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# **Post-reform Trends in Wage-Differentials: A Decomposition Analysis for India**

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## *Abstract*

*Wage inequality often creates much broader socio-economic inequality and may even accentuate them. For attaining equitable development convergence in wages and earnings is therefore desirable. This paper explores trends and patterns in wage differentials in India in the post reform period. Using decomposition technique it compares trends in within group and between group disparities – across occupational group, gender, job type, and region. It is observed that while inter-group disparity or vertical differentials are coming down in terms of wage rates, they are increasing in terms of total earnings because of more than proportionate rise in disparity in labour demand and job availability. Intra-group wage differentials have increased among most of the occupations as also among several sub-groups, leading to polarization within groups. Decomposition analysis shows that wage differential across some groups are mainly due to the skill factor while for some other groups it is pure discrimination or unfavourable labour market conditions which is creating the wage differential. Only an inclusive growth strategy will lead to lowering of wage differentials and removal of disparities in living standards across space and people.*

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### ***Abstract***

*Wage inequality often creates much broader socio-economic inequality and may even accentuate them. For attaining equitable development convergence in wages and earnings is therefore desirable. This paper explores trends and patterns in wage differentials in India in the post reform period. Using decomposition technique it compares trends in within group and between group disparities – across occupational group, gender, job type, and region. It is observed that while inter-group disparity or vertical differentials are coming down in terms of wage rates, they are increasing in terms of total earnings because of more than proportionate rise in disparity in labour demand and job availability. Intra-group wage differentials have increased among most of the occupations as also among several sub-groups, leading to polarization within groups. Decomposition analysis shows that wage differential across some groups are mainly due to the skill factor while for some other groups it is pure discrimination or unfavourable labour market conditions which is creating the wage differential. Only an inclusive growth strategy will lead to lowering of wage differentials and removal of disparities in living standards across space and people.*

### **I. Introduction**

Inequality in Wages and Earnings are responsible for much of the disparity that exists in assets, consumption, health care, educational attainment, and other accepted indicators of well-being, especially in developing countries. This causation also tends to perpetuate, or even accentuate, inequalities through their impact on human capital formation. As a result, interventions to reduce wage differentials across various sections of the society become a major policy objective for developing countries like India. To do so, one must carefully explore the levels, trends, and probable causes of wage and earning differentials in the country.

While wage differential would certainly exist across different occupations because of the differing levels of skill endowment required for such jobs, the pattern or magnitude would change with changing economic order. However, apart from such hierarchical structure, evidences of spatial or inter-personal wage differences are also quite substantial in India. While a part of that may again be because of endowment gaps, pure discrimination in terms of lower wage rates paid to certain groups are also common. These issues are also to be explored to come up with meaningful policy options.

In addition, the last decade of Liberalisation-Privatisation-Globalisation (LPG) in India have initiated new dynamics in the labour market. On one hand, it is expected that with increased investment, trade, & output, more and better employment opportunities would emerge and labour mobility would

increase, leading to narrowing down of horizontal wage differences among workers with similar skills and in same type of jobs. On the other, as demand for new skills and occupations increase, vertical wage differences are expected to rise. The overall impact would depend on how broad-based the labour market in the economy is, whether movement across skill-barriers is relatively easy, and whether institutions for re-training and re-deployment are in place. It has however been generally argued that LPG in India has led to deterioration of the position of the workers in the labour market both in terms of job-availability and wages offered. It is in this context that the present paper attempts to explore the following issues:

- a) Determining levels and trends in Wage Differentials across and within occupational groups, genders, regions, and job types;
- b) Decompose wage gaps between groups into a part due to endowment/skill differences and that due to pure discrimination in wage rates.

## **II. Wage Inequality – A Brief Review**

Rising wage inequality among workers in developed countries, especially in USA and UK, have been well documented. Studies on developing countries, particularly Latin American countries since the 1980s have also been in the public domain [see Wood (1997), and Katz and Autor (1999), for a review of those studies]. While studies on wage differentials in India, particularly the post-reform dynamics of it, have been sparse, handful of those that exist (Kingdon, 1998; Kingdon & Unni, 2001; Duraiswamy, 2002; Galbraith, 2004; Dutta, 2005) either focus on specific industries, or specific types of workers, or ignore the possibility of segmented labour markets & hence segmented wage functions for different groups. The present paper therefore adds value to existing literature on *four* counts. First, it takes into consideration all wage workers in the economy – casual & regular, male & female, and in all occupations and regions. Second, it uses segmented wage functions for different groups to estimate the impact of endowments (proxied by educational attainment) on wages. Third, it augments the existing literature by applying modern wage decomposition techniques to India and examining the extent of wage differences attributable to skill-gap and the extent attributable to pure labour market discrimination. Fourth, it tries to explore what part of the aggregate disparity is due to inter-group differences and what part is due to intra-group differences, as also the post-reform trends in their relative importance.

## **III. DATABASE AND METHODOLOGY**

We use NSSO data on Employment and Unemployment from the 50<sup>th</sup>, 55<sup>th</sup> and 61st Round surveys of NSSO pertaining to the years 1993-94, 1999-2000, and 2004-05. Wages are converted to real wages at constant 1999-00 prices and both Wage rates and Weekly total earnings are examined. Disparities are studied using CVs, inter-group ratios and Theil indices.

To examine relative importance and trends in intra-group & inter-group wage inequality the Theil Index (TI) and its decomposition formula has been used. The TI is a member of the *General Entropy Index* class and is given by:

$$TI = (1/n)\sum (y_i/y).ln (y_i/y);$$

where  $y_i$ -s are individual values,  $y$  is mean value, and  $n$  is number of observations.

The bounded version of it, called the Relative Theil Index (RTI) is given by:

$$RTI = (TI / \ln n), \text{ which ranges between 0 and 1.}$$

The decomposition version of TE is as follows:

$$TE = \sum \theta_k . TE_k + \sum \theta_k . \ln (y_k/y);$$

where  $\theta_k$  is share of  $k$ -th subgroup in total income;  $TE_k$  is Theil Index for  $k$ -th subgroup, and  $y_k$  is mean income of  $k$ -th subgroup, the sum taken over the sub-groups.

To explore the relative importance of endowments and discrimination in explaining wage gaps, we use the parametric approach made popular by Mincer (1974), Blinder (1973) and Oaxaca (1973). The Wage Function is expressed as (log of) wages being dependent on endowment levels (proxied here by education & technical knowledge) as:

$$W_i = X_i B_i$$

where  $W_i$  is Wages and  $X_i$  is Endowment vector for  $i$ -th group, while  $B_i$  is the parameter vector associated with endowments, also interpreted as Returns to Endowment.

Therefore, the estimated Mean Wage Gap between  $i$ -th and  $j$ -th group ( $W_i - W_j$ ) can be decomposed as:

$$(X_i B_i - X_j B_j) = (X_i - X_j) . B_i - X_j . (B_i - B_j)$$

The first component is the Wage gap between  $i^{\text{th}}$  and  $j^{\text{th}}$  groups even if returns ( $B$ -s) were identical, i.e. the part due to Endowment Gap. The second component is the gap that would exist even if endowments ( $X$ -s) were identical, i.e. the part due to differences in Returns to Endowment or the pure Discrimination Effect (also called Remuneration Effect in literature).

We use educational attainments as endowment vector with Dummy variables for Below Primary Literates, Primary School completed, Middle school completed, Secondary completed, Higher secondary completed, and, Graduates & above, with the Illiterates as the *Control group*. In addition, another dummy variable related to attainment of Technical education has also been included.

We look at Spatial disparities – across Rural & Urban sectors, and Advanced & Lagging regions; at Interpersonal disparities – across gender; and also across job-types indicated by Regularity or otherwise of jobs.

#### **IV. Wage Differentials: Magnitudes - Patterns – Trends**

Before we embark on the issue of wage differentiation, let us take a brief look at the levels and trends in wages. Trends in wages can be explored using both Wage per Manday or Wage Rate, and Wages

per Worker per Week or Average Weekly Wage. While the former is purely a measure of wage rates, the latter reflects availability of job per week also.

Wage rates, or average wage per manday, which was 52 rupees in 1993, increased to Rs. 79 in 1999, and to Rs. 83 in 2004 (Table 1a). Wage rates for the regular workers, on an average, are more than three times that of the casual workers. While Wage Rate increased at 7.2 percent pa during 1993-99, it increased by only 1.0 percent pa during 1999-04 period.

**Table 1a**  
**Average Wages - 1993-2004 - in constant 1999-00 prices**

<i>Groups</i>	<i>Wage per Week (Rs)</i>			<i>Wage per Man-day (Rs)</i>		
	<i>1993</i>	<i>1999</i>	<i>2004</i>	<i>1993</i>	<i>1999</i>	<i>2004</i>
<b>Professionals</b>	807	1045	1709	115	174	250
<b>Technical</b>	975	1254	1513	139	196	220
<b>Administrative</b>	1672	2288	2005	239	360	296
<b>Clerical</b>	873	1114	1198	125	173	175
<b>Sales</b>	399	482	482	57	75	73
<b>Service</b>	418	569	573	60	88	86
<b>Farmers etc.</b>	175	203	213	25	37	39
<b>Production etc.</b>	361	458	450	52	74	71
<b>Transport</b>	560	643	669	80	103	104
<b>Labourers nec</b>	367	437	390	52	72	65
<b>Rural</b>	250	317	326	36	55	57
<b>Urban</b>	656	832	890	94	132	135
<b>LIG States</b>	334	418	438	48	69	74
<b>HIG States</b>	401	523	636	57	91	104
<b>Male</b>	427	540	571	61	90	94
<b>Female</b>	203	269	296	29	48	53
<b>Regular</b>	730	925	955	104	144	138
<b>Casual</b>	197	236	228	28	42	42
<b>Aggregate</b>	365	467	497	52	79	83

*Source:* Author's calculations based on NSSO (1995), NSSO (2001), and NSSO (2006).

**Table 1b**  
**Key Disparity Measures – 1993-2004**

<i>Indicators</i>	<i>Wage per Week</i>			<i>Wage per Man-day</i>		
	<i>1993</i>	<i>1999</i>	<i>2004</i>	<i>1993</i>	<i>1999</i>	<i>2004</i>
<b>CV - across Occupations (%)</b>	67.3	72.3	69.6	67.3	70.6	65.6
<b>CV - across States (%)</b>	35.5	42.0	46.2	35.4	39.6	41.6
<b>Urban-Rural Ratio</b>	2.6	2.6	2.7	2.6	2.4	2.4
<b>HIG-LIG Ratio</b>	1.2	1.3	1.5	1.2	1.3	1.4
<b>Male-Female Ratio</b>	2.1	2.0	1.9	2.1	1.9	1.8
<b>Regular-Casual Ratio</b>	3.7	3.9	4.2	3.7	3.4	3.3
<b>Overall CV (%)</b>	151.3	281.2	272.3	116.2	125.3	125.8
<b>Overall Theil Index</b>	0.47	0.49	0.52	0.47	0.46	0.46

*Source:* Same as Table 1.

If we now consider *Average Weekly Wage*, it is observed that in real terms, it has increased from Rs 365 in 1993 to Rs 467 in 1999, and to Rs 497 in 2004. The regular workers are however earning more than four times per week compared to the casual workers. In addition, while average weekly wage increased during both the quinquenna for the regular workers, it decreased in the second quinquenna for the casual workers. Average Weekly Wage is rising by about 4.2 per cent and 1.3 percent pa during 1993-99 & 1999-04 respectively. Compared with growth in wage rates, it therefore follows that the weekly availability of jobs declined during 1993-99 period while it increased during 1999-04 period. However, this increase is concentrated among the regular workers only. While the ratio of regular to casual real wage rate per manday is declining, indicating some sort of convergence in daily wage rates, the ratio per week is found to be increasing which is due to continuous decline in the availability of job per week for the casual workers. This is a matter of serious concern and we explore such differentials next. A brief summary of the disparity is given in Table 1b.

### 1. Occupational Disparity

It is quite natural that different occupations would have different wage levels depending on skill requirement and actual (labour) demands. Though some hierarchical stability is expected, it is desired that with development inter-group disparity would come down over time. It is observed that the hierarchy has remained stable over time with the Administrative, Professionals & Technical workers at the top of the wage ladder and the Farmers, Production related workers and other miscellaneous labourers at the bottom. During the LPG regime, disparity across occupations (measured by CV in wage rates) had increased substantially in the first quinquenna, dropped thereafter, but still remained higher than the initial period (Table 2). Intra-group wage gaps have followed similar pattern with CVs increasing in the first half for all occupations except Administrative & Sales workers, and decreasing in the second half for all except Administrative & Service related workers.

Table 2  
**Intra-Occupation & Inter-Occupation Disparity in Wages (CV in %)**

Occupation	<i>Wage per Week</i>			<i>Wage per Man-day</i>		
	1993	1999	2004	1993	1999	2004
<b>Professionals</b>	160.1	455.6	201.2	88.9	96.4	86.2
<b>Technical</b>	152.6	190.5	249.7	58.7	68.6	67.4
<b>Administrative</b>	159.4	199.7	367.9	73.7	67.9	153.3
<b>Clerical</b>	132.3	275.8	185.2	59.3	80.3	67.8
<b>Sales</b>	148.3	196.0	251.0	132.8	88.6	104.5
<b>Service</b>	148.9	201.1	201.4	91.0	91.6	96.4
<b>Farmers etc.</b>	84.2	103.0	109.9	122.4	147.0	89.7
<b>Production etc.</b>	120.7	160.3	201.3	90.3	178.9	100.3
<b>Transport</b>	134.9	233.7	192.7	77.7	83.6	87.2
<b>Labourers nec</b>	118.0	143.4	186.6	79.4	84.8	83.1
<b>All Workers</b>	151.3	281.2	272.3	116.2	125.3	125.8
<b>Inter-Occupation Disparity</b>	67.3	72.3	69.6	67.3	70.6	65.6

*Source:* Same as Table 1.

At the aggregate level, using the Theil index, it is evident that disparities within occupations are increasing for all occupations except the Professionals and Sales workers, while across groups

disparity have almost remained unchanged over this period (Table 3). For total earnings per week, similar results are obtained at the occupational group level. The only difference is that here across group disparity have increased over time. This reflects the fact that disparity in availability of jobs is on the rise in the post-reform period, rather than disparity in wage rates.

**Table 3**  
**Intra-Occupation & Inter-Occupation Disparity in Wages - Theil Index**

Occupation	Wage per Week			Wage per Man-day		
	1993	1999	2004	1993	1999	2004
Professionals	0.38	0.41	0.32	0.38	0.39	0.31
Technical	0.18	0.22	0.22	0.18	0.23	0.22
Administrative	0.23	0.18	0.53	0.23	0.19	0.52
Clerical	0.17	0.19	0.22	0.17	0.20	0.21
Sales	0.43	0.28	0.36	0.42	0.28	0.33
Service	0.34	0.34	0.38	0.35	0.34	0.36
Farmers etc.	0.24	0.24	0.33	0.22	0.21	0.24
Production etc.	0.34	0.36	0.38	0.33	0.36	0.32
Transport	0.25	0.29	0.35	0.26	0.27	0.31
Labourers nec	0.25	0.26	0.29	0.24	0.23	0.23
<b>All Workers</b>	<b>0.47</b>	<b>0.49</b>	<b>0.52</b>	<b>0.47</b>	<b>0.46</b>	<b>0.46</b>

Source: Same as Table 1.

It thus seems that the initial years of globalisation and privatisation accentuated disparity among wageworkers both across and within occupational groups. In the second half, the *Spread Effects* of more broad-based reforms have neutralized that to some extent, but yet the overall impact is that of divergence. Horizontal differences are therefore on a rise leading to some sort of polarization within occupational groups while vertical differences have stabilized.

## 2. Spatial Disparity

Spatial disparity has been analysed from two standpoints – that between Rural & Urban areas, and that between Low Income Group (LIG) and High Income Group (HIG) states.<sup>2</sup>

**Table 4**  
**Intra-Group Disparity in Wages (in %)**

Groups	Wage per Week			Wage per Man-day		
	1993	1999	2004	1993	1999	2004
CV within LIG States	139.7	206.5	231.5	121.7	120.3	115.0
CV within HIG States	159.4	325.1	304.5	110.2	126.3	140.2
<b>HIG-LIG Ratio</b>	<b>1.2</b>	<b>1.3</b>	<b>1.5</b>	<b>1.2</b>	<b>1.3</b>	<b>1.4</b>
CV within Rural	134.9	243.8	259.0	120.3	126.9	112.8
CV within Urban	159.7	300.3	266.3	95.3	107.5	122.5
<b>Urban-Rural Ratio</b>	<b>2.6</b>	<b>2.6</b>	<b>2.7</b>	<b>2.6</b>	<b>2.4</b>	<b>2.4</b>
CV within Male	145.4	244.9	239.5	135.5	147.4	139.3
CV within Female	146.8	278.8	269.7	108.7	118.7	119.9
<b>Male-Female Ratio</b>	<b>2.1</b>	<b>2.0</b>	<b>1.9</b>	<b>2.1</b>	<b>1.9</b>	<b>1.8</b>
CV within Regular	145.6	277.1	266.9	79.7	91.9	104.7
CV within Casual	101.2	150.5	118.5	124.8	139.0	70.3
<b>Regular-Casual Ratio</b>	<b>3.7</b>	<b>3.9</b>	<b>4.2</b>	<b>3.7</b>	<b>3.4</b>	<b>3.3</b>

Source: Same as Table 1.

For Rural Urban Disparity, it is observed that while disparity in wage rates have decreased throughout the period of study, that in total weekly earnings have continuously increased (Table 4). This indicates that while mean wages per manday in rural areas are coming closer to those in urban areas, extent of job availability in the two sectors are diverging. Within the sectors, two contrasting trends are observed. Intra-group disparity in both wage rates and earnings are on the rise in the urban areas but in the rural areas while disparity in wage rates are declining that in earnings are on the rise. This underlines the problem of job-availability in the rural areas again. Theil index also follow a similar pattern and across group disparities are declining whereas within group disparities are rising (Table 5 and 6).

If we consider the LIG and HIG states, it is natural to expect that wages in the latter would be higher than that in the former. However, what is disconcerting is that the disparity between them is increasing in the post-reform period – both in terms of wage rates and total weekly earnings, especially the second. Thus it is quite evident that benefits of LPG have accrued mainly to the HIG states, which is not surprising given the concentration of FDI and Domestic Private Investment in selected states. Within group disparity however have increased consistently in the HIG states while for the LIG states disparity first increased and then decreased, leading ultimately to a fall. Similar results are obtained using Theil index whereby between group disparity in wage rates among HIG and LIG states is rising over the decade in spite of some decline in the first quinquenna, whereas within group disparity is falling. This perhaps is due to falling within group disparity in the LIG states, which outweighs the rising disparity within the HIG states. If we consider weekly earnings, between group disparity is found to be falling while within group disparity is rising – indicating that disparity in job availability is falling within HIG & LIG states but rising across the two types of states. Thus, though some convergence is taking place in terms of job availability, wage rates in these two categories of states are diverging.

Table 5  
**Decomposition of Disparity – Theil Index – Wages per Manday**

<b>Groups</b>	<i>Within Group Disparity</i>			<i>Between Group Disparity</i>		
	<i>1993</i>	<i>1999</i>	<i>2004</i>	<i>1993</i>	<i>1999</i>	<i>2004</i>
<b>Occupational Groups</b>	0.25 (52.6)	0.25 (54.8)	0.54 (117.8)	0.22 (47.4)	0.21 (45.2)	-0.08 (-17.8)
<b>Urban-Rural</b>	0.39 (83)	0.38 (81.6)	0.42 (91.9)	0.08 (17)	0.08 (18.4)	0.04 (8.1)
<b>HIG-LIG</b>	0.46 (98.8)	0.44 (96.2)	0.45 (98)	0.01 (1.2)	0.02 (3.8)	0.01 (2)
<b>Male-Female</b>	0.44 (93.7)	0.44 (94.7)	0.44 (95)	0.03 (6.3)	0.02 (5.3)	0.02 (5)
<b>Regular-Casual</b>	0.28 (59.4)	0.28 (61.6)	0.32 (69)	0.19 (40.6)	0.18 (38.4)	0.14 (31)

*Source:* Same as Table 1.

*Notes:* Figures in parenthesis are percentages to total disparity

What is evident therefore is that spatial disparity in wages and earnings have increased in the post-reform period both across rural-urban setting and across the lagging & advanced states. Whereas the wage rates are converging across Rural-Urban setting and rising earning differential is due to disparity in job availability, for HIG-LIG setting, wage rates themselves are diverging. This has been accompanied by lower (within) disparity in Rural areas and LIG states, and higher disparity in Urban areas and HIG states. The main reason behind this is concentration of economic activities in the advanced areas – Urban and HIG states – leading to expansion of labour market, albeit at different pace for different types of jobs and skills. On the other hand, economic stagnation in the lagging areas – Rural and LIG states – are keeping the (within) disparity under check no doubt, but without any significant rise in mean wages either. Sharing of backwardness in these areas is thus quite prominent and (non) availability of jobs is emerging as the main problem in these areas.

**Table 6**  
**Decomposition of Disparity – Theil Index –Earnings per Week**

<b>Groups</b>	<i>Within Group Disparity</i>			<i>Between Group Disparity</i>		
	<i>1993</i>	<i>1999</i>	<i>2004</i>	<i>1993</i>	<i>1999</i>	<i>2004</i>
<b>Occupational Groups</b>	0.25 (53)	0.26 (53.5)	0.62 (119.1)	0.22 (47)	0.23 (46.5)	-0.1 (-19.1)
<b>Urban-Rural</b>	0.38 (81.5)	0.41 (83.5)	0.48 (93.2)	0.09 (18.5)	0.08 (16.5)	0.04 (6.8)
<b>HIG-LIG</b>	0.46 (98.8)	0.49 (99.5)	0.52 (100.1)	0.01 (1.2)	0 (0.5)	0 (-0.1)
<b>Male-Female</b>	0.44 (93.5)	0.47 (96.1)	0.5 (96.3)	0.03 (6.5)	0.02 (3.9)	0.02 (3.7)
<b>Regular-Casual</b>	0.28 (58.9)	0.29 (59.2)	0.33 (64.3)	0.19 (41.1)	0.2 (40.8)	0.19 (35.7)

*Source:* Same as Table 1.

### 3. *Gender Disparity*

Inter group wage disparity is declining both in terms of wage rates and total earnings in the post-reform period indicating convergence in male and female wages. However, for both the groups, intra-group disparities have increased during this period, especially for the females. When decomposed, Theil indices show that in the post-reform period within group disparity have increased while between group disparity have declined. Thus the main reason behind rising wage differential in the post-reform period is rising disparity within males and females rather than between them.

### 4. *Disparity across Job Types*

While it is quite obvious that earnings of Regular workers will be higher than that of Casual workers, what is alarming is that even though wage rates across these two job types are converging, total weekly earnings are diverging. Thus, job availability for the casual workers are becoming narrower in the post-reform period.

Within the groups, disparity is falling for the casual workers, where Middle-wage jobs are on the rise while disparity among regular workers is rising, mainly due to polarization of workforce at the Top- and Bottom-wage jobs.

Using the Theil index we find similar results. Between group disparity in wage rates are declining while within group disparities in both wage rates and total earnings are increasing. The relative importance of within group disparity is therefore increasing in the post-reform period.

#### 5. *Summary*

It can thus be commented that inter-group or vertical differences in wage rates are declining in the post-reform period except the divergence between the HIG and LIG states. However, vertical differences in total weekly earnings are increasing across all typifications except convergence among males & females. Thus, though wage rates are coming closer among groups, disparity in job availability is outweighing the former and vertical differentials in total earnings are on the rise. Added to this is the growing horizontal differential within groups, except the lagging spaces – rural areas and LIG states. The new economic regime with its focus on private initiative is therefore consolidating both vertical and horizontal segmentation in the labour market – in terms of total earnings in the former and both wage rates & total earnings in the latter. Given the ground rules of economic growth at present – rising regional concentration of economic activities, increasing skill-biased growth, sudden expansion of specific sectors & allied occupations – the results are not surprising. Policy makers therefore need to intervene in spreading the labour demand across much wider physical space and also across much broader skill/education base. This will solve the dual problems of disparities in wage rates and that in job availability so that differentials in total earnings, the cynosure of human advancement, narrow down, both across and within groups.

It is this second point that provokes us to decompose wage gaps among groups into that explained by *Endowment Gap* and that due to pure *Discrimination Effect*, which we explore next.

### **V. WAGE DIFFERENTIAL – ENDOWMENT GAP OR PURE DISCRIMINATION?**

The various wage differentials we have described so far in terms of simple ratios, CVs, and Theil indices can also be explored using parametric estimation of wage function. As mentioned earlier, we estimate a log-linear wage function with (log) Wage being dependent on Endowment factors proxied by educational achievements (expressed as dummy variables). The Blinder-Oaxaca formulation of the Mincerian wage function have been used and estimated separately for the different groups. The gaps in estimated mean wages are then decomposed into that due to Endowment Effect and that due to Discrimination Effect. The following results are obtained (Table 7).

#### 1. *Spatial Wage Gap*

As we have already noted, rural-urban Wage rates are coming closer in the post-reform period. However, urban wages are still more than twice that of rural mean wage rates. More than 60 percent of this wage gap is explained by Endowment Effect while only about 35 per cent is Pure

Discriminatory Effect. In addition, the proportion of Endowment Effect is increasing over time, indicating that divergence in education is the main reason behind rural-urban wage differential in India. The LIG-HIG wage gap has increased in the post-reform period. Interestingly, contribution of Endowment Gap was more than three-fourth in 1993 but has declined to just over half in 2004. Thus, the rise in wage differential is mainly due to increasing component of Remuneration Effect. This again points to economic activities being concentrated in HIG states, creating huge labour demand, and in the process raising wage rates substantially relative to LIG states.

Table 7  
**Wage Gap Decomposition in India – 1993-99**  
**(Relative Contribution in Percentage Terms)**

<b>Group</b>	<b>Endowment Gap</b>			<b>Remuneration Gap</b>		
	<b>1993</b>	<b>1999</b>	<b>2004</b>	<b>1993</b>	<b>1999</b>	<b>2004</b>
<b>Urban-Rural Gap</b>	61.50	61.56	64.72	38.50	38.44	35.28
<b>HIG-LIG Gap</b>	77.20	51.41	55.47	22.80	48.59	44.53
<b>Male-Female Gap</b>	41.48	40.38	30.44	58.52	59.62	69.56
<b>Regular-Casual Gap</b>	62.84	67.68	76.22	37.16	32.32	23.78

*Source:* Same as Table 1.

Spatial process therefore is marked by disparities in educational accessibility and attainment between urban and rural areas; possible Rural-Urban migration wherein skilled rural persons are shifting to urban areas; thereby accentuating the endowment differential between these two sectors. On the other hand, spatial differences among advanced and lagging states are more on the lines of divergences in labour demand and wage rates rather than skill component of the workers therein.

### *2. Gender Wage Gap*

Though male-female wage rates are coming closer over the years, the situation is far from satisfactory if we explore further and decompose the Wage Gap into Endowment and Discriminatory Effects. It is observed that only two-fifth of the wage gap in 1993 could be explained by differences in endowment between males and females. 60 percent of the gap was therefore due to Remuneration Effect. Moreover, the contribution of this Remuneration Effect has increased further to 70 percent in 2004, indicating that contrary to the desired objective, discrimination against women workers are increasing in the post-reform period. Availability of women workers at substantially lower wage rates relative to males, and deteriorating employment market situation forcing more women to take up whatever jobs are available, are possible reasons behind such dynamics.

### *3. Wage Gap Across Job Types*

We have earlier seen that wage rates for Regular and Casual workers are coming closer in the post-reform period. However, the disparity among these two groups is the most glaring of differences with Regular workers earning more than three times that of Casual workers per man day. Here too, Endowment Gap is the main reason, explaining two-third of the wage gap in 1993 and increasing in

importance over the years. Thus, low wages of the casual workers are mainly because of their low factor endowment – education and technical knowledge - as observed in this study.

## **VI. DYNAMICS OF WAGE DIFFERENTIATION - SUMMARY**

The dynamics of wage differentiation in post-reform India is therefore marked by several contrasting patterns making the scenario complex. On one hand aggregate wage differential is rising and on the other job availability is becoming more uncertain leading to relatively higher differentials in total earnings. However, the labour market is substantially segmented along lines of sector (Rural-Urban), region (HIG States-LIG States), gender (Male-Female), Job Type (Regular-Casual), and Occupations. While inter-group disparity or vertical differentials are coming down in terms of wage rates, they are increasing in terms of total earnings because of more than proportionate rise in disparity in labour demand and job availability. This is quite alarming and requires immediate address by economic authorities. The NREGS, which has recently been extended to all districts of the country, may emerge as an important policy intervention in this regard. Vertical differences however are on the rise between LIG and HIG states indicating concentration of growth and investment in the ‘happening’ states. Unless the lagging regions come up sharply in improving their attractiveness as investment destination, such inequality would rise further, negating fruits of five decades of planned balanced development.

It was also expected that with globalisation and liberalization of the economy employment opportunities would expand, and increased labour demand would reduce wage gaps. However, evidences suggest that this has not happened in India. Intra group differentials have increased among most of the occupations, as also among several sub-groups, leading to polarization within groups. It has been commented that economic growth in the new regime is skill-biased and hence personal skill endowments define the wages available to individuals. As demand for specific skills rise, inequality rises even within similar groups because of endowment gaps. Our decomposition analysis was aimed at exploring this issue. It is observed that a major part of wage differential across regular & casual workers, and between rural & urban areas, is indeed due to differences in skill factor. Moreover, the contribution of skill-gap in explaining wage gap is increasing for these groups in the post-reform period. However, pure discrimination and differences in returns to endowment also exist in some markets. Gender discrimination in wages is on the rise and convergence in male-female earnings is only because educational attainments of females, especially urban females, are fast coming closer to those of males. Similarly, Remuneration effect is still the prime factor behind wage gap between LIG and HIG states, indicating the role played by concentration of economic activities in selected regions in creating favourable labour market conditions. Faster economic growth is therefore still the best bet for expanding employment and raising wages. However, that growth must be broad-based across sectors and regions so that certain skills and endowments are not left out of the party. Only an

inclusive growth strategy shall lead to lowering of wage differentials and removal of disparities in living standards across space and people.

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### *Notes*

- <sup>1</sup> Occupational Classifications are according to the One-digit codes of National Classification of Occupations (1968). The Ten classes are Professionals; Technical & related workers; Administrative workers; Executive & Managerial workers; Clerical & related workers; Sales workers; Service workers; Farmers, Fishers, Hunters & Loggers; Production & related workers; Transport Equipment operators; and, Labourers not elsewhere classified.
- <sup>2</sup> The states have been divided into Low Income Group (LIG) and High Income Group (HIG) accordingly as their Per Capita Net State Domestic Product are lower or higher than All India Per Capita Net Domestic Product respectively. The states belonging to LIG in both 1993 and 1999 are Assam, Bihar, Jammu & Kashmir, Madhya Pradesh, Manipur, Meghalaya, Orissa, Rajasthan, Tripura, and Uttar Pradesh. HIG states in both the years have been Andaman & Nicobar, Chandigarh, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Mizoram, Pondicherry, Punjab, Tamil Nadu. Andhra Pradesh, Sikkim, and West Bengal were in LIG in 1993 but came up to HIG in 1999. On the other hand, Arunachal Pradesh and Nagaland were in HIG in 1993 but went down to LIG in 1999.

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