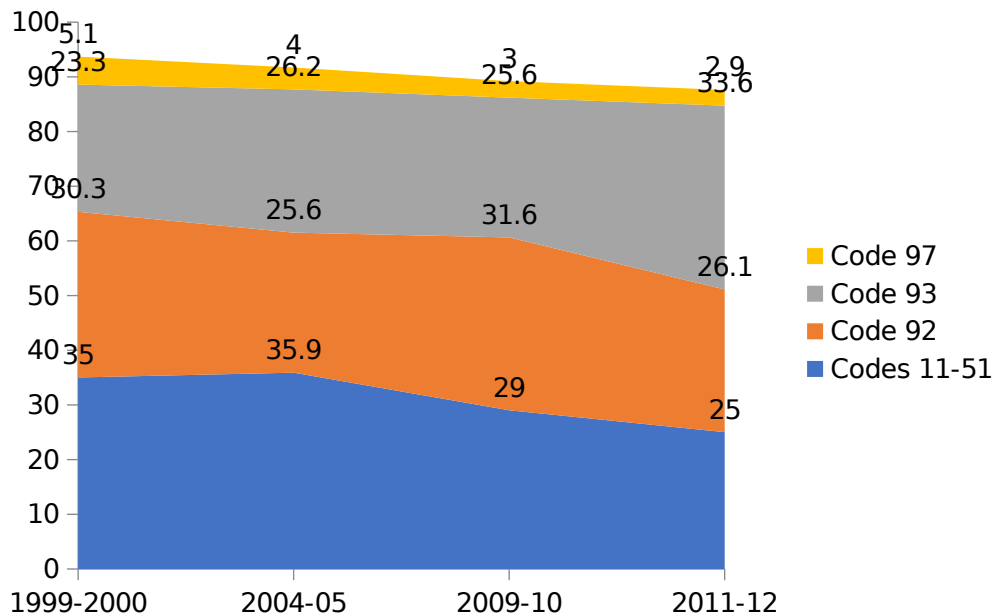
involvement in education. This is a very different picture from the conventional one that sees most women in India as “not working”.

Chart 2: Total work participation rates, including Codes 92, 93 and 97



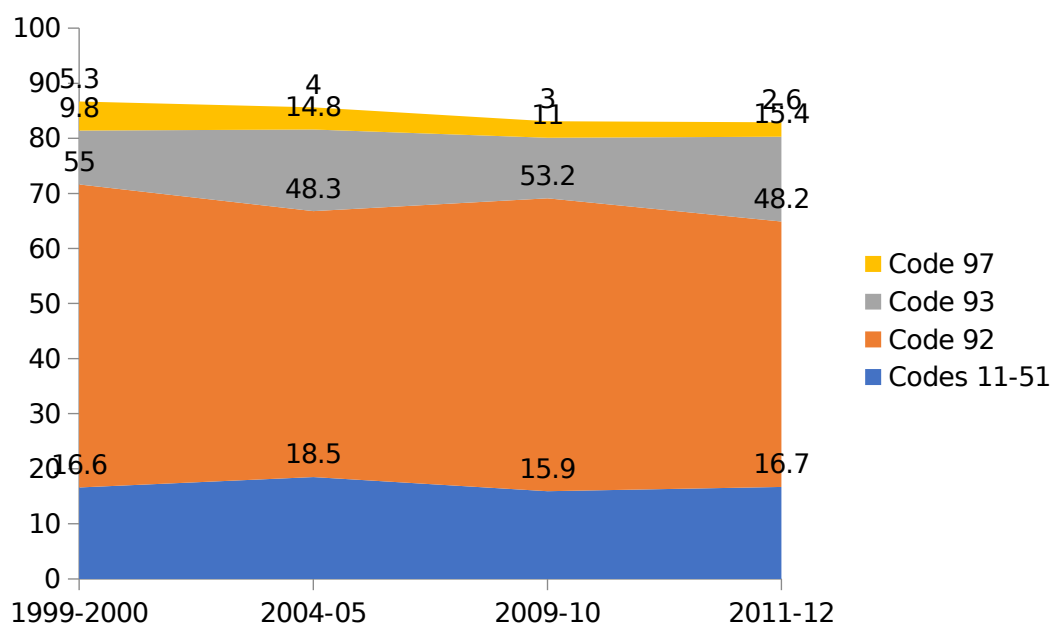
Source: NSS Surveys on Employment and Unemployment 55th, 61st, 66th, 68th rounds.

Chart 3: Rural women’s work participations rates, 1999-2000 to 2011-12



Source: Same as Chart 2.

Chart 4: Urban women’s work participation rates, 1999-2000 to 2011-12.



Source: Same as Chart 2.

This is the context in which the conditions of women who are recognised as “paid workers”, whether self-employed or in paid employment, must be assessed. The macroeconomic context must also be borne in mind, whereby economic growth has still not generated a process of employment diversification, including for women. Even more than men, and substantially so, women workers remain stuck in low value added but arduous work in agriculture. Even with the recent decline in numbers of women working in agriculture, around two-thirds of women workers are still employed in cultivation as their principal economic activity, while the share for men workers has fallen to less than half. The stubborn domination of agriculture as the primary source of work for most of our workers (especially women) is a particular problem given the agrarian crisis that has persisted for nearly two decades in the Indian countryside, which makes involvement in such work increasingly fraught and financially unviable. Considerations of space do not allow us to delve further into this, but the concerns of women farmers deserve separate and detailed examination in their own right, while women wage workers in agriculture experience some of the highest wage gaps (described in Section IV).

III. Occupational diversification of non-agricultural women workers, 1993-94 to 2011-12

In this section, we consider data from the NSSO surveys of 1993-94 and 2011-12 on women workers in the age group 15-59 years. Rigid gender segregation of occupations has remained a defining feature of women's work in India. Occupational diversity for women workers has been limited to specific occupations, suggesting a U-shaped pattern of changes within the labour market such that jobs for women were mostly created within the high-skilled and the low/unskilled occupations. Occupations located in the middle skill segments did not reveal major changes, notwithstanding the substantial presence of women workers. Relatively little employment was created within high-skilled occupations, with larger absolute increases in employment in unskilled occupations.

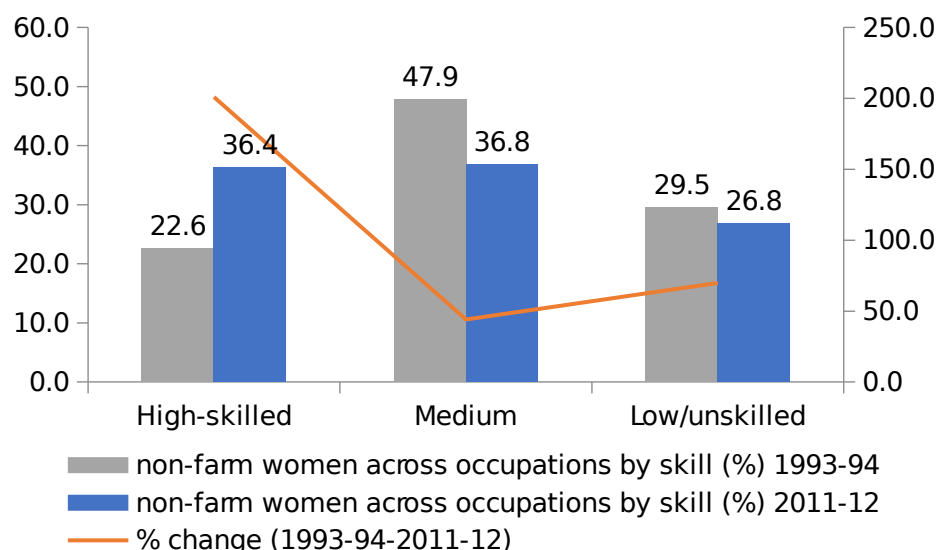
Urban areas

In urban areas, first impressions suggest that, notwithstanding low women's work participations rates, there was a diversification and improvement in skill levels of those women who did find employment. Non-agricultural occupations accounted for more than 90 percent of urban women workers in 2011-12 - a substantial increase from 1993-94, suggesting a movement of women workers out of farm-based occupations. Of these, the share of women described as being engaged in high skilled occupations, including administrators, managers, professionals and associate professionals, also increased substantially, from 22.6 per cent in 1993-94 to 36.4 per cent in 2011-12. However, the bulk of the urban non-agricultural women workers continued to remain in semiskilled and unskilled occupations (67.6 per cent in 2011-12).

But this picture may be misleading, as the share of "high-skilled occupations" in urban women's work deserves further examination. Within this group, "professionals and associate professionals" and "administrators and managers" accounted for significant shares of urban women workers, and their shares also increased over the period. Nearly 84 per cent of "administrators and managers" were described as "directors and chief executives" - but 99 per cent of them were self-employed, of which around one-third worked as unpaid family workers. Such women were mainly engaged within the self-help groups (SHG) and co-operatives as partners and had thus been recorded as directors or working proprietors, even as their activities for the most part remained confined to food processing and textile and garment manufacturing. A large proportion of self-employed women workers were also engaged in outsourced manufacturing work, typically characterised by low earnings,

long hours of work and lack of any form of social protection. Therefore, clubbing them in “high-skilled occupations” may well create a false impression about the true nature of their activities.

Chart 5: Skill-based occupational distribution of non-farm women workers in urban areas, 1993-94 and 2011-12 (%)



Source: Computed from NSS 50th and 68th Employment and Unemployment Survey rounds unit level data.

Among the professionals and associate professionals, there were increases in traditionally female-dominated activities in health and education. The increases in women health professionals were driven by traditional occupations, such as nurses and mid-wives. In absolute numbers, secondary education and above had more men teachers, while women dominated primary level teaching, which requires lower educational qualifications. However, the increases in women teaching professionals were led by secondary and higher secondary teachers, leading to an increase in the female-male ratio for secondary teachers over the period. This was associated with a surge in private education facilities in urban areas and greater contractualisation of the teaching profession. The relatively lower teacher salaries in private educational institutions compared to regular teachers in public education systems³ as well as gender wage gap in private institutions⁴ may have contributed to this.

Nevertheless, there was some greater access for women workers into more “dynamic” occupations in urban areas. White collar work as

³ (Muralidharan and Kremer, 2006; Pritchett and Aiyar, 2014)

⁴ Women teachers at secondary and above levels in urban areas could command approximately 80 percent of men’s wages, according to NSSO Report #554.

accountants, auditors, market research analysts, public relations officers, personnel specialists, financial analysts etc. became important occupations for professional women in terms of absolute number of women employed, the percentage increase in the period, and the increase in the female-male ratio of such workers. Among professionals and associate professionals, those engaged in physical, mathematical and engineering sciences recorded the highest proportionate increase, of nearly five times over the period, but from a very low base, such that in 2011-12 the total number of such women was estimated at 422,363. But these gains in different occupations were confined to a small section of urban women workers, who had access to higher educational and technical qualifications. Hence, they had very limited impact on the overall occupational segregation.

Among the semi-skilled occupations in manufacturing, women's engagement was found mostly in textile, garment, leather, shoe factories and food processing units. They worked as weavers, knitters, spinners, dressmakers, factory tailors, cutters, finishers, embroiderers and leather product makers, but even so their overall presence in these occupations was limited. Gender segregation was most prominent within semi-skilled, mostly manufacturing occupations, and in a period in which output elasticity of employment in manufacturing remained low (at only around 0.1 between 2004-05 and 2011-12), women's work in manufacturing was unable to transcend gender boundaries. They were largely in such activities rather than in chemical, electrical, power, rubber and plastic products, thus indicating the segregation of occupations in factory work.

Among less skilled and unskilled women workers in urban areas, most were wage workers employed as in sales, services, manufacturing, mining and construction sectors. Women working as salespersons dominated this category. Within personal services, the dominant occupations were of hairdressers, personal care, housekeeping and restaurant service workers and travel and tourism related work. The big increase (more than fivefold) was of hairdressers and beauticians, of whom there were nearly a quarter of a million women workers in 2011-12, with the female-male ratio in this occupation increasing from 10.6 in 1993-94 to 47.3 in 2011-12. Similar trends were evident for women in semi-skilled housekeeping and personal care, especially for janitors, cooks, home stewards, babysitters and governess, tutoring services and other educational services, restaurant and cafeteria workers, catering services, and women working in hostels, boarding houses, correctional homes, etc. Such employment does not break the stereotypes associated with women's work as most of these services are extensions of care work

which women have been performing historically, and in fact reinforces the gender stereotypes in occupations in altered, more commercialised contexts.

Among the unskilled workers in service, manufacturing and construction sectors, domestic workers, cleaners and launderers emerged as the most important occupations for women. However, the female-male ratio showed a decline for the domestic workers, cleaners and launderers in 2011-12, largely because they include both domestic cleaners and helpers as well as those working in offices, hotels and other establishments. The commercial cleaning and dusting work in offices and hotels usually includes more men compared to women and commands higher wages than household-based domestic services, usually performed by women. So this indicates increased entry of men into such occupations which offered better working conditions compared to other forms of employment within unskilled occupations. Even within such “feminised” work as cleaning, men had better working conditions vis-à-vis women’s activities as domestic workers. There were also increases in the number of women working as garbage collectors. In the occupational distribution of urban non-agricultural women in 2011-12, garbage collectors and related labourers occupied the ninth most important position, constituting nearly 3 percent of total urban women workers, which suggests a large presence of women in this category.

Thus in the urban areas, employment in high-skilled occupations was driven by output dynamism in low labour intensity, high-value added services. While jobs in these occupations showed some tendencies of being able to break the gender segregation, the increases were limited to a small section of women workers, who possessed the required skills and educational qualifications. A large part of women’s work in urban areas was created in low skilled or unskilled occupations, mainly as garbage collectors, cleaners, domestic workers and hairdressers and beauty service providers. The increased entry of men into some of these occupations somewhat levelled the segregated pattern in unskilled occupations, but a levelling through downward movement of men rather than upward movement of women workers.

Rural areas

In the rural areas, U-shaped changes in women’s work were more prominent than in urban areas. Obviously, the bulk of rural women (almost 75 per cent) were engaged in agriculture. Among non-agricultural workers, most women were engaged in medium and low/unskilled occupations. Chart 6 shows that percentage increases in

women’s employment were substantially higher in high-skilled and low/unskilled occupations, whereas the middle segment of the occupational distribution, which comprised of a larger share of women workers, showed much lower increases. These broad trends were similar to those in urban areas, but there were some important differences in detail.

Chart 6: Skill-based occupational distribution of non-farm women workers in rural areas, 1993-94 and 2011-12 (%)



Once again, the significant increase (both in absolute number and as share of women workers) of women involved in “high skilled” occupations may be misleading. The dynamism was mainly within associate teaching and health professionals. Substantial changes took place in women’s employment in teaching in both primary and secondary levels, which more than doubled over this period to reach nearly 2 million women workers in 2011-12. Women were traditionally more involved in primary level teaching and this further increased over this period, as the female-male ratio rose from 23.5 per cent to 51.3 per cent. However, women were less involved in secondary level teaching in rural areas, but there was some levelling here as well, with the female-male ratio increasing from 13.6 per cent to 33.3 per cent. For both levels of teaching, this coincided with the implementation of the government flagship schemes for improving school enrolment and education

outcomes,⁵ which required a large contingent of teachers. This led to the recruitment of a large number of para-teachers (contract teachers) in rural government schools, who were not regular employees of the government. These teachers received lower remuneration compared to regular teachers and had to perform several non-teaching tasks, and so women were the preferred recruits to such jobs.

Similarly, the increases in women associate professionals in health were mainly as nursing professionals including midwives, which nearly doubled in number over this period to 2.88 lakh workers in 2011-12. These increases were also a result of employment created by public programmes in health, especially the National Rural Health Mission (NRHM) that relied on health workers described as Accredited Social Health Activists (ASHAs), auxiliary nurses and midwives (ANMs) and others. These were minimally trained rural women who were (and continue to be) paid well below minimum wages as they are described as “volunteers” receiving “honoraria”, and are not treated as proper public employees. Therefore, as the government sought to expand public services in health and education without the required increase in public spending, it indirectly created a fleet of cheap rural women workers possessing a basic level of skills. These were therefore not really increases in high-skilled work of women; rather this process intensified occupational segregation and increased the clustering of women into low-paid occupations.

Most women workers in the middle skill segment were employed in food and tobacco processing, textiles, garments, pelts, leather, shoemakers and related workers and machine operators who were primarily factory-based. As Chart 6 indicates, there was a significant decline in the proportion of rural women workers engaged in these activities.

However, there were increases in both number and share of low skilled and unskilled women workers. Among unskilled workers, the largest employers in rural areas for both men and women were mining and construction related occupations. Construction work experienced a boom led by the public rural employment guarantee programme or the MGNREGA, which was implemented from 2005. Almost 5.8 million usual status women workers were added to the rural construction sector over the period 2004-05 to 2011-12, out of which more than 50 per cent were in public construction work. Domestic work was another important unskilled service occupation for rural women, although not as much as

⁵ Programmes such as *Sarva Siksha Abhiyan* (SSA) and *Rashtriya Madhyamik Shiksha Abhiyan* (RMSA) that were aimed at universalization of primary education and reducing the drop-out rates at secondary levels, were implemented over this period.

for urban women. There were also increases in women workers as head-loaders in brick kilns and wholesale markets. This brings in wage work for activities that were almost an extension of women's traditional household chores, since women have traditionally performed head-loading activities in fetching water and fuel, as well as in agriculture.

Thus, whatever occupational dynamism did occur for women workers in rural areas was primarily created by the government, directly and indirectly. Because of MNREGA, women workers in rural areas ventured into construction, albeit in unskilled activities, while the use of low paid women workers in public health and education services meant an increase in such supposedly high-skilled activities that were nevertheless poorly remunerated. However, a large middle segment of occupations requiring medium skills, that engaged a substantial share of non-farm women workers, continued to reflect segregated occupational patterns with negligible changes over almost two decades.

IV. Gender wage gaps

Despite the difficulties in measuring women's work noted above, and the associated underreporting of women workers, the official survey data point to pervasive and persistent gender wage gaps. However, the overall gender wage gap declined over 1993-94 to 2011-12, in both rural and urban areas. Table 1 shows that over 1993-94 to 2011-12, there was an increase in real wages for both regular and casual workers. The increase in real wages was higher in rural areas than in urban areas, and the rate of increase was faster among women compared to men.

Table 1: Average Real Wages of Workers (Rs per day at 2009-10 prices)

	Regular Workers				Casual Workers			
	Rural		Urban		Rural		Urban	
	Male	Female	Male	Female	Male	Female	Male	Female
1993-94	168.7	100.5	249.4	199	67.8	44.3	103.6	59.2
1999-2000	234	172.8	325.9	268.1	81.8	52.7	120.5	71.6
2004-05	237.6	140.2	317.6	239.4	90.2	57.3	117.3	68.6
2007-08	233.3	183	366.2	310	74.7	46.7	108.7	65.4
2009-10	248.8	155.7	377.1	308.8	101.5	69	131.9	76.9
2011-12	272.7	170.4	394.8	307.7	126.5	87.5	153	93

Source: Daily money wages computed from NSS Surveys on Employment and Unemployment unit level data from 50th, 55th, 61st, 64th, 66th, 68th rounds, deflated by Consumer Price Index for Agricultural Labourers (CPI-AL) for rural workers and Consumer Price Index for Industrial Workers (CPI-IW) for urban workers).

The decreasing gender gap in wages was evident for all categories of workers except for urban regular workers, as described in Table 2 which presents the average female wages as a percentage of male wages for regular and casual workers in both rural and urban areas. Over 1993-94 to 2011-12, gender gap in wages decreased for all categories of workers in both rural and urban areas except for urban regular workers. The increase in gender wage gaps for urban regular employees reflected the changing composition of the urban women workers and their increasing participation in domestic work, which was the lowest paid urban activity. The gender wage gap was much larger for urban casual workers than for urban regular workers. The reverse was true for rural areas: rural gender wage gaps were larger for regular workers than for casual workers.

Table 2: Women’s wages as per cent of men’s wages.

	Regular Workers		Casual Workers	
	Rural	Urban	Rural	Urban
1993-94	59.6	79.8	65.4	57.1
1999-00	73.9	82.3	64.4	59.4
2009-10	62.6	81.9	68.0	58.3
2011-12	62.5	77.9	69.2	60.8

Source: Daily money wages computed from NSS Surveys on Employment and Unemployment 50th, 55th, 66th, 68th round unit level data.

The patterns varied according to different educational categories. Table 3 shows real wages of women regular workers with different levels of education in 1993-94 and 2011-12. Over this 18-year period, real wages grew noticeably for rural women workers with below primary level of education, and was at least partly related to the occupational trends described in the previous section. In urban areas, women graduate workers experienced the largest increase in real wages.

Table 3: Average Real Wages of Regular Women Workers by Education Level

	Rural			Urban		
	1993-94	2011-12	% change	1993-94	2011-12	% change
Illiterate	51.9	75.6	45.7	85.5	103.7	21.3
Literate Below Primary	54.4	92.4	69.9	84.6	120.2	42.1
Primary and Middle	76.5	86.5	13.1	101.2	108.9	7.6
Secondary and Higher	166.2	193.9	16.7	226.3	273.9	21.0
Secondary						
Graduation and above	206.2	320	55.2	314.8	512.3	62.7

Source: Daily money wages computed from NSS Surveys on Employment and Unemployment 50th and 68th round unit level data, deflated by Consumer Price Index for Agricultural Labourers (CPI-AL) for rural workers and Consumer Price Index for Industrial Workers (CPI-IW) for urban workers.

Agriculture has shown high gender gaps in every category of manual work, even in the tasks conventionally carried out by women such as transplanting, weeding and harvesting. But these gaps also declined over this period, as indicated in Table 4 which shows women's wages as a percentage of men's wages for a range of cultivation tasks. However, the gender wage gap was very high and increased further in fisheries.

Table 4: Women's wages as per cent of men's wages for Rural Casual Workers.

Activity/Operation	1993-94	1999-2000	2009-10	2011-12
Ploughing	91.7	77.4	78.5	67.2
Sowing	72.3	74.5	63.7	81.2
Transplanting	77	74.6	71.4	81.5
Weeding	70.7	72.7	75.3	83.3
Harvesting	76.9	75.4	80.2	78.9
Other cultivation activities	69.5	69.7	76.4	76.1
Forestry	59.8	67.7	65.1	64.7
Plantation	71.7	68.5	62.3	72.2
Animal Husbandry	68.5	78.1	92.4	71.6
Fisheries	60.9	54.2	56.6	41.8
Other agricultural activities	69.3	64.1	69.7	71.8
Other than cultivation	62.4	70.7	77.1	73.2

Source: Daily money wages computed from NSS Surveys on Employment and Unemployment 50th, 55th, 66th, 68th round unit level data.

Table 5 shows the wage differences for all rural and urban wage earners (regular and casual workers) across the broad divisions of occupations. The gender wage gap was not significant for "administrators, executives and managers" followed by slightly less skilled "Professionals", but as we noted in the previous section, this category includes many self-employed workers at very low rates of remuneration. The gender wage gap was highest among service workers and domestic workers in 2011-12. This gap increased sharply for midwives and health visitors as well as for pre-primary school teachers, confirming the analysis of the previous section regarding the use of women workers at very low wages (significantly

below legal minimum wages) to implement various initiatives like the Sarva Shiksha Abhiyan (SSA), National Health Mission (NHM) and Integrated Child Development Scheme (ICDS) etc. There was a significant decline in gender wage gap for factory and home-based workers in the female-dominated manufacturing industries like food, tobacco, textiles and wearing apparel industries and for construction labourers. Changes in the employment pattern in the manufacturing and construction sectors and the larger increase in real wages of women workers contributed to the overall decline in the gender wage gap.

Table 5: Women’s wages as percent of men’s wages across Occupations.

Occupation	Rural		Urban	
	1993-94	2011-12	1993-94	2011-12
Professional, Technical and Related Workers	74.8	82.2	80	87.2
Administrative, Executive and Managerial Workers	71.1	84	86.3	91
Clerical And Related Workers	62.6	73.3	83.1	81.4
Sales Workers	55.7	68	59.1	78.3
Service Workers	39.9	32.3	36.5	40.1
Farmers, Fishermen, Hunters, Loggers & Related Workers	67.2	75.9	56	64
Production and Related Workers, Transport Equipment Operators and Labourers	42.4	63.1	45.4	55.4
Mid wife and Health visitor	61.3	46.1	56.2	49.1
Domestic worker	59.9	42.1	53.7	43.7
Pre-Primary School Teacher	57.7	49.2	60.2	54.6
Factory workers	31.4	59	30.3	48.3
Home Based Workers	40.9	73.4	26.7	65.8

Source: NSS 50th and 68th round unit level data on Employment and Unemployment.

The gender wage gap can be decomposed into the endowment effect and the discrimination effect to identify the extent to which education or other discriminatory practices explain the gap. Table 6 highlights the results of such a decomposition exercise. These show that gender wage gaps were explained primarily by the discrimination component, which further increased over 1993-94 to 2011-12 and was larger than the endowment component in both rural and urban areas. There was a sharp decline in endowment effect because of increasing educational

attainment among women (particularly younger women). This led to the overall decline in gender differentials, but a significant proportion of wage gap remained unexplained, and the discrimination component was almost entirely responsible for the overall log wage gap between men and women. This suggests that gender wage discrimination occurred through different remuneration for similar characteristics, because of lower bargaining power of women, different career opportunities and the exclusion of women from the better-remunerated jobs in both rural and urban areas, which was discussed in the previous section.

Studies such as Braunstein (2012, 2015) have argued that globally, the concentration of women workers into low paying jobs is the main reason behind the persistent gender wage gap and the Indian experience evidently supports this. The BMZ decomposition technique is applied here to decompose the aggregate men-women differential such that the effects of occupational barriers are distinguishable from the effects of wage discrimination. It allows for variation both in occupational distribution and in wages resulting from differences in job qualifications and educational endowment.

Table 6: Overall Wage Gap Decomposition.

	Rural				Urban			
	1993-94		2011-12		1993-94		2011-12	
	BO	BMZ	BO	BMZ	BO	BMZ	BO	BMZ
Explained Component	0.39		0.17		0.16		0.10	
Unexplained Component	0.31		0.35		0.31		0.39	
Explained intra-occupational component		0.18		0.08		0.06		0.02
Unexplained intra-occupational component		0.08		0.05		0.13		0.12
Explained inter-occupational component		0.21		0.09		0.10		0.08
Unexplained inter-occupational component		0.23		0.30		0.18		0.27
Total wage gap	0.71		0.52		0.47		0.49	

Source: Computed from NSS 50th and 68th Employment and Unemployment Survey rounds unit level data.

Note: *** $p < 0.001$ for all cases, BO implies the Blinder (1973) and Oaxaca (1973) Decomposition and BMZ implies Brown, Moon and Zoloth (1980) Decomposition.

It is apparent from Table 6 that the adjusted gender wage gap or discrimination explained the major part of the gap and the positive gender wage gap was almost entirely driven by the unexplained inter-occupational component. Unexplained inter-occupational component increased from 1993-94 to 2011-12 in both rural and urban areas,

whereas differences in the returns to observed characteristics within each occupation, i.e., the “vertical segregation” reduced. So job discrimination dominated wage discrimination. Indeed, wage discrimination (differential earnings within the same job) declined but job discrimination (differential access to certain occupations) increased over this period in both rural and urban areas. In 2011-12, 58 per cent and 55 per cent of the mean wage differential would be eliminated by ending occupational discrimination alone in rural and urban areas respectively. Gender wage differentials in the Indian labour market were primarily explained by differences in the structure of the occupational achievement, which is termed as “horizontal segregation”.

However, amidst the overall decline in gender wage gap, Table 7 shows an increase in the gender wage gap in the public sector in both rural and urban areas from 1993-94 to 2011-12. The gender wage gap was significantly higher in the rural public sector compared to the urban public sector, unlike the private sector for which the opposite pattern held. In rural areas, in both 1993-94 and 2011-12, the discrimination component was larger in the public sector compared to the private sector; and in urban areas the discrimination component was higher in the private sector compared to the public sector. The gender wage gap in public sector exceeded that in private sector in rural areas, with the converse holding in urban areas.

Table 7: Wage Gap Decomposition in Public and Private Sector.

	(a) Public Sector							
	Rural				Urban			
	1993-94		2011-12		1993-94		2011-12	
	BO	BM Z	BO	BM Z	BO	BM Z	BO	BM Z
Explained Component	0.15		0.10		0.19		0.1	
Unexplained Component	0.39		0.59		0.24		0.37	
Explained intra-occupational component		0.03		0.03		0.08		0.04
Unexplained intra-occupational component		0.15		0.10		0.10		0.05
Explained inter-occupational component		0.12		0.07		0.11		0.06
Unexplained inter-occupational component		0.24		0.49		0.14		0.32
Total wage gap	0.54	0.54	0.69	0.69	0.43	0.43	0.47	0.47

(b) Private Sector

	Rural				Urban			
	1993-94		2011-12		1993-94		2011-12	
	BO	BM Z	BO	BM Z	BO	BM Z	BO	BM Z
Explained Component	0.15		0.07		0.20		0.1	
Unexplained Component	0.34		0.4		0.30		0.39	
Explained intra-occupational component		0.02		0.03		0.09		0.04
Unexplained intra-occupational component		0.09		0.09		0.04		0.03
Explained inter-occupational component		0.13		0.04		0.11		0.06
Unexplained inter-occupational component		0.25		0.31		0.26		0.36
Total wage gap	0.49	0.49	0.47	0.47	0.50	0.50	0.49	0.49

Source: Computed from NSS 50th and 68th round unit level data on Employment and Unemployment.

Note: *** $p < 0.001$ for all cases, BO implies the Blinder (1973) and Oaxaca (1973) Decomposition and BMZ implies Brown, Moon and Zoloth (1980) Decomposition.

These trends in gender wage gaps therefore reflect the gendered patterns of occupational concentration that were described in Section II. The gaps in the public sector resulted from the government's extreme reliance on the underpaid labour of contractual women workers relative to permanent employees in implementing various critical policies in health, nutrition and education. Even in the private sector, gender differentials were explained primarily by differences in occupational structures, alternatively termed as horizontal segregation. In the rural private sector, more women were involved in the male-dominated manufacturing industry where gender gap in wages were high. Meanwhile, more urban women were involved in the domestic work in the private sector. So gender wage discrimination in India has largely functioned through a traditional mechanism via differential access to occupations, with the women entering poorly paid dead-end jobs.

V. Gender wage gaps in manufacturing

In this section we focus specifically on manufacturing, to examine how gender wage gaps have moved in the more recent period and these trends have varied across different types of enterprises, based on ownership patterns. This refers to wage earners, including both regular and casual workers in the Indian manufacturing sector. The time period considered here is 2004-05 to 2011-12, once again using the 61st and 68th

employment and unemployment surveys of National Sample Survey rounds.

Wage earners comprised 30 per cent and 33 per cent of women workers in Indian manufacturing in 2004-05 and 2011-12 respectively. The corresponding figures for men workers were 57 per cent and 61 per cent. Workers in the Indian manufacturing sector can be divided into three main groups:

- 1) senior officials, managers, professionals and technicians who are usually workers with high education levels and relatively higher wages, described here as “white-collar workers”.
- 2) Clerks, sales and service workers, who usually have education levels lower than those of white-collar workers as well as lower average wage levels. They are described as “pink-collar workers”.
- 3) Blue-collar workers, who are craftsmen, machine operators and those engaged in what are classified as “elementary occupations”, who receive on average lower wages than pink-collar workers and usually have very low levels of education or no formal education.

As noted in Section III, there was an overall decline in gender wage gaps between 1993-94 and 2011-12, and this gap also decreased moderately over 2004-05 to 2011-12 – or rather, the ratio of women’s wages to men’s wages in manufacturing increased. But the trend differed by occupation: there was a marginal decline for white-collar workers and a moderate decline for pink-collar workers respectively, while the percentage rose significantly for blue-collar workers (Table 8). The results of a Neumark decomposition analysis presented in Table 9 shows that the raw wage gap in logarithmic scale between male and female white-collar and pink-collar workers rose over the time period. Although there was a significant rise in wage gap due to difference in productivity and a moderate rise in discrimination, the wage gap due to discrimination was much higher than the wage gap due to productivity difference at both points of time for the white-collar and pink-collar workers. For blue-collar workers, the raw wage gap between male and female workers in logarithmic scale decreased significantly and the decline in wage gap occurred mainly due to decline in wage gap due to discrimination. Nevertheless, as in the case of white-collar and pink-collar workers, the discrimination part of the wage gap was much higher than the part explained by education differences at both points of time.

Table 8: Women’s wages as a percentage of men’s wages in manufacturing, 2004-05 and 2011-12:

Year	All workers	White-collar occupations	Pink-collar occupations	Blue-collar occupations
2004-05	44%	64%	81%	46%
2011-12	49%	62%	77%	54%

Source: Employment and Unemployment Surveys of 61st and 68th rounds

Table 9: Results of Neumark decomposition analysis

	Raw wage gap in logarithmic scale	Due to difference in education	Due to discrimination
White-collar and pink-collar occupations			
2004-05	0.41	0.08 (19%)	0.33 (81%)
2011-12	0.67	0.26 (39%)	0.4 (61%)
Blue-collar occupations			
2004-05	0.79	0.2 (25.3%)	0.6 (72.7%)
2011-12	0.61	0.15 (25.4%)	0.46 (72.6%)

Source: Calculated from Employment and Unemployment Surveys of 61st and 68th rounds

From 2004-05 to 2011-12, blue-collar women’s wages as a percentage of blue-collar men’s wages increased more in rural areas (from 50 to 59 per cent) than in urban areas (from 47 to 51 per cent). This was mainly due to the significant increase (from 14 to 33 per cent) in the share of female blue-collar workers in regular salary payment systems, as the mean wages were much higher in regular monthly salary systems compared to other payment systems (Table 10). This reflected a shift in sectoral shares among women blue-collar workers in rural areas: a sharp decline in the share of tobacco industries and a sharp rise in the share of wearing apparel industries among the female blue-collar workers in rural areas, as shown in Chart 7.

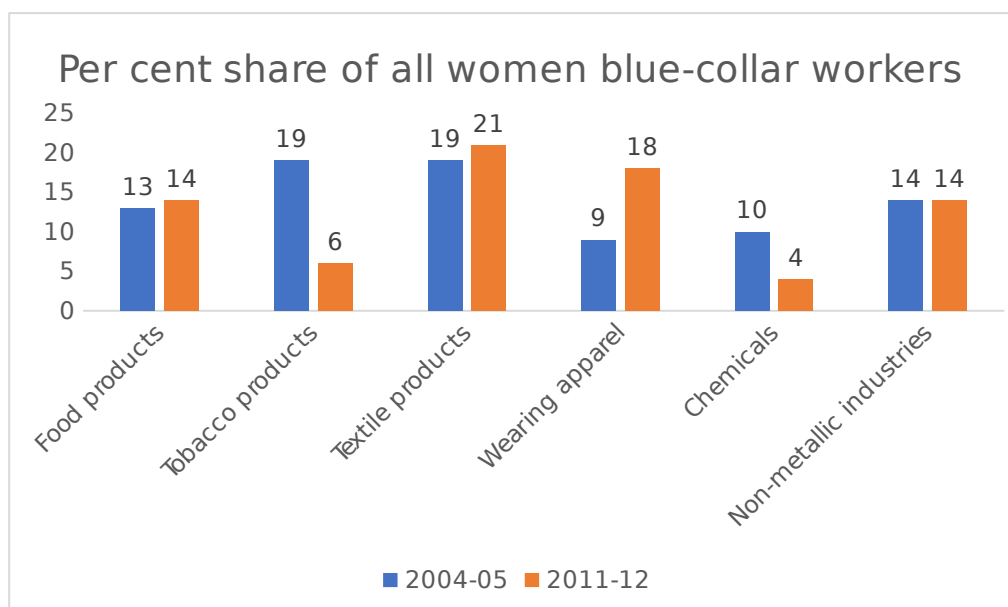
Table 10: Average wage levels in different payment systems

Different methods of payment	Average wage level 2004-05	Average wage level 2011-12
Regular monthly salary	131.74	171.21
Regular weekly salary	51.78	74.39
Regular daily salary	58.32	91.48

Piece-rate payment	57.87	74.98
Others	64.94	83.99

Source: Employment and Unemployment Surveys of 61st and 68th rounds

Chart 7: Blue collar women workers in manufacturing



Source: Employment and Unemployment Surveys of 61st and 68th rounds

Since the major employment in tobacco industries occurs as piece-rate work and in wearing apparel industries as regular monthly salary work, this shift resulted in a reduction in the share of women blue-collar workers in piece rate payment systems and increased their share in regular monthly salary systems. In addition, the majority of women blue-collar workers in tobacco industries tended to work from their own dwellings whereas in the case of wearing apparel industries, the workers mainly worked in the employer's enterprise. Thus, the sectoral change resulted in an increase in share of formal sector employment from 41 per cent to 52 per cent of rural women blue-collar workers in manufacturing over the period 2004-05 to 2011-12.⁶

It is worth considering what difference the nature of ownership of enterprises makes to gender wage gaps in manufacturing. Here the results may be somewhat surprising, given the widespread expectation that public sector manufacturing enterprises would have lower gender wage gaps. Enterprises can be divided into three groups according to their type of ownership: Group 1 includes proprietary firms, partnership

⁶ Formal sector is defined here to consist of the enterprises with 10 or more workers with the use of electricity and 20 or more workers without the use of electricity.

firms and co-operative societies; Group 2 consists of public sector enterprises; and Group 3 is of public/private limited companies. As Table 11 shows, the ratio of women's to men's wages improved moderately in Group 1 enterprises and significantly in Group 3 enterprises - but it was low and declined substantially for Group 2 enterprises!

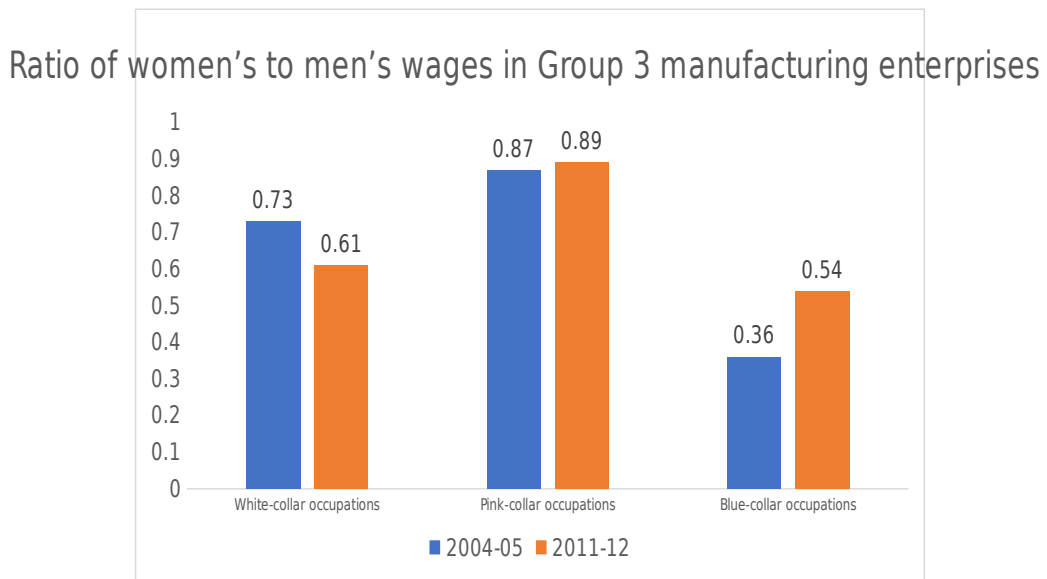
Table 11: Ratio of women's to men's wages in different manufacturing enterprises

	2004-05	2011-12
Group 1 enterprises	0.53	0.56
Group 2 enterprises	0.46	0.28
Group 3 enterprises	0.38	0.56

Source: Employment and Unemployment Surveys of 61st and 68th rounds

In group 3 enterprises, the wage ratio improved significantly for blue-collar occupations, improved marginally for pink-collar occupations and declined significantly for white-collar occupations, as indicated by Chart 8. However, due to the high share of blue-collar workers, the wage trend was substantially influenced by the wage trend of blue-collar workers. The reason for the increase in the women's to men's wage ratio among blue-collar workers in group 3 enterprises was the much higher increase in the share of regular monthly salary earners among women blue-collar workers there, from 45 to 75 per cent. By contrast, the share of regular salary earners in total blue-collar women workers increased from 37 to 66 per cent in Group 2 manufacturing enterprises, and from only 23 to 29 per cent in Group 1 enterprises. Meanwhile, more than 80 per cent of men blue-collar workers were in regular salaried employment in both Group 2 and Group 3 enterprises in both periods. Another reason behind the overall increase in the female wage to male wage ratio in group 3 enterprises was the greater increase in share of white-collar and pink-collar occupations for women workers compared to their men counterparts. However, while the relative wage position improved for female workers in Group 3 enterprises, the employment share of Group 3 enterprises in all women blue-collar manufacturing workers declined from 20 to 18 per cent, whereas it increased among men blue-collar workers, from 20 to 28 per cent.

Chart 8: Ratio of women's to men's wages in Group 3 manufacturing enterprises



Source: Employment and Unemployment Surveys of 61st and 68th rounds

It is clear from this analysis that gender-based wage discrimination remained quite significant in the Indian manufacturing sector over 2004-05 to 2011-12. However, there were some positive changes: sectoral change resulted in more women blue collar manufacturing workers coming under the regular monthly salary system (where the workers have to work in their employers' enterprise) and a smaller share of women involved in piece-rate work, usually done from their homes. Although the relative wage position improved in public/private limited companies, the share of women's employment in those enterprises declined over time.

VI. Conclusion

Overall, this discussion points to an overall context of significant unpaid work performed by women, which in turn has fed into lower reservation wages and less social valuation of all work performed by women. Not only do most women in India perform unpaid work, this prevents their ability to engage in paid employment and also adds to double burden and time poverty when they do work outside the home as well. Indeed, the number and proportion of unpaid women workers actually increased in the period of India's economic growth boom. For those women who are employed, this has meant greater exploitation in terms of significant

gender wage gaps, at least partly because women workers have been clustered into poorly paid activities that are seen as less skilled. What is more problematic is the role of public employment strategies that rely on underpaid women workers to run major public schemes for nutrition, health and education, which have had the perverse and (presumably) undesired effect of intensifying gender discrimination in terms of occupational segmentation and gender wage gaps. It was also observed that gender gaps in manufacturing have been the largest for enterprises in the public sector. Clearly, in this context, public policy can play a major positive role in rectifying this distressing situation - if there is the political will to do so.

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