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INDIA: DISTRESS DRIVEN?**

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ABSTRACT

Abstract: The 61st round of NSS shows that there is a turnaround in employment growth in rural India after a phase of 'jobless growth'. Paradoxically, this employment growth occurred during a period of wide spread distress in agriculture sector that include low productivity, price instability and stagnation leading to indebtedness. Under the typical neoclassical tradition, this trend would have predicted further contraction of employment in the rural economy. However, further probing reveals that employment growth in the rural areas is probably a response to the crisis that is gripping the agriculture sector. Under conditions of distress, when income levels fall below sustenance then that part of the normally non-working population are forced to enter the labour market to supplement the household income. The decline of agricultural sector has also probably created forced sectoral and regional mobility of the normally working population with the normally non-working population complementing them.

Key Words: Rural Employment, Gender, Rural Wages, Labour Participation, Poverty, Agrarian Distress

JEL Classification: J21, J43, J31

Introduction

The rural employment in the Indian economy had grown at a robust rate during the period 1999-00 to 2004-05. Sundaram (2007) estimated the rural UPSS employment growth rate between 1999-2000 and 2004-05 to be 2.34 percent. Unni and Reveendran (2007) estimated the UPS based rural employment growth rates to be 2.67 percent. This rise in employment growth is being lauded since it had occurred after a period of jobless growth, during 1993-94 to 99-00. However, the intriguing fact remains that such an impressive employment growth occurred during the phase of an almost complete stagnation of output growth in the agriculture sector, the mainstay of rural economy. The agriculture sector is passing through a complex crisis of low productivity, poor competitiveness and adverse climatic conditions. The compound annual growth rate of agriculture and the allied sector during 2000-01 to 2004-05 was 2.02 percent, the lowest annual growth recorded in the sector since 1980-81(Mathur, Das and Sircar, 2006). Chand, Raju and Pandey (2007) also show this decline in agriculture, putting the dates slightly earlier, starting from 1997-98. They also show the widespread decline in the sector, covering all sub sectors.

How does employment growth pick up when output growth is stagnant? Under normal circumstances, this trend would have further reduced the employment in the rural economy. However, further probing reveals that the growth in rural employment growth is probably a response to the crisis that is gripping the sector. Under conditions of distress, when income levels fall below sustenance then that part of the normally non-working population are forced to enter the labour market to

supplement the household income. In this paper, by analyzing the trends and patterns of rural employment, it is argued that it is probably the distress in the agrarian sector that has largely led to the growth of employment in rural India. In other words, it can be argued that the recent growth in rural employment is largely 'distress driven employment' or 'earnings capacity poor' driven employment.

After the introduction, Section 1 provides the analytical background for the paper. In Section 2 and 3 while analyzing the trends in rural employment, unemployment, and composition of workforce the elements of poverty driven employment are brought to the fore. The trends in wage rates and wage differentials, one of the central underlying factors for the increase in employment, are analyzed in Section 4. In Section 5 the analysis is further deepened by providing a cross sectional comparative picture of the labour market characteristics in the regions experiencing agrarian distress vis-à-vis regions without such distress, which clearly argues in favor of the 'distress driven employment' hypothesis.

I

The Analytical Background

The neoclassical framework of analyzing labour supply starts on the premise that labour supply decisions are entirely done by individual decision makers. The neoclassical theory presumed that individual decision makers maximize their satisfaction based on a division of time between leisure and work, which generates the typical backward bending labour supply curve (Robbins, 1930). However there is little truth in such an analytical structure when it comes to traditional agriculture based families living at subsistence levels. A choice between leisure and work based on ones earnings becomes pertinent only when an individual is trying to maximize his/her marginal utility and he/she is well above subsistence level. At subsistence level, when the earnings level decline

the individual may need to work more hours per day and more days per week to keep his income levels constant. In line with this argument Sharif (1991) put forward the hypothesis that unlike developed economies, the labour supply curve in less developed economies has two sections, - a forward section at lower wage rates and an upward rising section at high wage rates. At the upward rising section a reduction in wages would indicate a reduction in standard of living while in the lower end it would imply physical impoverishment. Hence a fall in wage in the lower end shows their attempt to maintain their minimum level of consumption, at which their labour supply elasticity is negative.

However some argue that individual decision making at subsistence income levels does not attempt to optimize the individual utility. Rather, members in households at subsistence level, try to acquire the basic subsistence income *for all members in the family*. Thus the labour supply of a household is a joint utility function of the household. When the earnings of the working members of the poor household do not meet the subsistence level of the family, the workers may increase their total time of work cutting down on leisure. Alternatively, if the main bread winners' (or primary workers) earnings are not sufficient to meet the subsistence needs of the household then non-workers (secondary workers) enter the labour market in search of employment, temporarily breaking down the intra-household division of labour. The secondary worker does not choose an employment in terms of work leisure choices, rather on the basis of earning the basic minimum average subsistence income for the family (Dessing, 2002). If the level of income rises and the primary earners' income would be sufficient for subsistence then the secondary workers may withdraw from the labour market. The secondary workers may not continue in the labour market due to existence of various socio-economic institutional rigidities such as gender bias and biological limits such as age¹. Thus, the normal non-participants enter the labour market to act

1 A review of literature by Dessing (2002) provides international evidences of such entry and exit of females in the labour market due to socio-economic factors.

as a buffer or a support for the household, when the wages earned by the income earners is not able to meet the minimum needs of the household any more. Evidences of such distress induced labour supply are available among the poorest in most developing economies². Dessing (2002) for instance, showed that the wage elasticity of labour supply among poor Filipinos were near zero for primary workers, while negative and large for secondary workers.

The secondary workers or the normally non-working population in developing economies mainly consist of women, the elderly and children. Empirical evidence suggests that the labour participation of these population segments in households surviving at subsistence level tend to be high when the earnings of their households are at subsistence levels. The U shaped curve of female labour participation rate as theorized and empirically tested (Mathur.A, 1994; Goldin ,1995; Mammen and Paxson, 2000) essentially puts forward that female labour participation rates are higher in traditional agricultural societies where they participate mostly as unpaid family labour. At higher levels of development and institutionalization of markets women tend to withdraw from the labour market due to socio-cultural factors. They again join the market at a mature stage of economic development, characterised by greater specialization and institutionalization of work previously considered to be household work and the simultaneous emergence of services sector. The Report on Ageing (WESS 2007) shows that in developed countries and in transition economies, labour participation rates are about 13-14 per cent for men aged above 65 and 6-8 per cent for women aged above 65. In contrast, for Africa and developing countries in Oceania, labour-force participation remains at relatively higher rates particularly for males over age 65. For example, among 37 African low-income countries, 36 have labour-force participation rates above 50 per cent for men aged 65

years or over. In 12 of these countries, the labour participation rates exceed 80 per cent. Studies also shows that the contribution of secondary workers in the poor households is a crucial addition to achieve the average household income required for subsistence. Lloyd-Sherlock (2004) in a study done on Brazil and South Africa estimated that the contribution of older people in poor families' income pool was crucial for subsistence.

The widespread stagnation in agriculture sector in India that set in during the late 1990s and which continues even now has adversely affected the earnings of the farm households, demand for labour and rural wage rates. The slow down in growth of wage rates, and farm incomes, has in turn probably, pushed a large number of these households already living at subsistence levels to even worse levels of poverty. The members of these households are then bound to increase their joint family labour supply at least to that level which will ensure the subsistence of all its members. In this case the participation of the normally non-working population, mainly women and older people, in the labour market may increase so as to supplement the earnings of the primary wage earners. Given the above analytical background this paper would examine the trends and patterns in rural labour market and explore the labour market response to agrarian distress in India.

II

Trends in Rural Employment and Unemployment

II.1 *The Resurgence of Employment Growth:* After the decline in labour force participation and work participation rates during 1993-94 to 1999-00, both these indicators recovered during the period 1999-00 to 2004-05 marking the resurgence of employment growth after a period of jobless growth. This was true in case of both males and females. The male labour force participation rates (LFPR) in the rural sector increased from 533 per thousand to 546 per thousand while for females it increased from 235 to 249. Similarly the male WPR increased

from 522 to 535 and for females it increased from 231 to 242 per thousand. Prima facie it looks encouraging that both male and female participation rates have increased. Yet the sudden spurt of female LFPR and WPR casts doubts on these encouraging trends. Since 1983, the highest recorded female LFPR was in the period 1987-88 at 254 per thousand. It is common knowledge that 1987-88 was a year of severe drought in the economy, when the female LFPR peaked. Since that peak the female LFPR had continuously declined to reach the lowest in 1999-00 at 235, thereafter it suddenly shot up to 249 per thousand in 2004-05, the highest since 1987-88 peak of female LFPR. Similarly, female WPR, which had a secular decline from 241 in 1983 to the lowest 231 in 1999-00, suddenly increased in 2004-05 to 242.

One cannot argue that this rise in female participation rates is due to the cracking up of the traditional patriarchal system in India. Institutional changes in traditional social systems do not occur in a short period, but they evolve over a long period of time. A more plausible reason seems to be the distress related feminization of work. It is the submission of this paper that the new peak in female LFPR in 2004-05 is a phenomenon similar to the 1987-88 surge in female LFPR that occurred due to the drought. From the trends in LFPR described above, it seems plausible to argue that women previously engaged in domestic work are joining the primary income earner, mainly as unpaid family worker in the agricultural farms, replacing hired labour, as the farm output declined to subsistence level³.

3 Nonetheless, this is not to discount the fact that employment growth among women had been occurring due to other factors as well. To give instance, Unni and Raveendran (2007) show that in the rural areas WPR had increased among females across educational levels in 2004-05 compared to the previous period 1999-2000. However, considering the fact the 1999-2000 had shown a general decline in WPR across all levels if we compare this current rise in WPR to that of 1993-94 then it can be seen that the rise in WPR had occurred mainly among females with intermediate education at primary, middle and secondary levels, suggesting low quality, low paid employment.

However, the male LFPR and WPR had also increased during the latest period, unlike the period 1983 to 1987-88 when it declined. This rise in male participation rates is also, as argued later, a sign of the distress related employment. The stagnation in rural agricultural wages, and low productivity has forced the male workers to search for employment in non-farm sector⁴, while otherwise non-working males such as aged dependents is joining the workforce for subsistence⁵.

Table 1: LFPR and WPR in Rural India (UPS)

	Labour Force Participation Rate		Work Participation Rate	
	Male	Female	Male	Female
1983	540	252	528	248
87-88	532	254	517	245
93-94	549	237	538	234
99-00	533	235	522	231
2004-05	546	249	535	242

Source: NSS Reports on *Employment and Unemployment Situation in India*

II.2 Inflow of Females into Labour Market: The addition to the female labour force and work force during the period 1999-00 to 2004-05 came as a result of a substantial share of women entering the labour market, leaving their prior status of being engaged in domestic duties only. The share of the population not in labour force has undergone some changes during this period. Mainly, the share of females that did

4 The largest rise in non-farm employment in rural areas among males was recorded during this period of 1999-2000 to 2004-05, an increase of 5 percent (see table 7 below)

5 Among all age groups the incremental change in LFPR for males was highest among the population aged more than 50 (see Table 3).

only domestic work recorded a large decline from 20.2 percent in 1999-00 to 17.5 percent in 2004-05. On the other hand, share of females doing other outdoor household duties along with domestic duties increased from 15.5 to 17.8 percent. Together, share of women in domestic duties recorded a decline from 35.7 to 35.3 percent.

This decline in the share of women engaged in domestic work had occurred during 1993-94 to 1999-00 as well. However, unlike the current period, this trend was mainly due to the fact that the students' share in the total dependent population increased considerably, which implied that girl children who were denied education earlier to attend domestic chores were finding more opportunities for education. Thanks to the increasing public attention on girl child education in the recent years⁶.

However, despite the rise in student share of the female population from 18.3 to 21.3 percent the labour force participation rate increased significantly during 1999-00 to 2004-05. This share of workers came in mainly from those engaged in domestic work and 'other' works. That the share of students did not decrease, and in fact increased, is understandable given that rural education is being strongly promoted through various public intervention schemes that provides cash-and-kind support, not only to the child but also to the family of the school attending child⁷, thus the child's school attendance acting as an insurance against distress.

6 Gender issues, though were addressed previously in a piecemeal fashion at least from the fifth plan period there has been a marked shift towards women's development. Various schemes such as Balika Samridhi Yojana (BSY) started in 1997; Kishori Shakti Yojana and the latest in the list, National Programme for Education of Girls at the Elementary Level, of the SSA launched in 2003 are part of this vision.

7 For instance the mid day meal scheme, which provide one meal a day for the school attending child, the BSY which provides a scholarship of Rs. 500 to girl children for attending schools etc.

Table 2 Distribution of UPS status rural population ‘not in labour Force’

	1987-88		1993-94		1999-00		2004-05	
	female	male	female	male	female	male	female	male
(A) Total labour force	25.4	53.2	23.7	54.9	23.5	53.3	24.9	54.6
(B) Not in labour force	74.6	46.8	76.3	45.1	76.5	46.7	75.1	45.4
i. students	9.4	17	15	23.2	18.3	24.9	21.3	26.9
ii. domestic work total	34.8	0.6	38.2	0.5	35.7	0.5	35.3	0.4
ii. a domestic duties only	19.5	0.3	18.8	0.3	20.2	0.3	17.5	0.2
ii. b domestic & other hh work	15.3	0.3	19.4	0.2	15.5	0.2	17.8	0.2
iii. others	30.4	29.2	23.1	21.4	22.5	21.3	18.5	18.1
Total (A) +(B)	100	100	100	100	100	100	100	100

Source: NSS Reports on *Employment and Unemployment Situation in India*

II.3 Increment in Aged Population in the Labour Market:

Another probable indicator of distress employment is the rise in WPR and LFPR among the older age cohorts, especially elderly age group of greater than 60. The LFPR among aged men had reached 684 per 1000 in 1993-94 and declined to 622 in 1999-00. But it increased to 631 in 2004-05 (Table 3). More interesting is the trends among aged women workers. The LFPR had gradually increased from 156 to 174 per 1000 between 1983 and 1999-00. The increase in aged women LFPR during the five year period 1999-00 to 04-05 from 174 to 199 is much higher than the increase that was experienced during the seventeen year period of 1983 to 1999-00. This rise in work participation of aged population in the rural economy is indicative of distress employment seeking in the wake of stagnation of earnings of the younger workers⁸ in the household and unavailability of productive employment.

During the period 1999-00 to 2004-05, interestingly, the younger age group, below the age 24 had withdrawn from the labour market in some measure, while the increment in the labour market was in the age groups above 35. The largest rise was seen in the age group 45 to 59. And here too, the increment in female LFPR in the older age group was substantially higher than increment in male LFPR. The gender difference in increment in WPR in the older age cohorts are even more distinct than that of LFPR. Similar to the LFPR trends, while workers in the younger age groups were withdrawing from employment, the older age group, especially above age 45 was taking up employment. This is in contradiction to the expectations of the demographic dividend argument (Bloom et al, 2007) owing to the presence of a relatively younger labour force in India. Clearly, the increment in labour force is from the older

8 See Abraham (2007); Srivastava and Singh (2006), Chavan and Bedamatta (2006), and Himanshu (2006) for the trends in wage growth in rural areas in recent years. Though using different data sources all of these studies argue that the growth of rural wage rates has slowed down or stagnated in the nineties. See Section IV of this paper for the trends in wage rates.

cohorts of the population than the younger, though the population structure has a larger share of younger members. The entry of the elderly to the labour force, apart from the distress due to wage decline and hence the decline in average income of the household discussed above, also reflects the lack of adequate pension and social security measures in developing countries. In India, as in other liberalizing economies that went for structural adjustment and fiscal consolidation the rising elderly labour participation could also be a fall out of the shrinking welfare expenditure (Sekhar, 2005)

Table 3: Changes in Rural LFPR and WPR during 1999-00 to 2004-05

Age Group	Change in LFPR during 1999-00 to 2004-05			Change in WPR during 1999-00 to 2004-05		
	male	female	Persons	male	female	Persons
5-9	-3	-4	-4	-3	-5	-4
10-14	-27	-23	-25	-28	-25	-26
15-19	-16	-6	-12	-22	-12	-18
20-24	-3	-13	-6	-3	-26	-13
25-29	8	5	8	14	-6	6
30-34	3	10	-1	3	2	-6
35-39	5	34	14	5	29	11
40-44	1	17	8	-2	13	5
45-49	2	36	24	0	33	21
50-54	11	39	25	9	37	23
55-59	6	45	28	5	43	26
60 & above	7	25	13	8	23	13
15 & above	2	16	8	1	9	4
all	13	14	14	13	11	11

Source: NSS Reports on *Employment and Unemployment Situation in India*

It is this surge in WPR, entirely in the older population, especially female population, during the period 1999-00 to 2004-05 that led to the rise in rural employment growth. Below given, in Table 4 are the employment growth rates calculated by Sundaram (2007) based on the UPSS measure and Unni and Raveendran (2007) based on UPS measure, both using census based projections. Both the papers showed a resurgence of the employment growth rate during 1999-00 to 2004-05. However, most of this resurgence in employment growth was accounted by growth in female employment. Both studies show that female employment growth rate was substantially higher than male employment growth rate during the period. The Sundaram Study recorded 3.36 percent female employment growth against male employment growth rate of 1.79 percent. The Unni study recorded female employment growth rate of 3.58 percent against male growth rate of 2.17 percent. These rates are also the highest in the period since 1983. The corresponding estimated increment of female workers from the Sundaram Study was 19 million workers, which was the same as that of male workers,. The Unni and Raveendran study also shows that the increment in the female workers was 20 million, almost close to the increment in male workers. Since 1983 this five year period saw the single largest increment in female workers, more than the rise in a ten year period 1983 to 1993-94.

II.4 Rising Underemployment: The trends in underemployment reflect the type of employment being newly generated in the rural economy. The forced rise of labour force participation in the rural economy has generated severe underemployment among the workers. Even when women and older men are joining the labour market the type of employment available to them are less productive and of poor quality. While open unemployment rates have remained at low levels, the degree of underemployment has shot up to one of the highest in the period since 1983. The open unemployment (UPS) for males was stable at 2.1 percent, and PS+SS unemployment rates even reduced by a fraction from 1.7 in the 55th round to 1.6 percent in 61st round (Table 5). But the measure

Table 4: Growth Rate and Increment in Workers in Rural India

		Annual Growth Rate (percent)			Increment in Workers (in millions)		
		1983 to 93-94	1993-94 to 99-00	1999-00 to 04-05	1983 to 93-94	1993-94 to 99-00	1999-00 to 04-05
Sundaram (2007) UPSS based	males	1.58	1.33	1.79	28	15	19
	females	1.09	0.51	3.36	11	3	19
	persons	1.41	1.04	2.34	39	18	37
Unni and Raveendran (2007) UPS based	males	1.91	0.78	2.17	34	9	22
	females	1.39	-0.11	3.58	14	-1	20
	persons	1.72	0.47	2.67	48	8	42

Source:Based on Sundaram (2007) and Unni & Raveendran (2007)

Table 5: Unemployment and Underemployment Rate in Rural India

NSS	Rural Male				Rural Female			
	PS	PS+SS	CWS	CDS	PS	PS+SS	CWS	CDS
38(Jan Dec'83)	2.1	1.4	3.7	7.5	1.4	0.7	4.3	9.0
43(July'87-June'88)	2.8	1.8	4.2	4.6	3.5	2.4	4.4	6.7
50(July'93-June'94)	2.0	1.4	3.1	5.6	1.3	0.9	2.9	5.6
55(July'99-June'00)	2.1	1.7	3.9	7.2	1.5	1.0	3.7	7.0
61(July'04-June'05)	2.1	1.6	3.8	8	3.1	1.8	4.2	8.7

Source: NSS REPORT NO 515 *Employment and Unemployment Situation in India*

of underemployment (CDS) had increased from 7.2 percent in 55th round to, the highest rate of underemployment recorded since 1983 for males at 8 percent in 2004-05 and for females at 8.7 percent during the same period. This is also the period that had experienced the largest increase in female labour supply, as mentioned above. The influx of female job seekers despite increasing open unemployment and underemployment brings out the dynamics of the labour market functioning in rural economies driven by acute distress.

III

Composition of Work Force

III.1 Declining Casualisation, Rising Self Employment: One of the sources of optimism, observed in the 61st NSS round in the labour market was the rise in self employment and decline in casualisation of the rural workforce. It is generally argued that self employment is a superior option of employment, due to lesser degree of vulnerabilities, compared to casual wage employment. The casualisation of workforce, which continued through out the late eighties and nineties seem to have been arrested, as reflected in the latest round of NSS. The share of self employed workers increased, both among male and female workers from 544 to 576 and from 500 to 564 per thousand respectively (Table 6). Correspondingly, share of casual workers declined from 366 per thousand to 333 and from 461 to 389 per thousand. However, the rise of self employment as an employment option during a period of severe duress needs to be studied more carefully. As shown later in the study, the present rise in Self employment is, to a large extent, of precarious nature.

III.2 The Residual Nature of Rural Non-farm Sector Employment: Analysis of the industrial composition of rural workers shows that the inertia among the rural male workers against inter-sectoral mobility seems to be gradually reducing. The total share of employment in the agriculture sector had declined from 77 percent of the workforce in 1983 to 66 percent in 2004-05 (Table 7). The largest decline was in

Table 6 : Workers by status of employment

NSS	Rural Male			Rural Female			Rural Total		
	Self-Employ	Regular	Casual	Self-Employ	Regular	Casual	Self-Employ	Regular	Casual
1983	595	106	299	541	37	422	581	80	339
1987-88	575	104	321	549	49	402	568	86	346
1993-94	567	87	346	513	34	453	552	72	376
1999-00	544	90	366	500	39	461	533	74	393
2004-05	576	91	333	564	48	389	574	77	349

Source: NSS REPORT NO 515 *Employment and Unemployment Situation in India*

the period 1999-00 to 2004-05, where a reduction of 5 percent point was recorded. Correspondingly the rural Non- farm sector (RNFS) employment share among males increased from 23 percent in 1983 to 34 percent in the latest period. This increase in RNFS employment was spread within the manufacturing sector, construction sector, Trade, Hotel and Restaurant, and Transport, Storage and Communication. Such a rise in RNFS employment is to be suspected for its quality. In the wake of declining productive employment opportunities and stagnating wages in the agricultural sector, as mentioned above, the sudden rise in RNFS employment in the period 1999-2000 to 2004-05 is probably a distress driven strategy of households to seek employment in other sectors. Such a shift in industrial composition, owing to agrarian distress would make the RNFS a residual low value adding, less productive sector. The trends broadly suggest that agrarian distress and the resultant reduction in productive employment, have forced male workers to find employment out of agriculture sector, while women, who are unpaid family members substitute men in their previous agricultural employment.

This is corroborated by the fact that there has been hardly any shift to RNFS in the case of female employment. The female dependence on agriculture sector declined, by just 5 percent points during the entire period, from 1983 to 2004-05. An overwhelming share of more than 81 percent still depended on agriculture as the main source of employment, while only 19 percent depended on RNFS employment. Whatever little shift in share had occurred, the mobility was mainly into manufacturing sector and other services.

III.3 Self Employment- the Last Resort Employment: Industrial classification of workers by worker status shows that the rise in self employment has been mainly in the primary sector. The share of self employed male workers in primary sector increased from 58 percent to 63 percent and that of female workers increased from 49 to 57 percent during 1999-00 to 2004-05 (Table 8). In accordance with the rise in the share of self-employment the share of casual workers declined in the sector as well.

Table 7: Industrial Composition of Rural Workers (UPS)

		(0)	(1)	(2&3)	(4)	(5)	(6)	(7)	(8)	RNFS
Rural Male	1983	77.2	0.6	7.1	0.2	2.3	4.4	1.7	6.2	22.8
	87-88	73.9	0.7	7.6	0.3	3.7	5.2	2.1	6.4	26.1
	93-94	73.7	0.7	7	0.3	3.3	5.5	2.2	7.1	26.3
	99-00	71.2	0.6	7.3	0.2	4.5	6.8	3.2	6.1	28.8
	04-.05	66.2	0.6	8	0.2	6.9	8.3	3.9	5.9	33.8
Rural Female	1983	86.2	0.4	6.5	0	0.9	2.2	0.1	3.4	13.8
	87-88	82.5	0.5	7.5	0	3.2	2.4	0.1	3.7	17.5
	93-94	84.7	0.5	7.5	0	1.1	2.2	0.1	4	15.3
	99-00	84.1	0.4	7.7	0	1.2	2.3	0.1	4.3	15.9
	04-.05	81.4	0.4	8.7	0	1.7	2.8	0.2	4.6	18.6

Source: NSS REPORT NO 515 *Employment and Unemployment Situation in India*

Note : Agriculture (0), Mining and Quarrying(1), Manufacturing(2&3), Electricity and Water (4) , Construction (5), Trade, Hotel and Restaurant(6), Transport, Storage and Communication (7) Other Services (8) , RNFS = Rural Non-Farm Sector.

Such a rise in self employment in the primary sector is of precarious nature. The rise in self employment in the rural sector has been mainly confined to the households with marginal land holdings with less than 0.4 hectares (Table 9). Share of self employed workers in agriculture increased by 34 per 1000, in smallest size landholding class, 0- 0.40, i.e. marginal land holders. Correspondingly the share of all other size classes in self employed agriculture declined by some measure, pointing towards the emergence of a group of self employed agriculturists with very small holdings. This is also the case with rural agricultural labour households, wherein the share of marginal land holders has increased. On the other hand, the trend almost reversed in the case of non-agricultural employment, wherein the share of marginal landholding households declined both in case of self and wage employment. The trends suggest that wage employment in the rural sector is not anymore remunerative for subsistence, evidence of which is given below. Hence, it is the poorest among the rural households, probably casual workers earlier, that now have turned into being self employed in their marginal land holdings. Thus viewed, the decline in casualisation and rise in self employment need to be interpreted cautiously.

Though casualisation had been declining in general, within the manufacturing sector casualisation had been increasing unabated since 1993-94 till 2004-05 from 45 percent to 50 percent. Correspondingly, the share of self employed and regular workers declined by varying levels. This rise in casual workers in the manufacturing sector meant that of all male casual workers in rural India nearly 24 percent was in the manufacturing sector. Another important aspect is that along with decline in casual employment among rural males in the tertiary sector is the decline in the share of regular employment, in place of which the share of self employment had increased from 55 percent to 58 percent. However, notably the share of regular workers among female workers increased to 44 percent in the tertiary sector. The nature of this regular employment of female workers in the tertiary sector needs to be explored in detail.

Table 8: Industrial Distribution of workers by Status (UPS) (in percent)

	NSS Round	Rural Male				Rural Female			
		Self-Employed	Regular	Casual	Total	Self-Employed	Regular	Casual	Total
Primary	38	63.2	4.3	32.6	100	54.7	1.2	44.1	100
	43	61.4	4.2	34.4	100	56.7	2.5	40.9	100
	50	60.4	1.8	37.9	100	50.8	0.5	48.7	100
	55	58.1	1.9	40.1	100	48.5	1.0	50.5	100
	61	63.1	1.4	35.5	100	56.6	0.5	42.9	100
Secondary	38	50.4	30.4	19.3	100	52.6	18.4	28.9	100
	43	48.1	29.0	22.9	100	51.3	17.9	30.8	100
	50	36.7	18.3	45.0	100	52.4	9.5	38.1	100
	55	36.4	18.2	45.5	100	63.6	9.1	27.3	100
	61	34.5	15.5	50.0	100	61.5	7.7	30.8	100
Tertiary	38	NA	NA	NA	NA	NA	NA	NA	NA
	43	NA	NA	NA	NA	NA	NA	NA	NA
	50	54.9	34.1	11.0	100	56.3	31.3	12.5	100
	55	52.4	34.5	13.1	100	50.0	37.5	12.5	100
	61	57.7	32.0	10.3	100	50.0	44.4	5.6	100

Note: For 38th and 43rd round the figures in secondary sector includes the tertiary sector as well.

Source: NSS reports on Employment and Unemployment Situation in India

Table 9: Change in per 1000 share of households at various land size class by employment type: 1999-00 to 2004-05

Size of holding (in hectares)	self employed			rural labour			others	all
	agriculture	non- agriculture	all	agricultural labour	other labour	all		
0-.40	34	-23	25	12	-12	11	63	1
0.41-1	-9	18	-3	-14	4	-12	-25	-2
1.01-2	-1	5	-3	2	4	2	-20	5
2.01-4	-7	-1	-7	-3	4	-1	-13	1
4.01& above	-18	0	-13	0	0	1	-5	-4

Source: NSS Reports on *Employment and Unemployment Situation in India*

IV

Wage Rates and Wage Differentials

IV.1 Stagnating Rural Wages: The direct fallout of the decline in agriculture yield and growth has been stagnation in the growth of rural wages. Whether it is casual or regular employment, between every round of NSS there has been a secular deceleration in growth of wage rates. For the regular workers the growth rates declined from 6.11 percent per annum during the period 1983 to 1993, to 4.69 percent during 1993 to 1999, and by 2004 the rate turned out to be 2.05 percent (Table 10). For the casual workers the rates had declined from 3.51 percent to 3.14 percent to 2.82 percent during the same periods. In both types of employment the greatest deceleration had been during the period 1999-00 to 2004-05. The rural male casual workers had experienced a marginal rise in growth of wage rates during the 1993-94, 1999-00, but experienced decline in the later period from 3.34 to 3.19 percent. The decline in growth of rural wages has come about probably due to the decline in demand for casual workers owing to farm yield diminution and the consequent entry of unpaid family workers as agricultural workers.

IV.2 Sustained Sectoral Wage Differentials: Though the growth of wage rates had stagnated, the inter-sectoral wage differential in the casual wage employment seems to be widening. The Non-farm wage rates which were 1.33 times higher than farm wage rates in 1983 had become 1.5 times more than farm wage rates by 2004-05 (Table 11). The growth rate of wages in the non-farm sector had been consistently higher than the farm sector. Though the overall growth of wages had declined continuously during the period the non-farm wage rates continued to be higher than the farm sector. This pattern of growth in wages has altered wage ratio of non-farm to farm sector such that the ratio had been continuously on the rise, when both males and females are taken together (Table 8). The wage differential among male causal

Table 10: Real Wages per day in Rural Sector-Levels and Growth (1983 prices)

	Regular			Casual		
	male	female	Persons	male	female	Persons
1983	15.33	10.44	14.63	7.79	4.89	6.77
1993	28.33	18.9	26.94	10.69	7.31	9.56
1999	36.98	24.88	34.99	13.02	8.39	11.51
2004	41.72	25.7	38.73	15.23	9.04	13.23
Compound Annual Growth Rate						
1983-1993	6.33	6.11	6.3	3.22	4.1	3.51
1993-1999	4.54	4.69	4.45	3.34	2.32	3.14
1999-2004	2.44	0.65	2.05	3.19	1.5	2.82
1993-2004	3.58	2.83	3.36	3.27	1.95	3

Source: Abraham, Vinoj (2007) as calculated from NSS unit level data, 38th, 50th, 55th and 61st round on CDROM published by Central Statistical Organization, Government of India.

workers had been stagnant during the entire period from 1983 to 2004-05, while that of females kept increasing gradually from 1.06 to 1.30. The stagnation in wage rates in the rural areas, declining employment opportunities in the agriculture sector and sustained wage differential between farm and non-farm sector together probably had pushed the Rural Non-farm sector employment as shown earlier.

Table 11: Non-Farm to Farm Sector Ratio of Wage Rates

	regular		total	casual		Total
	male	female		male	female	
1983	2.46	1.47	2.32	1.34	1.06	1.33
1993-94	2.49	2.05	2.45	1.34	1.14	1.37
1999-2000	2.04	2.08	2.10	1.38	1.23	1.47
2004-05	2.09	1.98	2.09	1.36	1.30	1.49

Source: Abraham, Vinoj (2007) as calculated from NSS unit level data, 38th, 50th, 55th and 61st round on CDROM published by Central Statistical Organisation, Government of India.

V

Agriculture Distress and Employment Characteristics

The above discussed characteristics of labour and employment during distress comes out clearly when a comparison is done between regions suffering from agriculture distress and normal regions. For such a comparison the unit level data of the National Sample Survey , 61st round for the year 2004-05 was utilized. The entire economy was divided into regions suffering from agricultural distress and other regions. The classification of regions into distressed and non- distressed regions was done at the district level. The ‘Expert Group on Agricultural Indebtedness’ formed under the behest of Ministry of Finance, Government of India;

and headed by Prof. R.Radhakrishna had identified 100 distress affected districts⁹ in the country¹⁰. Using this list the distressed districts were identified and the residual was taken to be not affected by agricultural distress.

V13 Subsistence level Per Capita Consumption Expenditure in Distressed Region: The fact that more than 60 percent of the workers in India's rural areas spend less than Rs. 600 per month per capita as consumption expenditure brings out the kind of subsistence survival that Indian rural workers are experiencing (Table 12). However, the severity of this poverty intensified much more in the agriculturally distressed region. The households classified according to their monthly per capita consumption expenditure (MPCE), which is a proxy for their level of income earnings, show that the distribution of workers is distinctively different between the two regions. In the distressed regions the share of workers who spend less than Rs 300 monthly were nearly 11 percent, while in non-distressed regions it was 7 percent. Moreover, the share of workers who had spend less than Rs 600 was nearly 70 percent of the workers in distressed region while in other regions it was nearly 58 percent.

9 The NSS data is collected at the region level and not amenable to district level comparison usually. However, changes in the sampling method of the 61st round NSS employment-unemployment round allows for arriving at district level estimates of employment and unemployment though the sample size still remains a problem. This study has taken all households that belonged to any of the 100 distressed districts were accounted as households in distressed regions. Such an aggregation avoids the sample size problem as well.

10 GoI (2007). The criteria for identifying the distressed and less developed region were as follows. "The list includes the 31 distressed districts identified by the Government where the Prime Minister's special rehabilitation package is being implemented. The remaining 69 districts have been included on the following criteria: (i) the district ranks low on the three-year average land productivity for 2001-02 to 2003-04, (ii) the credit-deposit ratio of the district is less than 60 per cent for 2006, (iii) the proportion of urban population in the district is less than 30 per cent in 2001" See page 17 ,

Table 12. Distribution of workers according to Household MPCE

Monthly Per capita Consumption Expenditure (Rs)	Non-distress region	Distressed region	Total
Less than 300	7.32	10.7	7.94
300 to 600	51.7	58.07	52.87
600 to 900	26.01	20.61	25.03
900 to 1200	8.54	6.05	8.08
Greater than 1200	6.43	4.56	6.09
Total	100	100	100

Source: Calculated from NSS unit level data 61st round on CDROM published by Central Statistical Organisation, Government of India.

Be it distressed region or non-distressed region share of female workers seemed to be negatively related with household consumption expenditure. Lower the level of MPCE higher the share of females in the total workers. For instance, in the non-distressed regions the share of females in the poorest class was nearly 36 percent while in the richest class the share of females was only 25.28 percent (Table 13). However, this relationship between poverty and female participation is stronger in the distressed regions. In the distressed regions the share of female workers increased to 42 percent, in the poorest class and declined to 30 percent in the richest class. Yet, there is no evidence of a greater progression in the female shares in distressed regions in comparison to the non-distressed regions. The difference in the share of females between distressed region and non-distressed regions remain consistently between 4 to 6 percent, suggesting that irrespective of the income class the crisis in agrarian sector has pushed females into the workforce.

Table 13. Gender Distribution of workers according to Household MPCE

Monthly Per capita Consumption Expenditure (Rs)	non-distressed region			distressed regions		
	Female	Male	Total	Female	Male	Total
Less than 300	35.86	64.14	100	42.21	57.79	100
300 to 600	31.37	68.63	100	37.89	62.11	100
600 to 900	28.69	71.31	100	34.9	65.1	100
900 to 1200	27.34	72.66	100	30.78	69.22	100
Greater than 1200	25.28	74.72	100	29.84	70.16	100
Total	30.26	69.74	100	36.94	63.06	100

Source: Calculated from NSS unit level data 61st round on CDROM published by Central Statistical Organisation, Government of India.

V.2 Greater Presence of Female Workers in Distressed Regions:

In the non-distressed region share of male workers in farm sector was 64 percent, but in the distressed regions the share was drastically lower at 56 percent (Table 14). Correspondingly, the share of women workers is higher at 45 percent in distressed regions compared to 36 percent in non-distressed regions. Even in the non-farm sector the share of males was slightly lower in distressed region, 76 percent, compared to 78 percent in non-distressed regions, while that of females increased from 22 percent to 24 percent. In total employment, the share of males declined from 70 percent to 63 percent, while the share of females increased from 30 percent to 37 percent, when one moves from non-distress region to distress region. This essentially suggests feminization of work in regions experiencing agricultural distress. The incidence of this feminization seems to be much higher in farm sector rather than non-farm sector. One probable reason is the distress related male migration to other regions.

Such distress induced male migration as a coping strategy under distress was observed in many micro studies. In Kerala's Wayanad district, which had witnessed one of the severest agrarian crises, male out migration was increasing rapidly, and nearly 40 percent of the out-migrants belonged to the poorest households in the region (Nair, Vinod and Menon, 2007, Nair and Menon, 2007). In Andhra Pradesh, Deshinkar and Start (2003) explains seasonal migration of the landless and marginal land holders as a coping strategy during droughts and famines.

Table 14. Distribution of workers in Distress and Non-distress regions by sex

	Non- distress region			Distress region		
	Farm	Non-farm	Total	Farm	Non-farm	Total
Male	64	78.31	69.74	55.5	75.77	63.06
Female	36	21.69	30.26	44.5	24.23	36.94
Total	100	100	100	100	100	100

Source: Calculated from NSS unit level data 61st round on CDROM published by Central Statistical Organisation, Government of India.

V.3 Unpaid Family Workers- Key Labour Market Participant in Distressed Region: The share of workers according to their status shows that nearly 39 percent of the total workers are self employed in non-distress region, while the share declines substantially to 33 percent in distressed region (Table 15). Correspondingly, the segment that shows the maximum increase is unpaid family worker. The share of unpaid family workers in distressed region is higher by 4.5 percent points at 27.47 percent when compared to 23 percent in non-distressed regions. The common practice in studies is to account unpaid family workers as part of the self employed workers group. Hence, the rise in share of self employed workers during 1999-00 to 2004-05 was lauded as a positive

signal from the labour market. However, it needs to be recognized that the apparent rise in share of self employed workers were mainly due to the increasing presence of unpaid family workers, pitching in labour to the household's own farm. This becomes all the more evident in the case of distressed regions where the share of unpaid family workers is considerable higher than that of normal regions.

Casual employment also is higher in the distressed region at 28 percent in the distress region compared to 24 percent in non-distressed region. On the other hand the share of regular wage employees is higher in the non-distressed region compared to distressed region. Nair, Vinod and Menon (2007) in their village level study notes this increased participation of women workers in distressed regions, especially among small and medium households. However, the distress in agriculture sector seem to be keeping non-farm sector insulated in terms of status of employment, except that regular employees share declined in distressed regions, while unpaid family workers share increased.

Table 15. Share of workers by status

	Non-Distress region			Distressed Region		
	Female	Male	Total	Female	Male	Total
self-employed	25.81	44.44	38.80	15.08	43.78	33.18
employer	0.85	1.81	1.52	0.70	1.79	1.39
unpaid family worker	38.32	16.27	22.94	46.05	16.59	27.47
regular wage employee	8.39	13.70	12.09	5.25	11.92	9.45
casual labour in public works	0.21	0.28	0.26	0.20	0.48	0.38
casual labour on other works	26.43	23.50	24.38	32.72	25.45	28.13
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: Calculated from NSS unit level data 61st round on CDROM published by Central Statistical Organisation, Government of India.

V.4 Severity of Underemployment in Distressed Regions: A look into the time dimension of employment of who reported 'being employed' as their Usual Principal Status shows that unemployment in their 'minor time' (less than 6 months) was higher among the workers in the distressed region. While 79 percent of the workers in non-distressed regions were not seeking or available for employment, in distressed region the corresponding figure was 74 percent (Table 16). However, this underemployment is much more severe in the farm sector, in general and especially drastic in distressed regions. In the non-distressed region nearly 24 percent of the farm workers suffered unemployment in their minor time period, while 32 percent of the farm workers in distress regions faced unemployment in their minor period. In the non-distressed region nearly 16 percent of the workers were unemployed for 3 to 6 months, while in distressed region it was much higher at 21 percent.

Table 16. Level of unemployment among UPS main workers

	Non-distressed region			Distressed region		
	farm	non-farm	total	farm	non-farm	total
Unemployed < than 1month	1	1.24	1.09	1.17	0.77	1.02
Unemployed 1 to 2 months	6.93	5.69	6.43	9.55	5.91	8.2
Unemployed 3 to 6 months	16.17	8.76	13.2	20.89	9.04	16.48
did not seek/ not available	75.9	84.31	79.27	68.38	84.28	74.29
Total	100	100	100	100	100	100

Source: Calculated from NSS unit level data 61st round on CDROM published by Central Statistical Organisation, Government of India.

Conclusion

The turn around in employment growth in the rural economy of India during 1999-00 to 2004-05 needs to be seen in the light of the looming agrarian crisis during the period. The peculiar changes in the rural employment scenario seem to signal distress driven employment. The increased participation of female population and aged population in work point to forced participation in labour market, owing to the declining earnings capacity of the normal income earners. The earnings capacity being closely linked to agricultural yield in agrarian economies the productivity stagnation in agriculture sector is compounding the misery, pushing people into the labour market in search of any form of employment. The decline in agrarian sector has also led to substituting paid wage labour with unpaid family labour. The conditions of work in the agricultural distress ridden regions also show feminization of work, higher levels of underemployment and greater dependence on unpaid family labour. These trends give credence to the argument that the employment growth in rural India is distress driven.

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References

- Abraham, Vinoy (2007) "Growth and Inequality of Wages in India: Recent Trends and Patterns," *Indian Journal of Labour Economics*, Vol 50, No.4.
- Bardhan, P.K.(1979), "Labor supply functions in a poor agrarian economy", *American Economy Review* 69 (1),73–83.
- Bloom, David E., David Canning ,Günther Fink ,Jocelyn E. Finlay (2007) Fertility, Female Labor Force Participation, and the Demographic Dividend, Working Paper Series, PGDA Working Paper No. 25, Harvard School of Public Health <http://www.hsph.harvard.edu/pgda/working.htm>
- Chand, Ramesh, S S Raju, L M Pandey (2007) Growth Crisis in Agriculture: Severity and Options at National and State Levels, *Economic and Political Weekly*, June 30.
- Chavan, Pallavi and Rajasree Bedamatta (2006) "Trends in Agricultural Wages in India 1964 to 1999-2000", *Economic and Political Weekly* , September 2006.
- Deshingkar, Priya and Daniel Start, (2003) "Seasonal Migration for Livelihoods in India: Coping, Accumulation and Exclusion", Working Paper 220, Overseas Development Institute, London, UK.
- Goldin, C. (1995). The U-Shaped Female Labor Force Function in Economic Development and Economic History. *Investment in Women's Human Capital and Economic Development*. T. P. Schultz. Chicago, IL, University of Chicago Press: 61-90.
- Government of India (2007) *Report of the Expert Group on Agricultural Indebtedness*, Ministry of Finance.
- Himanshu (2006) "Agrarian Crisis and Wage Labour: A Regional Perspective", *Indian Journal of Labour Economics*, Vol 49, No 2, p-p 827-846.

- Himanshu (2007): 'Recent Trends in Poverty and Inequality: Some Preliminary Results', *Economic and Political Weekly*, February 10.
- Lloyd-Sherlock (2004). *Living Longer: Ageing, Development and Social Protection*. London: United Nations Research Institute for Social Development and Zed Books.
- Mahendra Dev, S and C Ravi (2007): 'Poverty and Inequality: All-India and States, 1983-2005', *Economic and Political Weekly*, February 10.
- Mammen, K. and C. Paxson (2000). "Women's Work and Economic Development." *The Journal of Economic Perspectives* 14(4): 141-164.
- Mathur, Archana, Surajit Das and Subhalakshmi Sircar (2006) Status of Agriculture in India :Trends and Prospects, *Economic and Political Weekly*, December 30
- Mathur, Ashok(1994), "Work Participation, Gender and Economic Development: A Quantitative Anatomy of the Indian Scenario", *The Journal of Development Studies*, Vol. 30, No. 2, pp. 466-504.
- Nair, K.N., and Vineetha Menon (2007) "Distress Debt and Suicides Among Agrarian Households : Findings from three Village Studies in Kerala", Working Paper Series 397, Centre for Development Studies, Kerala.
- Nair, K.N., C. P. Vinod and Vineetha Menon (2007) "Agrarian Distress and Livelihood Strategies: A Study of Pulpalli Panchayat", Working Paper Series 396, Centre for Development Studies, Kerala.
- Robbins, L., (1930) "On the elasticity of demand for income in terms of effort." *Economica* (29), 123-129.
- Sharif, M., 1991. Poverty and the forward-falling labor supply function: a microeconomic analysis. *World Development* 19 (8), 1075-1093.

Singh , I., Squire, L., Strauss, J.,(1986) “A survey of agricultural household models: recent findings and policy implications”, *World Bank Economic Review* 1 (1), 149–179.

Sundaram K (2007) Employment and Poverty in India, 2000-2005, *Economic and Political Weekly*, July 28.

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