Structural Change, Skill Intensity and Wage Inequality

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Structural Transformation

Defined as a decline in the relative share of agriculture sector with a corresponding rise in the share(s) of industry and/or services sector.

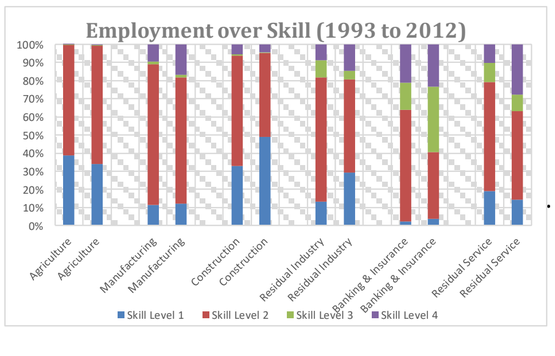
In this study, structural transformation is viewed as shifts in the employment share and GDP contributions of agriculture, industry and services sector.

Post-liberalization period in India saw a massive shift in the economy. There was a services sector boom – both in terms of employment generation as well as contribution to GDP. In terms of contribution to GDP, industrial sector saw a near stagnation while contribution of agriculture and allied sectors declined.

Skill Composition

Skill is defined using National Classification of Occupations (NCO) 2015 definition. In the Indian context, the skills necessary to perform the tasks and duties of a given job can be acquired not only through formal education but also through *informal training and experience*. Four skill levels are thus defined for NCO 2004 vis-à-vis the skill levels defined in International Standard Classification of Occupations (ISCO)-88. Skill Level 1 are the least-skilled workers while Skill Level 4 are the most-skilled workers.

Between 1993-94 and 2011-12, there has been a significant increase in the demand for high-skilled labour – across all production sectors, except construction. Correspondingly, share of Skill Level 2 workers has shrunk in all sectors, except in agriculture.



	1993-94	1999-2000	2004-05	2011-12	Average Annual Growth
Skill 1	67	79	84	134	28%
Skill 2	146	175	171	234	18%
Skill 3	263	352	362	443	20%
Skill 4	387	512	609	794	27%

Average real daily wages for workers with Skill Level 2 and Skill Level 3 have seen the lowest growth over the time period 1993-94 and 2011-12.

Research Question

In the light of this structural transformation being witnessed in India, the differences in wage growth by skill levels, and the corresponding changing skill component of labour demand; what are the patterns of wage inequality emerging in the labour market? More precisely, who loses out and who benefits in the post transformation period, particularly from the lens of caste groupings, skill levels, and employment sector of workers. The patterns are studied separately for rural and urban India, and separately for men and women. The wage patterns are examined for the entire distribution of wages and not only at the mean levels.

Data Sources

The study uses four thick quinquennial rounds of National Sample Survey-Employment Unemployment Survey (NSS-EUS). It covers roughly two decades – from 1993-94 to 2011-12. It is a repeated cross-section data, representative at the state level.

The GDP figures used are released by the Government of India.

Methodology

Average wages for male workers are estimated using a standard Mincerian wage equation –

$$\ln(dailywage) = f(age, age^2, married, unionmemb, contract, education, social\ category, skill, sector)$$

In addition to the above covariates, I also include time and state fixed effects and consider all possible interactions between social group, skill, education, and sector of production with time. The predicted average wages are then studied to understand the emerging wage patterns for male workers – both rural and urban.

As part of the future work, for studying wage patterns for females, I intend to first correct for selection issues given the universally low (and lately decreasing) female labour force participation rates in India, before estimating the above Mincerian wage equation for females. I intend to rely on a Heckman selection process, trying three different specifications using caste identity, marital status, and number of children respectively as the identifying variable.

In addition to this study at the means, I also aim to analyze the distribution more minutely in the future to understand the prevailing wage patterns at each decile. To achieve this, I shall be relying on quantile regressions technique.

Emerging Wage Patterns – Rural Males

1. Skill premium for Skill 3 workers are decreasing over time.
2. Other Backward Classes (OBC) wages exceed those of Upper Castes (UC) in 2012. Wage gap between Scheduled Castes (SC) and UC; OBC and UC are reducing over time. Wage gap between Scheduled Tribes (ST) and UC remains unchanged.
3. Skill premium for Skill 2 workers remains unchanged over time, across caste categories. Skill premium for Skill 3 workers decreases for all caste groups. Skill premium for Skill 4 workers increases for OBC, while remaining unchanged for all other
4. Skill premium for Skill 2 and Skill 4 workers unchanged over time, across all sectors of production. For Skill 3 workers, the skill premium fell over time in every production sector.
5. Education premium (over illiterate workers) falling for any positive level of education.
6. Wage premium to all sectors of production over agriculture is reducing over time – however all sectors continue to offer higher wages than agriculture even in 2012..

Urban Males

1. Skill premium for all skill levels remains unchanged over time.
2. UC earn the highest wages in 2012, followed by OBC who earn no different from ST. SC males earn the lowest wage in the urban sector.
3. Wage gap between ST-UC and OBC-UC has remained unchanged over time. The gap between SC-UC has increased, with SC earning further lower wages than UC in 2012.
4. Skill premium for Skill 2 and Skill 3 workers remains unchanged for all caste categories over time. Premium earned by high-skilled UC workers has increased over time, while that for other skill categories of UC workers has remained unchanged.
5. Skill premium for all skill levels remains unchanged over time across all sectors of production.
6. Education premium (over illiterate workers) falling for any positive level of education.
7. Wage premium to all sectors of production over agriculture is reducing over time – manufacturing and residual services offering lower wages than agriculture in 2012.

Who Benefits?	Who Loses Out?
Rural Skill 4 OBC males	Rural Skill 3 males across all caste categories
Urban Skill 4 UC males	Rural Skill 3 males across all sectors of production
Rural agriculture sector	Rural ST males
Urban agriculture sector	Urban SC males
	Urban manufacturing sector
	Urban residual services sector

Conclusions

During the period of study (1999-2012), I find evidence of marginalization of workers lying in the middle of the distribution. Marginalization, both in terms of absorption in jobs as well as in terms of increase in their wages.

There is evidence of a skill-biased employment trend – benefitting the high-skilled workers (Skill Level 4), at the expense of the semi-skilled ones (Skill Level 2 and 3), and not the low-skilled workers (Skill Level 1). The 'missing segment' in terms of earnings is a new manifestation of the Indian labour market.

In addition, I also find the semi-skilled workers having benefitted the least in the post transformation period, in terms of their real daily wage earnings.

The study provides evidence for job "polarization" – increases in employment in high skill and low skill occupations relative to middle skilled occupations.

Work Ahead

The analysis presented here is solely based on the pattern of mean wages observed for urban and rural male workers in India. This needs to be extended on two fronts. One, study the patterns for each decile of the wage distribution to draw more concrete trends. Two, repeat the exercise for female workers to understand the patterns of female labour force participation in the Indian economy.

Key References

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