

WAGES AND INCOMES IN FORMAL AND INFORMAL SECTORS IN INDIA

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In this paper, a broad empirical picture of wages and earnings accruing to informal workers with different forms of labour statuses is presented. The purpose is to highlight the heterogeneous segments of employment and variations in earnings among the informal workers.

1. INTRODUCTION

The informal economy consists of a heterogeneous group of workers (Unni and Rani, 2003). They form a continuum of relationships from the very independent to the most dependent categories (Unni, 2004). While workers in the informal economy constitute both wage and self-employed workers, within the self-employed also they constitute segments having varying levels of entrepreneurial capacities. Given this heterogeneous nature of informal workers, there are likely to be both voluntary and involuntary entry into this sector.

Given the heterogeneous nature of the informal sector, one issue discussed in the literature is whether the types of employment, self and wage, share a common labour market (Aronson, 1991). A related question important to us is whether certain segments of the self-employed are really different from the wage employed. The argument above can also be posed as to whether self-employment is voluntary or involuntary.

Two approaches have been taken: (1) To test for the presence of a segmented labour market in which institutional as well as social and cultural factors account for the existence of self-employment. Self-employment is categorised as comprising a disadvantaged residual of segmented labour markets. Self-employment is involuntary forcing workers rationed out of the wage labour market to shift labour to the informal economy where earnings are lower and work conditions are poor and irregular; (2) Self-employment is a choice in response to human capital differences such as previous work experience, technical and skill training and managerial ability. Standard labour market theory assumes that individuals will choose self-employment as the best alternative as long as its real wage is above other employment. Yamada (1996) argued that people with entrepreneurial ability choose self-employment as the sum of labour and entrepreneurial income makes them better off than if they were to seek wage employment. While Maloney (2003) argues that self-employment is voluntary as a means of avoiding the costs (in terms of time and money) of operating formally.

There have been attempts to study the earnings differences between self and wage employment and within wage employed and self-employment themselves. Self-employed incomes seem to have a greater range than wage and salaried incomes. This implies a greater capacity to take risks among a part of the self-employed. Lower earnings would imply that they are not fully compensated for the risk undertaken. On the question of risk, an unconventional view is that the self-employed may actually be risk averse and not risk-takers. Given the uncertainty of income streams in the informal sector, the self-employed often evolve methods of insuring against risk, such as accessing at below market cost the financial or human capital

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resources available through one's social network. D'Souza (2003) argues that the sheer size of the informal sector and the low average incomes in developing countries imply that self-employment is a second best option, that is, it is involuntary. At such low incomes it is difficult to assume the risk of entrepreneurship. It is argued that easy accessibility of resources available through social networks mitigates the risk of entering into self-employment and allows an implicit contract wherein co-workers monitor each other and thereby make the self-employed enterprise a workable proposition.

In our view, one of the major reasons for the confusion with regard to self-employment is because we fail to distinguish between self-employed business enterprises run on the principles of profit maximization and self-employment as a residual survival activity. The former is clearly voluntarily entered into, while in the latter case these units are in some sense 'disguised wage workers' and at any time may compete for the wage jobs. The wage workers or employees are also a heterogeneous group with varying terms of contract and wage earnings.

In this backdrop, this paper is organised as follows. In section two the wage-rates and wage earnings of formal and informal workers are contrasted. In the third section predicted earnings for various segments of the informal workers taking into consideration some basic personal and household characteristics are computed. The paper concludes with a brief summary of the analysis in section four.

II. AVERAGE WAGES AND INCOMES

I. Employees

The Employment Unemployment Survey of the National Sample Survey (NSS), 1999-00, included a question on the registration of the enterprise that allowed us to identify the informal enterprises, defined as proprietors and partnership. Workers in these enterprises were treated as workers in the informal sector. We have used this definition to separate the formal and informal workers.

We have argued that informal workers are heterogeneous and broadly consist of both wage and self-employed workers. Among the wage and salaried workers, or employees there are both informal and formal sector workers. The NSS data separates the employees into regular and casual workers. We have argued and shown that all regular workers are not formal sector workers and all casual workers are not in the informal sector (Unni and Rani, 2003).

Table 1
Average Wage Rates Per Day (Rs.) for Regular and Casual Workers in
Formal and Informal Sectors, 1999-00

	Regular		Casual		All	
	Formal	Informal	Formal	Informal	Formal	Informal
All	190	82	53	57	168	70
Urban	209	86	63	58	194	76
Rural	154	73	48	56	127	62

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We report the daily wage rates per day of the regular and casual workers in the formal and informal sectors in Table 1. This is also presented separately for urban and rural areas and for men and women. Currently minimum wages are around Rs. 75-100 per day in most industries and in most states. In 1996 the National Centre for Labour (NCL) suggested that Rs. 125 was required to meet satisfactory standards of living. Only the regular workers in the formal sector received above minimum wage rates on average. The NCL norm of Rs. 125 per day was also achieved on average by the regular workers in the formal sector. None of the other segments of workers were able to reach close to this norm. The regular workers in the informal sector received wages relatively close to the bottom of our norm, Rs. 75 per day. There was hardly any difference in the daily wage rates of the casual workers in the formal and informal sectors.

While wage rates are important, a minimum standard of living is really assured only with some minimum days of work in the year as well. The earnings per week based on the norm of Rs. 100 to 125 per day works out to be about Rs. 500-600 using a minimum days work norm of 250. The NSS also provides earnings per week for the number of days worked in the week. This was divided by the number of reported workers to arrive at the wages per week for a worker. This implicitly includes the days for which work was obtained. Here again the upper cut-off of Rs. 600 was reached on average only by the regular workers in the formal sector (Table 2). Like the wage rates per day regular workers in the informal sector obtained wage earnings only closer to the lower limit of Rs. 500. There was hardly any difference in the wages per week of the casual workers in the formal and informal sectors.

Table 2
Average Earnings in the Week Per Worker for Regular and Casual Workers in
Formal and Informal Sectors, 1999-00

	Regular		Casual		All	
	Formal	Informal	Formal	Informal	Formal	Informal
All	1211	528	312	328	1056	424
Urban	1334	555	361	340	1226	472
Rural	981	466	280	320	792	366
Male	1255	558	339	349	1102	449
Female	980	354	200	215	821	279

Source: Same as for Table 1.

2. Self-employed

The other segment that is generally treated as constituting the informal sector is the self-employed. The NSS Employment Unemployment Surveys do not normally collect any information on the incomes of the self-employed. However the NSS 55th Round, 1999-00, included a separate module to collect information on the value added created in the informal enterprises, defined as proprietary and partnerships. We use this information to compute the average incomes of the self-employed.

In an interesting paper by Kingdon and Knight (2004) on South Africa, the incomes of self-employed persons were computed with and without capital. We use this form of segregation to see whether these could form different segments of the self-employed enterprises in the informal sector, in terms of their earnings.

The average monthly and weekly incomes per worker or the value of output per worker in the enterprise, obtained in the informal enterprises are presented in Table 3. In order to be able to compare it with employees in the informal sector we have estimated per worker incomes using all workers, family and hired, full and part-time. This is therefore not the value of output of the enterprise, but an approximation of the incomes earned of the self-employed in informal enterprises. Obviously if we used only owner workers, instead of all workers, the value would be a little higher. The average weekly income of all urban self-employed was Rs. 2429 and that of all rural self-employed was Rs. 1311. The self-employed in both urban and rural areas had average incomes higher than that of the regular employees.

The total value of plant and machinery, transport equipment and tools was used to arrive at the value of capital in the enterprise. We also used a cut-off of Rs. 1000 to define the enterprises without capital. This constituted about 30 per cent of the enterprises (about 20 per cent of the firms had value of capital less than Rs. 500). Average monthly and weekly incomes were computed for workers in enterprises with and without capital so defined. Self-employed workers in informal enterprises in urban area with capital had the highest weekly incomes, an average of Rs. 2757, while workers in enterprises without capital had less than half of this, Rs. 1359. In rural areas the difference was also almost half with Rs. 1580 for workers in enterprises with capital and Rs.888 without capital. Enterprises in rural areas had much lower average incomes than that of the urban ones. The enterprises with capital had weekly incomes higher than, while those without capital had incomes closer to, the average incomes of regular employees.

If we take the norm of Rs. 500-600 per week that we applied to the employees we find that the self employed workers obtained earnings above this in all the segments. The highest incomes were obtained by workers in urban enterprises with capital Rs. 2757, followed by rural self employed with capital Rs. 1580. Workers in enterprises without capital received much lower incomes, with those in rural areas having the lowest at Rs. 888. These workers were closer to the norms defined for minimum incomes though on average they all crossed the lower limits of decent incomes.

Table 3
Monthly and Weekly Average Earnings Per Worker in Informal Enterprises
With and Without Capital, 1999-00

	Monthly earnings (Rs.)	Weekly earnings (Rs.)
Rural all	5245	1311
Rural with capital	6322	1580
Rural without capital	3552	888
Urban all	9718	2429
Urban with capital	11028	2757
Urban without capital	5439	1359

Source: Same as for Table 1, Schedule 2.0.

III. PREDICTED EARNINGS

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1. Employees

Following Kingdon and Knight (2004), we fitted an earnings function separately for regular and casual workers, assuming that they broadly represented the formal and informal sectors, to arrive at predicted wages and salaries for these workers. These estimates help to control for the individual, household and other characteristics that may affect the wages of the workers. The results show the differences in wages and earnings remaining after controlling for these characteristics. We have estimated Heckman selectivity corrected OLS regressions, to correct for the selection bias with regard to participation in regular and casual jobs, and arrived at the wage earnings of the different segments.

The individual characteristics included in the earnings function for employees were age and square of age, experience and square of experience, dummies for completed primary, middle, secondary and higher secondary schooling and graduation. Dummies for marital status of being married, belonging to SC/ST households, having children below 6 years, belonging to households primarily in self-employed occupations and in rural areas, the size of land owned were used to identify the selection bias of being a regular or casual worker.

The actual and predicted average daily wages for regular and casual workers are presented in Table 4. The results showed variations across the status groups and location. While the predicted wages of regular workers were much higher than the actual average wages, the predicted wages of the casual workers were in general below that of the actual wages. This probably is an indicator of the educational and other skill differences between the regular and casual workers. Also since a large proportion of the regular workers were likely to be in the formal sector, individual differences in levels of education made a clear difference in the earnings. The impact of industrial sector and location was also seen, with the predicted earnings of the regular non-agricultural workers particularly in urban areas being higher than actual average wages.

Table 4
Predicted Average Daily Wage Earning for Regular and Casual Workers in Rural and Urban Areas by Gender, 1999-00

	Regular workers				Casual workers			
	Rural male	Rural female	Urban male	Urban female	Rural male	Rural female	Urban male	Urban female
<i>Actual average daily wage earnings</i>								
Agriculture	140.30	-	190.50	-	45.95	29.76	66.03	35.58
Non-agriculture	151.42	-	166.16	157.72	58.80	34.42	66.54	41.23
All	144.96	106.62	177.15	157.30	48.20	30.36	66.31	39.04
<i>Predicted daily wage earnings</i>								
Agriculture	99.40	-	353.20	-	40.07	29.84	63.70	39.46
Non-agriculture	139.91	-	395.45	522.45	56.59	42.11	70.01	47.94
All	130.09	149.95	375.36	460.25	42.14	30.36	67.69	48.10

Source: Same as for Table 1.

The results showed that even after controlling for personal characteristics including education there was segmentation in the labour market between regular and casual workers. In fact the differences in earnings between the two types of workers became even more pronounced after controlling for the personal characteristics. This approximates the differences

in the education and skill profile of workers in the formal and informal sectors, assuming that regular workers were more likely to be in the formal sector.

2. Self-employed

The average earnings computed earlier for self-employed workers in informal enterprises was likely to overestimate the returns to labour since it included returns to capital. Even the relatively small enterprises had a small amount of capital in terms of crude tools. In order to obtain the predicted earnings of the self-employed workers we regressed the log of value of output on log of capital, as defined above, log of expenses to proxy for inputs, and log total workers to proxy for labour. This is based on a simple Cobb-Douglas production function. Other variables included as controls were dummies for whether the enterprise was home-based and had a female proprietor. The adjusted R-squared varied from 0.71 to 0.84. The returns to labour or the marginal product of labour was calculated by multiplying the coefficient of the log of labour by the mean of ratio of output to labour (Kingdon and Knight, 2004).

The predicted monthly and weekly incomes of self-employed workers were found to be much lower than the average (Table 5). The average weekly incomes had ranged from Rs.888 to 2757 while the weekly predicted incomes ranged from Rs.119 to 1082. Workers in enterprises with capital had returns to labour above the minimum norm of Rs.500-600 even after controlling for the effect of capital and other characteristics. However, workers in informal enterprises without capital had weekly incomes below the lower limit of the norm, Rs.500, particularly those in rural areas. The differences in the earnings of the self-employed workers with and without capital widened after controlling for differences in capital. They clearly form different segments of the workforce, in terms of their earnings.

Table 5
Monthly and Weekly Predicted Earnings Per Worker in Informal
Enterprises With and Without Capital, 1999-00

	Predicted monthly earnings (Rs.)	Predicted weekly earnings (Rs.)
Rural all	1663	415
Rural with capital	2095	523
Rural without capital	478	119
Urban all	4330	1082
Urban with capital	4301	1075
Urban without capital	1964	491

Source: Same as for Table 1, Schedule 2.0.

IV. CONCLUSION

The workers in the informal sector form a heterogeneous group. The various segments among the informal workers enter this sector for varying reasons, sometimes voluntarily and sometimes involuntarily. A segment of employees may be rationed out of the formal sector and hence may be forced to participate in the informal sector due to lack of any form of unemployment insurance in India.

Using the latest labour force survey data, we present the heterogeneity of regular and

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Self-employed workers were further segregated into those operating with and without capital. Among the self-employed workers, those in enterprises with capital earned higher returns to their labour than they could expect to in the formal sector given their human and physical capital endowments. Self-employed workers operating without capital had earnings much lower than the regular workers in the formal sector. These activities may be of a residual survival nature. Unlike the unilateral positions taken in the literature, we argue that self-employed workers may enter the informal sector due to their entrepreneurial and human capabilities not necessarily because they were rationed out of the formal sector.

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