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# **Growth and Structure of Workforce in India : An Analysis of Census 2011 Data**

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## **Abstract**

*Census 2011 brings new dimension to ongoing debate on the decline in the growth of employment from the last two decade. The census 2011 result gives better picture when compared with NSSO estimation of workforce. It is observed that there is a fast decelerating rate of growth in overall workforce, particularly that of females, between 2001 and 2011. But the work participation rate has not declined, if not increase, as the rate of growth in workforce is not less than that of population. Secondly, incremental workforce especially the male is getting reduced to marginal workers category whereas the high concentration of female in the category of marginal workers is slightly reduced. Occupational distribution of workforce shows that cultivators are declining such decline in agriculture is replaced by increasing agricultural labour. Growth of workforce in non-agriculture is higher than that of agriculture. Growth of female workers engaged in non-agriculture is higher than their male counterparts.*

**JEL Classification:** J21, J61, J62, Q1, Q15

**Keywords:** India, Labour Workforce, Growth of Employment, Work Participation, Occupational Distribution and Workforce in Non-Agriculture

## **I Introduction**

The major objective of economic reforms is accelerating growth and expanding the employment opportunities. India in its vision programme the government has stressed more on employment generation at least two per cent per annum to be compatible with the nine per cent growth in the economy. Further, it emphasized on promoting labour intensive and high employment elasticity sectors to achieve the quantitative employment growth target (Government of India, Ministry of Labour and Employment, 2011). Again, one of the objectives of the 12<sup>th</sup> Five Year Plan is 'more inclusive growth' (Planning Commission, 2011), which is possible through the growth of productive employment. Despite of having grand plan design and vision, the overall employment growth rate is decelerating during the post reform period, in particular, during the last decade. Realising the vision and plan objective seems to be doubtful in the context of decelerating employment growth in the recent past.

NSSO's recent estimations with respect to its employment and unemployment survey, brings out a virtual stagnation in the employment growth indicating jobless growth in the Indian economy. These results have raised a concern over the employment situation among the policy makers, academicians and development activist (see, Chaudhary, 2011; Rangarajan et. al, 2011; Kannan and Ravindran, 2012; Papola, 2012).

The present paper is a quick note on an analysis of the trend in growth of workforce and change in its structure in India during the last three decades using Census data. It is an attempt to present the changes in workforce particularly in the context of recent release of Primary Census of Abstract 2011 of Census of India. The analysis is to bring out changes during last decade (2001-11) and the relative performance over the previous two decades (1980s and 1990s) for which Census data for workers is comparable. The present analysis is confined to Census data only; it does not make any comparison with NSSO based estimates, if not more than passing reference. Finally, the rural-urban dimension is out of scope for this paper in order to minimize of complexity of in-depth detailed analysis of workforce by status and gender.

## II Overall trend

### *Fast decelerating rate of growth in female workforce*

The analysis of recent census data 2011 reveals that overall rate of growth in workforce is 1.8% between 2001 and 2011 and it is observed to be marginally higher than that of the population (see Table 2). Further, the rate of growth in work force during the 2001-2011 is lower than that of previous two decades (1980s and 1990s) – a deceleration. The rate of growth in the workforce as well as population has decelerated between 2001 and 2011. However, the rate of growth in workforce has always been higher than that of population growth during the last three decades. It means that there must be increase in work participation rate (WPR).

**Table 1: Size of the Population and Total Workers – All India**

Year	Population (in millions)			Total Workers (in millions)			% of Marginal Workers		
	Male	Female	Persons	Male	Female	Persons	Male	Female	Persons
1981	354.4	330.8	685.2	181.1	63.5	244.6	2.0	29.2	9.0
1991	439.2	407.1	846.3	224.4	89.8	314.1	1.2	28.4	9.0
2001	532.2	496.5	1028.6	275.5	127.0	402.5	13.0	42.9	22.4
2011	623.7	586.5	1210.2	331.9	149.9	481.7	17.7	40.4	24.8

**Note:** 1. Rural and urban combined.

**Source:** Census of India.

In the context of economic reforms and a subsequent high rate of economic growth in the country, during 1990s and 2000s, one would have a reason to expect a high growth in workforce too in this period. But one has to note that there are two constraints in the growth of workforce. One is the growth of population, wherein at a given labour/ workforce participation rate (a constant), labourforce or workforce cannot grow more than the rate at which population grow. The other constraint is the labourforce participation rate itself. Given the rate of growth in population, the rate of growth in labourforce depends on the change in the participation rate.

On the one hand, as it is evident from the recent trend, rate of growth in population in India is fast decelerating (see Table 1). Therefore, a large part of the deceleration in rate of growth in workforce must be due to deceleration in population growth. On the other hand, in the context of increasing demand for education, a considerable

proportion of younger age population is either withdrawing from labourforce or postpone their entry into labourforce in order to attend educational institution and pursuing higher studies. Research studies based on NSSO data, have already expounded on this fact (Chaudhary, 2011; Kannan and Ravidran, 2012). Such an increase in demand for education increases the human capital base of the country and hence it is considered as a welcome feature (Planning Commission, 2011). Therefore, given the above mentioned fact, the scope for increase in labourforce participation rate appears to be limited unless if the participate rate increase among the adults (25 year and above) and old age (60 + age) population<sup>1</sup>. But, unlike the NSSO estimations, the Census data is showing no decline in the work participation rate (see Table 4). There seems to be increasing participation of adults and old age to replace the decline in younger ages.

**Table 2: Growth of Population and Workforce – All India**

Category	Person			Male			Female		
	1981-91	1991-01	2001-11	1981-91	1991-01	2001-11	1981-91	1991-01	2001-11
Total Population	2.1	2.0	1.6	2.2	1.9	1.6	2.1	2.0	1.7
Total Workers	2.5	2.5	1.8	2.2	2.1	1.9	3.5	3.5	1.7
Main workers	2.5	0.9	1.5	2.2	0.8	1.3	3.6	1.2	2.1
Marginal workers	2.5	12.3	2.8	-2.6	29.5	5.1	3.2	7.9	1.1

**Note:** 1. Rural and urban combined; 2. Compound Annual Growth Rate (CAGR) in %.

**Source:** Census of India.

Having said, the gender-wise analysis of Census data shows that the rate of growth in female workforce and in their population are almost the same rate between 2001 and 2011 (see Table 2). The rate of growth in female workforce during 1980s and 1990s was 1.75 times higher than of its population. Such a relatively high growth of female workforce over their population was possible with increasing WPR between 1981 and 2001 (see Table 3). In case of males, there has not been much difference in

<sup>1</sup> It is possible if those adults who otherwise have not been participated in the labourforce and are incentivized to participate. Here, there is a little scope for increasing participation rate among the adult males wherein it is already saturated. But there is a possibility among adult females whose participation rate is considerably low. Nevertheless their labour market participation depends upon their time spent for household chores and child care, and also the cultural factors particularly in India. Besides, the demand for their labour in the labour market especially in the context of poor educational levels among women plays critical role in labour force participation rate of females.

rate of growth between population and workforce particularly during 1980s. But in 1990s and 2000s the rate of growth in male workforce is marginally higher than that of its population. In both the cases of males and females, the rate of growth in their population and workforce is decelerating over a period. However, the deceleration was faster among the female workforce. Thus, a significant part of the deceleration in overall workforce could be because of faster deceleration in the female workforce.

### ***Fast growing Marginal Workers Category***

Census classifies workers into two categories i.e. main and marginal workers. The main workers are those who worked for more than six months in a year and the marginal workers are those who worked for less than six months. The analysis of Census data shows that during the last two decades (1991-2011) the rate of growth in marginal workers is higher than that of main workers (see Table 2). The rate of growth in main workers had decelerated during 1990s when compared with previous decade (1980s), whereas among marginal workers it accelerated during the same period. However, it appears that there is revival of growth in main workers during 2000s but the rate of growth is still less than that of 1980s. On the other hand there is a deceleration in the rate of growth in marginal workers between 2001 and 2011 but the rate is still higher than that of 1980s and higher than that of main workers. The analysis shows that marginal workers growing faster than main workers. *Marginal workers have grown to account for one-fourth of the total workforce in India in 2011* (see Table 1).

The gender-wise analysis of main and marginal workers has shown that the above pattern is observed particularly for males. In case of females the pattern is little different. The rate of growth in female marginal workers increased during 1990s when compared to that of 1980s. Thereafter it decelerated drastically, during 2001-11 to the rate that is less than that of 1980s. Although there is acceleration in growth of female main workers during 2001-11 it could not compensate the deceleration in female marginal workers during the same period and hence the deceleration in total workforce of the female. Between males and females, the rate of growth in female

marginal workers was higher than that of their male counterparts during 1980s. However, during 1990s and 2000s, the rate of growth in male marginal workers turns up to be higher than their female counterparts. In case of main workers the rate of growth in female workforce has been higher than that of male during the last three decades. The analysis indicates that on the one hand, the rate of growth in female marginal workers has decelerated fast and, on the other hand, it has accelerated for the male marginal workers. As a result the percentage of marginal workers in the total workforce has increased for males since 1991, but for female it increased during 1991-2001 and thereafter it declined between 2001 and 2011 (see Table 1). However, *the share of female marginal workers, accounting for about 40% of the total female workforce in 2011, is still considerably higher than that of their male counterparts.*

### ***Improved Main Workers' Sex Ratio***

Sex ratio of population is increasing since 1991 after a down fall between 1981 and 1991 (see Table 3). In the total workforce, the sex ratio has improved between 1981 and 2001, and declined thereafter in recent decade. The sex ratio among main workers has in fact, continuously been increasing, since 1981 (see Table 3). Thus, the decline in sex ratio in the total workforce is due to fast decline in sex ratio among the marginal workers. While the improved sex ratio in main workers reflects the accelerated rate of growth among female main workers and the decline in high concentration of among marginal workers reflects the deceleration in the growth of female marginal workers (see Table 2).

**Table 3: Sex Ratio in Population and Workforce – All India**

Year	Population	Total Workers	Main Workers	Marginal Workers
1981	933	351	253	5245
1991	927	400	290	9425
2001	933	461	303	1520
2011	940	452	327	1032

**Note:** 1. Rural and urban combined.

**Source:** Census of India.

### ***No Decline in Work Participation Rate (WPR)***

It is worth mentioning that unlike the NSSO's recent estimates, Census data shows a marginal increase in the WPR between 2001 and 2011. As the rate of growth in total workforce is higher than that of population, the WPR is increasing, though it is a marginal increase (see Table 4). This marginal rise in overall WPR is, in fact, entirely due to increase in marginal workers' WPR. Between main and marginal workers, the main workers' WPR had in fact shown a decline since 1991 whereas there is a corresponding increase in marginal workers' WPR during the same period. Thus, *there is an increase of marginal workers' share in the total workforce, particularly since 1991 (see Table 1).*

The work participation rate by gender shows that the males' overall WPR registered an increase in 2001 and 2011, whereas the females' overall WPR had increased in 1991 and 2001 but remained same in 2011. The male-female combined WPR had increased all throughout during the last three decades. For the males, their main worker's WPR has declined and their marginal workers' WPR has increased. For the females, their main workers' WPR does not show any patters; it has increased between 1981 and 1991, it declined between 1991 and 2001, and thereafter shown an increase between 2001 and 2011. The WPR of female marginal workers had increased between 1981 and 2001, and thereafter it has shown a marginal decline in 2011.

**Table 4: Work Participation Rate (WPR) – All India**

Year	WPR - Total			WPR - Main			WPR - Marginal		
	Male	Female	Persons	Male	Female	Persons	Male	Female	Persons
1981	51.1	19.2	35.7	50.1	13.6	32.5	1.0	5.6	3.2
1991	51.1	22.1	37.1	50.5	15.8	33.8	0.6	6.3	3.3
2001	51.8	25.6	39.1	45.0	14.6	30.4	6.7	11.0	8.8
2011	53.2	25.6	39.8	43.8	15.2	29.9	9.4	10.3	9.9

**Note:** 1. Rural and urban combined.

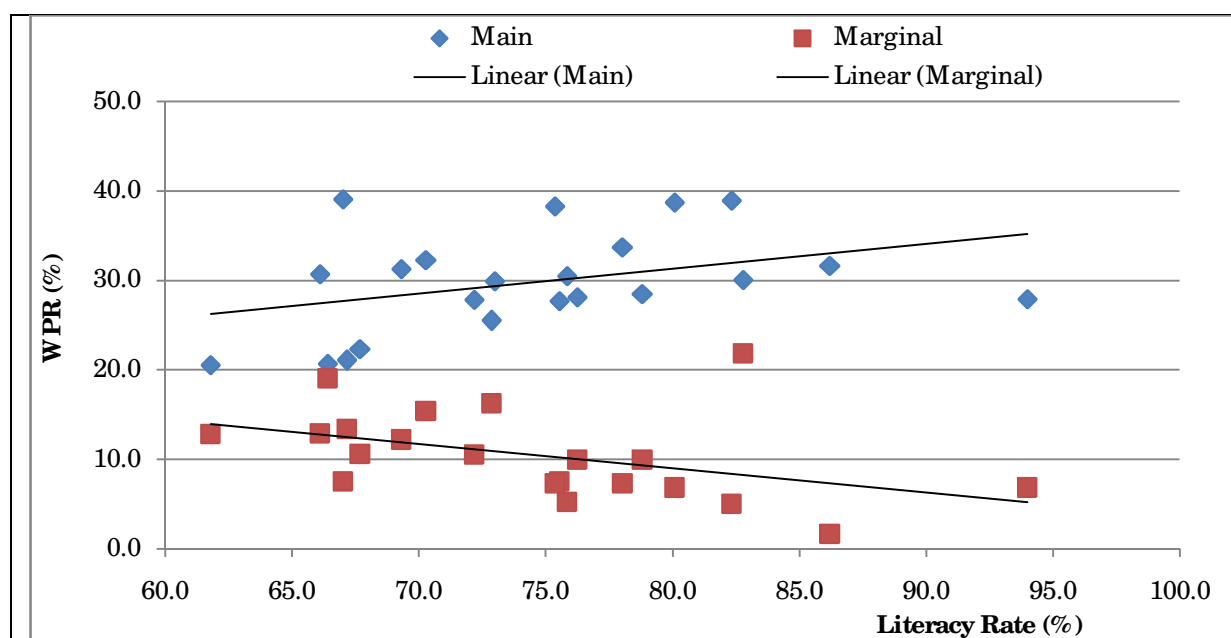
**Source:** Census of India.



### ***Literacy and WPR of Marginal Workers***

An analysis of relationship between literacy rate and WPR across 21 major states in India, for the year 2011, shows an interesting observation. While the WPR of marginal workers category is negatively correlated with literacy rate, the WPR of main workers is positively correlated - two different directions (Figure 1). By gender, correlation coefficient is positive and considerably high for the WPR of male main workers and male literacy rate (see Table 5). In case of WPR of males and females of marginal workers category and male and female literacy rate, the correlation coefficient is negative and considerably high for the cases of male and females.

**Figure 1: Scatter Plot - Literacy and WPR of Main and Marginal Workers, 2011**



**Note:** Rural and Urban Combined; Male and female combined.

**Source:** Author's Calculation based on Census 2011.

**Table 5: Correlation Coefficient between Literacy and WPR by Sex and Category of Workers across 21 Major States in India**

Category	Persons	Male	Female
Total Workers	0.016	0.378	-0.189
Main Workers	0.374	0.480	0.123
Marginal Workers	-0.429	-0.401	-0.426

**Note:** Rural and urban combined.

**Source:** Author's Calculation.

It indicates that, on the one hand, those states with higher literacy rate have a better WPR of main workers category than those of low literacy rates. On the other hand, states having low levels of literacy do have higher WPR of marginal worker category. It could be because of the fact that in the light of globalised and emerging knowledge-based economy and consequent floating kind of labour market, labour mobility has become indispensable. Such an economy is also increasing the demand for skilled labour. The traditional occupations of labour absorption in the village economy such as agriculture and household industry have shown a gradual deceleration in their absorption rate. Non-agriculture has become the residual sector for the absorption of growing labourforce. Many times, in fact, jobs are created in places – urban or Greenfields of rural location – that are away from places of the job seekers. Herein, literacy skills in understanding the information, plays a role in job search and migration. There is a disadvantage of being illiterate. Thus, illiterates might be more likely to be end up with working in occupations which could provide employment for a few months in a year at their place of residence or neighbouring locations.

To sum up, the rate of growth in total work force is decelerating fast during the last decade when compared previous two decades. Among male and female workers, the fast deceleration is observed among the female workers. Between main and marginal workers, the rate of growth is high in the case of marginal than the main workers during the last decade. The analysis also bring out that while men are moving from main to marginal worker status whereas in the case of female worker they are moving from marginal to main status. Finally, the analysis also brings out the inverse relationship between literacy and WPR of marginal worker category.

### **III Occupational Distribution**

#### ***A sharp decline in cultivators***

It is observed from the census data that the occupational distribution in the total workforce is still tilted towards agricultural activities – more than half of the workforce is concentrated in agriculture. However, a striking feature of the trend is

that there is a sharp decline in the size of self-cultivators and at the same there is a bulging agricultural labour category.

Strikingly, around 8.9 million farmers, during 2001 and 2011, moved away from self-cultivation in the total work force. The decline in main workers who involved in cultivation/ farming had begun since 1991. Around 7.5 million farmers of main workers category during 1991-2001 and another 7.4 million during 2001-11, together 14.9 million farmers of main workers category are moved away from farming during the last two decades (see Table 6). When there was a decline in main workers involved in self-cultivation during 1991-2001, around 10.4 million workers newly entered into farming as marginal workers during the same period. Therefore, there was a net addition of 2.9 million workers into farming activity during 1991-2001. Later, during 2001-11, along with farmers in the main workers category (7.4 million) farmers of marginal workers category (1.5 million) also moved away from farming activity. Thus, there is a total decline of 8.9 million farmers during 2001-11.

**Table 6: Workforce (Persons – in Millions) by Occupation – All India**

Year	Total				Main				Marginal			
	Cultiv	A L	HHI	Others	Cultiv	A L	HHI	Others	Cultiv	A L	HHI	Others
1981	102.8	64.4	8.6	68.8	92.5	55.5	7.7	66.8	10.3	8.9	0.9	2.0
1991	124.7	86.0	7.6	95.9	110.7	74.6	6.8	93.8	14.0	11.4	0.8	2.1
2001	127.6	107.4	16.4	151.0	103.2	63.4	12.2	133.4	24.4	44.0	4.2	17.7
2011	118.7	144.3	18.3	200.4	95.8	86.2	12.3	168.1	22.9	58.2	6.0	32.3

**Note:** 1. Rural and urban combined; 2. Cultiv – Cultivators; A L – Agricultural Labourers; HHI – Household Industry; Others – it includes Industry Sector other than HHI, and those involved in the Services Sector.

**Source:** Census of India.

For the decline in absolute number of cultivators observed during the last two census period, one may seek an explanation from the two established hypothesis. These hypotheses are valid if the farmers are moving away from agriculture and taking up non agricultural activities. Over a period of time in India, in fact, we are coming across the shift in agriculture work force from agricultural activity to non-agricultural activity (industry and service sector). The first hypothesis is about

agricultural-growth led shift and the second is residual sector hypothesis indicating distress led shift/ diversification (see Meller, 1976 and Vaidyanathan, 1986). Again, another alternative hypothesis emerged in the context of unprecedented episodes of farmers' suicides during the last two decades is the extinction of farming community itself (Sainath, 2013).

Besides, a few other factors which are of recent developments might have compelled them to shift from the agricultural activities to non-agriculture activities. Such as, first, increasing cost of cultivation and reducing profitability of farming acts as distress. Second, rapid urbanization and real estate boom is attracting the rural farmers to urban centers with higher wages. Third, in the name of rapid urbanization, real estate business and industrial development i.e. SEZ, the government and private entrepreneurs acquiring farm land and throwing farmers out of land and farming by paying a meagre compensation. All the above mentioned factors might have acted as a push factors.

***Farmers becoming agricultural labourers !***

In contrast to the above mentioned hypotheses, the workforce appears to be reshuffled within the agriculture – moving away from self-cultivation to agriculture labour. It is evident from the fact that there is more than compensating size increase (to decline in farmers) in the category of agricultural labourers. It is about 36.9 million net additions to the size of agriculture labourers during 2001-11 (see Table 6). When compared that the decline in workforce engaged in self-cultivation at 7.4 million, is very small. At this point one can say that on the one hand, most of those farmers who are moving away from farming are becoming agricultural labourers. On the other hand, although a part of the net addition to the total workforce is absorbed in agriculture, but the whole of that labourforce absorbed in agriculture is in turn entirely absorbed in agricultural labourers category.

The occupational distribution of main and marginal workers shows that in both the categories, particularly during 2001-11, the number of cultivators has declined and the number of agricultural labourers has increased. The net addition of agricultural

labourers, during 2001-11, in the main workers category is about 22.8 million and in the marginal category it is about 14.2 million (see Table 6).

By gender, men's shifting away from self-cultivation had begun since 1991 and continued in 2011. However, during 1991-2001 some of the women had taken up the cultivation activity. The entry of women into cultivation had replaced male workers who left cultivation and also made a net addition to this activity in this period. Notwithstanding, the women also began leaving farming activity during 2001-11. Therefore, there is a net decline in the total workforce engaged in cultivation during 2001-11. It is interesting to note that while the men among the main workers category were moving away from cultivation since 1991, at the same time men who were taking up cultivation in the marginal workers category has increased during the same period. Despite the increase in male cultivators of marginal workers category, as it could not compensate the decline in male cultivators of main workers category, total male engaged in cultivation has declined during 2001-11.

**Table 7: Growth (%) of Workforce by Occupation in India**

Year	Total				Main				Marginal			
	Cultiv	A L	HHI	Others	Cultiv	A L	HHI	Others	Cultiv	A L	HHI	Others
<b>Persons</b>												
1981-91	1.9	2.9	-1.3	3.4	1.8	3.0	-1.2	3.5	3.1	2.5	-1.3	0.3
1991-01	0.2	2.3	8.1	4.6	-0.7	-1.6	6.0	3.6	5.7	14.5	18.8	23.9
2001-11	-0.7	3.0	1.1	2.9	-0.7	3.1	0.1	2.3	-0.7	2.8	3.6	6.2
<b>Male</b>												
1981-91	1.3	2.7	-2.1	3.2	1.3	2.9	-2.1	3.3	-2.4	-3.1	-2.9	-2.4
1991-01	-0.4	2.0	6.0	4.0	-1.3	-1.2	5.1	3.2	21.8	34.1	26.7	32.8
2001-11	-0.4	3.7	1.6	2.4	-0.7	3.0	0.1	2.0	1.5	5.4	10.7	6.4
<b>Female</b>												
1981-91	4.0	3.2	0.4	4.3	4.1	3.2	0.9	4.7	3.8	3.2	-1.1	1.8
1991-01	1.7	2.5	10.7	7.9	1.3	-2.4	7.6	6.0	2.3	10.2	17.5	17.3
2001-11	-1.4	2.1	0.6	4.7	-1.0	3.3	0.2	4.2	-2.0	1.0	1.1	6.0

**Note:** 1. Rural and urban combined; 2. Compound Annual Growth Rate (CAGR); 3. Cultiv – Cultivators; A L – Agricultural Labourers; HHI – Household Industry; Others – it includes Industry Sector other than HHI, and those involved in the Services Sector.

**Source:** Census of India.

With respect to agricultural labour, in the main workers category when male and female workers are combined, its size had in fact declined during 1991-2001. But thereafter it increased between 2001 and 2011. In case of the marginal worker category the number of workers (male and female combined) engaged in agriculture labour has increased since 1991. The same pattern is observed for both the men and women of main workers category. But, in the marginal workers category, the number of agricultural labourers of male and females has increased since 1991. The rate of growth in agriculture labourers is significantly higher among the marginal workers category of males than the rate observed for male main workers category during 2001-11 (see Table 7). In case of female agricultural labourers, it had shown the other way round wherein the rate of growth in agriculture labourers of marginal workers category is lower than the rate observed in the main workers category.

**Table 8: Percentage Distribution of Workforce by Four-fold Occupation  
– All India**

Year	Total				Main				Marginal			
	Cult	AL	HHI	Others	Cult	AL	HHI	Others	Cult	AL	HHI	Others
<b>Persons</b>												
1981	42.0	26.3	3.5	28.1	41.6	24.9	3.5	30.0	46.7	40.3	3.9	9.1
1991	39.7	27.4	2.4	30.5	38.7	26.1	2.4	32.8	49.6	40.4	2.7	7.3
2001	31.7	26.7	4.1	37.5	33.1	20.3	3.9	42.7	27.0	48.8	4.7	19.5
2011	24.6	30.0	3.8	41.6	26.4	23.8	3.4	46.4	19.2	48.8	5.0	27.1
<b>Male</b>												
1981	43.7	19.8	3.2	33.3	43.7	19.6	3.2	33.6	41.5	33.6	2.9	22.1
1991	40.0	21.0	2.1	37.0	39.9	20.8	2.1	37.2	42.7	31.9	2.8	22.6
2001	31.3	20.8	3.0	44.8	32.6	17.1	3.1	47.2	23.2	45.5	2.3	29.1
2011	24.9	24.9	2.9	47.2	26.7	20.2	2.8	50.3	16.5	46.8	3.8	32.9
<b>Female</b>												
1981	37.4	44.8	4.4	13.3	33.2	46.2	4.6	16.0	47.7	41.6	4.1	6.6
1991	39.0	43.4	3.3	14.3	34.6	44.2	3.5	17.7	50.3	41.3	2.6	5.7
2001	32.5	39.4	6.4	21.7	34.7	30.8	6.5	28.0	29.6	50.9	6.2	13.3
2011	24.0	41.1	5.7	29.2	25.6	34.6	5.4	34.5	21.7	50.6	6.2	21.4

**Note:** 1. Rural and urban combined; 2. Cult – Cultivators; A L – Agricultural Labourers; HHI – Household Industry; Others – it includes Industry Sector other than HHI, and those involved in the Services Sector.

**Source:** Census of India.

***Labour force absorption in non-agriculture - increasing***

It is observed that during the 2001-11, about 79 million is the net addition to the total workforce. Of the total net addition to the workforce, during 2001-11, one-third of it is absorbed in the agriculture and the rest in the non-agriculture. Thus, a large part of the increasing labour force is getting absorbed in non-agriculture. Relatively higher growth of workforce engaged in non-agriculture when compared with the agriculture is observed during the last three decades (see Table 10). It indicates increasing absorption of labourforce in non-agriculture sector for the last three decades. The rate of growth in the total workforce engaged in non-agricultural activities is distinctively high and different from that of agriculture, particularly during 1991-2001 (see Table 10). Nevertheless, this high growth rate in non-agriculture has decelerated, during the recent decade (2001-11), to around half-of the rate that recorded in the previous decade (1991-2001). As a result the considerable change in the structure of workforce towards non-agriculture observed in 1990s is reduced in 2000s (see Table 9). This is in contrast to the growth of GDP in India in its non-agriculture sector that had registered its highest ever during 2001-11.

**Table 9: Percentage of Non-Agriculture in the Total Workforce – All India**

Year	Total			Main			Marginal		
	Male	Female	Persons	Male	Female	Persons	Male	Female	Persons
1981	36.5	17.7	31.6	36.7	20.6	33.5	24.9	10.7	13.0
1991	39.1	17.6	32.9	39.3	21.2	35.2	25.4	8.4	10.0
2001	47.8	28.1	41.6	50.3	34.5	46.6	31.3	19.5	24.2
2011	50.1	34.9	45.4	53.0	39.8	49.8	36.7	27.6	32.1

**Note:** Rural and Urban Combined.

**Source:** Census of India

The grand theory of development says that the growth of industry will absorb the surplus labour in agriculture to the extent that the wage differential between agriculture and industry diminishes to zero (Lewis, 1954). Given a significant and distinctively high growth of non-agriculture GDP in India, particularly during the last decade, one would have a reason to expect a further high growth of workforce too in the non-agriculture sector than the rate observed. The reality is in contrast to

the expectation. It indicates a glitch in the structural change of workforce. It could be because of growing base of the capital-intensity in the non-agriculture sector reducing rate of labourforce absorption. Given the low levels of education and skill of workforce in India, there prevails a shortage in supply of skilled labourforce that industry demands. The recent report of Mckinsey on education and employment points out a conundrum – i.e. there are people who can't find jobs and there are employers who can't find people with the necessary entry-level skills (see McKinsey, 2013). Therefore, the industry prefers the capital-intensive technology that replaces the human labour requirement. The growth of otherwise labour-intensive industry must be very low and decelerating, as it is observed in India. On the other hand, if the labour-intensive agriculture had relieved the surplus labour (whose marginal productivity of labour was zero) over time and it is reached a stage where it cannot afford further migration of labour - out of agriculture to non-agriculture. The emerging phenomenon of 'labour shortage' in agriculture and the growing agricultural wages rate in the recent past might be the indications.

### ***Growing Female workforce in Non-agriculture***

Interestingly, the rate of growth among the female workers engaged in non-agriculture is found to be higher than their male counterparts. It is so especially in the case of female main workers in non-agriculture. So what does it indicates, is it non-agriculture is becoming gender sensitive in female labor absorption? It might be true otherwise, but, if one observes the pattern of workforce engaged in non-agriculture sector, most of it is moving towards unorganized and informal sectors particularly the labour-intensive businesses (Unni and Rani, 2008). Given the gender based wage differentials prevailing (see Das, 2012) particularly in unorganised and informal sectors of developing countries such as India, the availability of female labour at cheaper wage rates might be the inducing factor for the preference of women workers over men. It may raise the concern over the quality of the females' employment in non-agriculture. Moreover, it is also evident from the Census data that the growth of females in marginal workers category engaged in non-agriculture is higher than that of the main workers. As a result the share of marginal workers in



the total female workforce engaged in non-agriculture is increasing over time. In 2011, around one-third of the total female workforce engaged in non-agriculture is in the category of marginal workers.

**Table 10: Growth of Workforce engaged in Agriculture and Non-agriculture in India**

Year	Agriculture			Non-Agriculture		
	Male	Female	Persons	Male	Female	Persons
<b>Main and Marginal</b>						
1981-91	1.7	3.5	2.3	2.9	3.4	2.9
1991-01	0.5	2.1	1.1	4.2	8.5	4.9
2001-11	1.4	0.7	1.1	2.4	3.9	2.7
<b>Main</b>						
1981-91	1.8	3.6	2.3	2.9	3.9	3.1
1991-01	-1.2	-0.6	-1.1	3.3	6.3	3.8
2001-11	0.7	1.2	0.9	1.9	3.6	2.2
<b>Marginal</b>						
1981-91	-2.7	3.5	2.8	-2.5	0.7	-0.1
1991-01	28.4	6.5	10.4	32.2	17.4	22.7
2001-11	4.2	0.0	1.7	6.7	4.6	5.8

**Note:** 1. Rural and Urban combined.

**Source:** Census of India.

A relatively high growth of workforce in non-agriculture resulted in increase in the share of non-agriculture in the total workforce. It increased from 31.6 per cent in 1981 to 41.6 percent in 2001 and further it increased to 45.4 percent in 2011 (see Table 9). The sharpest increase (9 percentage point), in the share of non-agriculture, that coincides with high growth for workforce engaged in non-agriculture is observed during 1991-2001. By the status of workers, a sharp increase in the share of non-agriculture, during the last three decade, is observed for marginal workers and by gender, such a sharp increase is observed for the female workers (Table 9). But the interaction of status of worker and gender shows that such a sharp increase is witnessed among the females of main workers category. For the female workers, sharpest increase in the share of non-agriculture is registered during 1991-2001. Particularly among the female workforce of marginal workers category that engaged

in non-agriculture, the sharpest increase in the share of agriculture is observed during the last decade (2001-2011).

### ***Increasing Marginal category in the Non-agricultural Workforce***

It is also observed that the share of marginal workers in the total workforce engaged in the non-agriculture is increasing since 1990s (see Table 11). It interesting to note that the increase in the share of marginal workers is even observed for total male workers engaged agriculture. Among the non-agriculture workers, increasing share of marginal category is observed for both the male and females.

**Table 11: Marginal as a % of Total Workers by Occupation in India**

Year	Agriculture			Non-agriculture		
	Cultivators	A L	Both	HHI	Others	Both
<b>Persons</b>						
1981	10.0	13.8	11.5	10.0	2.9	3.7
1991	11.2	13.3	12.0	9.9	2.2	2.7
2001	19.1	41.0	29.1	25.6	11.7	13.1
2011	19.3	40.3	30.8	32.7	16.1	17.5
<b>Males</b>						
1981	1.9	3.3	2.3	1.8	1.3	1.3
1991	1.3	1.8	1.5	1.6	0.7	0.8
2001	9.6	28.4	17.1	9.8	8.4	8.5
2011	11.7	33.2	22.5	22.9	12.3	12.9
<b>Female</b>						
1981	37.2	27.1	31.7	26.8	14.5	17.6
1991	36.6	27.0	31.6	23.1	11.4	13.6
2001	39.0	55.4	48.0	42.0	26.2	29.8
2011	36.6	49.8	44.9	44.0	29.7	32.0

**Note:** 1. Rural and urban combined.

**Source:** Census of India.

### ***Diminishing rate of Absorption of Labourforce in HHI***

Herein it is important to point out the growth of workforce in household industry. It is an important source of livelihood for a considerable large proportion of workforce. Around 6% of female workforce and 3% of male workforce, together 4% of total workforce in India, in 2011, is engaged in household industry (see Table 8). The

analysis of Census data shows that growth of workforce in household industry is fast decelerating during the last decade (2001-11). It has registered a rate of growth 1.1% per annum during 2001-11 (see Table 6). In fact, there was a decline in the workforce engaged in household industry during 1981-91. Thereafter, during 1991-2001, workforce in the HHI registered a significantly higher growth. But it could not sustain such as growth and began decelerating during 2001-11.

Within the non-agriculture sector, the workforce engaged in household industry accounts for 8.4% of the total workforce engaged in non-agriculture in 2011. Its share has in fact declined from 11% in 1981 (see Table 12). Still, for the 6% of male and 16% female workers (main and marginal combined) engaged in non-agriculture in 2011, household industry is the source of employment. Among marginal workers engaged in non-agriculture especially that of women, more than one-fifth is involved in HHI in 2011. However, a sharp decline is registered for female workers (main and marginal) wherein the share of HHI in their total workforce declined from 25% to 16.4% between 1981 and 2011. Particularly, among the female marginal workers, the decline is even sharper, from 38% to 22.5%, during the same period.

**Table 12: Household Industry (HHI) as % of Workforce in the Non-agriculture**

Year	Main and Marginal			Main			Marginal		
	Male	Female	Persons	Male	Female	Persons	Male	Female	Persons
1981	8.7	25.1	11.1	8.7	22.3	10.4	11.6	38.1	30.0
1991	5.3	18.6	7.3	5.2	16.5	6.8	11.1	31.6	26.6
2001	6.3	22.7	9.8	6.2	18.7	8.4	7.2	31.9	19.2
2011	5.9	16.4	8.4	5.2	13.5	6.8	10.4	22.5	15.7

**Note:** 1. Rural and urban combined.

**Source:** Census of India.

In summary, the above analysis of changes in occupational distribution of workforce shows that there is a sharp decline in the size of self-cultivators but a large part of decline in this occupation replaced with sharp rise in the size of agriculture labour. It indicates a sign of cultivators leaving farming activity and becoming the casual labourers working in agriculture itself. With respect to workforce engaged in the

non-agriculture sector, it has registered relatively higher rate of growth over agriculture. However, more than half of the workforce is still dependent on agriculture. Moreover, rate of growth in workforce engaged in non-agriculture is found to be fast decelerating, particularly during 2001-11. Again, increasing share of marginal workers category in the total workforce engaged in non-agriculture and relatively high growth among such marginal workers is a cause of concern. As regards the household industry there is a diminishing rate of absorption of workforce in this occupation.

#### **IV Gender Distribution**

In fact, we have flagged enough points with respect to females in above analysis. Still there is space for discussion of gender implications out of recent changes in growth and changing structure of workforce in India.

Although females share a half of the total population, only one-quarter of the main status workers are female but little more than half of the marginal status workers are females. Female's share in the population has shown a marginal increase since 1991 continued the increase till 2011. Females' representation in the main workers has increased during 2001-11, but their representation has declined among the marginal workers (see Table 13). Their share in the in the total workforce increased between 1981 and 2001 and thereafter it has shown a marginal decline. But their share in main workers increased throughout during the last three decades - between 1981 and 2011. The decline in their share in total workforce is entirely to due to decline of their share in the marginal workers which has shown a fast decline since 1991.

In the traditional occupations such as agriculture (incl. self-cultivation and labour) and household industry, female's representation is declining (see Table 13). Among the three occupations: cultivators, agricultural labourers and HHI, the female's share had increased between 1981 and 2001 thereafter it declined between 2001 and 2011. In the in modern occupation their representation is getting increased. In the workforce engaged in 'others' occupation, which include non-household industry

and services, the share of female has increased between 1981 and 2011. However, little over one-fifth of the total workforce and little less than one-fifth of main workers engaged in the industry and services sectors, is found to be females. But, their representation accounts for around two-fifths of marginal workers engaged in this occupation.

**Table 13: Percentage of Female in the Total Population and Workforce in India**

Details	1981	1991	2001	2011
Population	48.3	48.1	48.3	48.5
Total Workers	26.0	28.6	31.6	31.1
Main Workers	20.2	22.5	23.2	24.6
Marginal Workers	84.0	90.4	60.3	50.8
<b>Main and Marginal</b>				
Cultivators	23.1	28.1	32.4	30.3
Agricultural Labour	44.2	45.3	46.6	42.7
HHI	32.9	38.7	49.3	46.7
Others	12.3	13.4	18.3	21.8
<b>Agriculture</b>	<b>31.3</b>	<b>35.1</b>	<b>38.9</b>	<b>37.1</b>
<b>Non-agriculture</b>	<b>14.5</b>	<b>15.2</b>	<b>21.3</b>	<b>23.9</b>
<b>Main Workers</b>				
Cultivators	16.1	20.1	24.4	23.8
Agricultural Labour	37.4	38.1	35.2	35.9
HHI	26.8	33.1	38.5	38.9
Others	10.8	12.1	15.2	18.3
<b>Agriculture</b>	<b>24.1</b>	<b>27.3</b>	<b>28.5</b>	<b>29.5</b>
<b>Non-agriculture</b>	<b>12.4</b>	<b>13.5</b>	<b>17.2</b>	<b>19.7</b>
<b>Marginal Workers</b>				
Cultivators	85.8	91.7	65.9	57.6
Agricultural Labour	86.7	92.4	63.0	52.7
HHI	88.1	89.9	80.7	62.8
Others	61.1	70.5	41.0	40.2
<b>Agriculture</b>	<b>86.2</b>	<b>92.0</b>	<b>64.0</b>	<b>54.1</b>
<b>Non-agriculture</b>	<b>69.2</b>	<b>75.7</b>	<b>48.6</b>	<b>43.7</b>

**Note:** 1. Rural and urban combined.

**Source:** Census of India.

On the whole, female's representation in main workers has increased over time and the concentration of females in the total marginal workers is getting reduced

especially since 1991. Their representation in workforce engaged in the agriculture occupation has declined during 2001-11 and a corresponding increase in the non-agriculture occupation. To sum up, although there is a continuing tendency of under representation of women in the workforce, their share is increasing over time, though at a marginal rate. The increasing representation of women in the workforce particularly that of the workforce engaged in non-agriculture.

## **V Concluding Observations**

The above analysis of Census data brings new dimension to ongoing debate on the decline in the growth of employment from the last two decade. The census 2011 result gives better picture when compared with NSSO estimation of work force participation and change in the pattern of work force. The paper has found that there is fast decelerating rate of growth in workforce particularly that of females, between 2001 and 2011. But the work participation rate has not declined, if not increased. Secondly, incremental workforce especially the male is getting reduced to marginal status workers whereas the incremental female workers are gradually getting leveled up to main status workers. Still, one third of the female workforce is working as a marginal worker.

Occupational distribution of workforce shows that labour absorption in self-cultivation is saturated and declining. But the increase in the size of agricultural labourers is more than the size decline in cultivators indicating farmers those who are leaving farming activity and those who enter newly in to agriculture are becoming agricultural labourers. The decelerating but a high rate of growth in workforce engaged non-agriculture compared to that of agriculture could not bring any drastic change in the structure of workforce – a small change in workforce shifting towards non-agriculture. This is contrast with the highest ever growth of non-agricultural GDP of India that is registered during the last decade. Within the non-agriculture, growth of workforce engaged in household industry is decelerating. Moreover, the rate of growth in marginal workers engaged in non-agricultural

activities is found to be higher than those of main workers increasing share of marginal workers in the total workforce of non-agriculture sectors is a cause of concern. Moreover, relatively high growth of female workforce engaged in non-agriculture appears to be a welcome feature but one needs to be prudent in interpreting it so, especially in the context of increasing informalisation of labour market.

\* \* \*

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## Appendix

**Table A1: Size of Main and Marginal Workers (in Millions) in India**

Year	Main Workers			Marginal Workers		
	Male	Female	Persons	Male	Female	Persons
1981	177.5	45.0	222.5	3.5	18.6	22.1
1991	221.7	64.3	285.9	2.7	25.5	28.2
2001	239.6	72.6	312.2	35.8	54.5	90.3
2011	273.1	89.3	362.4	58.7	60.6	119.3

**Note:** 1. Rural and urban combined.

**Source:** Census of India.

**Table A2: Workforce by Occupation – All India (in Millions)**

Year	Main & Marginal				Main				Marginal			
	Cultiv	A L	HHI	Others	Cultiv	A L	HHI	Others	Cultiv	A L	HHI	Others
<b>Persons</b>												
1981	102.8	64.4	8.6	68.8	92.5	55.5	7.7	66.8	10.3	8.9	0.9	2.0
1991	124.7	86.0	7.6	95.9	110.7	74.6	6.8	93.8	14.0	11.4	0.8	2.1
2001	127.6	107.4	16.4	151.0	103.2	63.4	12.2	133.4	24.4	44.0	4.2	17.7
2011	118.7	144.3	18.3	200.4	95.8	86.2	12.3	168.1	22.9	58.2	6.0	32.3
<b>Males</b>												
1981	79.1	35.9	5.7	60.4	77.6	34.7	5.6	59.6	1.5	1.2	0.1	0.8
1991	89.6	47.0	4.6	83.1	88.5	46.2	4.6	82.5	1.2	0.9	0.1	0.6
2001	86.3	57.4	8.3	123.5	78.0	41.1	7.5	113.1	8.3	16.3	0.8	10.4
2011	82.7	82.7	9.8	156.6	73.0	55.3	7.5	137.3	9.7	27.5	2.2	19.3
<b>Females</b>												
1981	23.8	28.5	2.8	8.4	14.9	20.8	2.1	7.2	8.8	7.7	0.8	1.2
1991	35.0	39.0	2.9	12.8	22.2	28.4	2.2	11.4	12.8	10.5	0.7	1.5
2001	41.3	50.1	8.1	27.6	25.2	22.3	4.7	20.3	16.1	27.8	3.4	7.2
2011	36.0	61.6	8.6	43.7	22.8	30.9	4.8	30.8	13.2	30.7	3.8	13.0

**Note:** 1. Rural and urban combined; 2. Cultiv – Cultivators; A L – Agricultural Labourers; HHI – Household Industry; Others – it includes Industry Sector other than HHI, and those involved in the Services Sector.

**Source:** Census of India.



**Table A3: Workforce engaged in Agriculture and Non-agriculture – All India  
(in Millions)**

Year	Total		Main		Marginal		% of Agriculture		
	Agri	Non-Agri	Agri	Non-Agri	Agri	Non-Agri	TW	Main	Marginal
<b>Persons</b>									
1981	167.2	77.4	148.0	74.5	19.2	2.9	68.4	66.5	87.0
1991	210.7	103.5	185.3	100.6	25.4	2.8	67.1	64.8	90.0
2001	235.1	167.4	166.6	145.6	68.5	21.9	58.4	53.4	75.8
2011	263.0	218.7	182.0	180.4	81.0	38.3	54.6	50.2	67.9
<b>Male</b>									
1981	115.0	66.1	112.3	65.2	2.7	0.9	63.5	63.3	75.1
1991	136.7	87.7	134.6	87.0	2.0	0.7	60.9	60.7	74.6
2001	143.7	131.8	119.1	120.6	24.6	11.2	52.2	49.7	68.7
2011	165.4	166.4	128.3	144.9	37.2	21.5	49.9	47.0	63.3
<b>Female</b>									
1981	52.3	11.3	35.7	9.3	16.6	2.0	82.3	79.4	89.3
1991	74.0	15.8	50.7	13.6	23.4	2.1	82.4	78.8	91.6
2001	91.4	35.7	47.5	25.0	43.9	10.6	71.9	65.5	80.5
2011	97.6	52.3	53.7	35.6	43.8	16.7	65.1	60.2	72.4

**Note:** 1. Rural and Urban combined.

**Source:** Census of India.