Does Union Membership Pay Off? Evidence from Organized Indian Manufacturing Industries

Amit K. Bhandari

The process of global integration deepens the flexibility in labour market and renders collective bargaining increasingly difficult. This study has attempted to analyse the impact of union membership on wages in the organised manufacturing industries in India. The study uses a recent survey data on labour market in the organised manufacturing industries. The estimated wage premium for union membership is 23.5 percent for permanent workers. Decomposing this wage gap indicates that union membership contributes a significant portion of this wage differential, that is, high unionization can lower income inequality among workers. This finding also turns down the free riding problem in the organized manufacturing industries.

Amit K. Bhandari is Assistant Professor, Indian Institute of Social Welfare & Business Management, Kolkata 700 073. E-mail: amit.kumar.bhandari @gmail.com

Trade Union's Role

Trade unionism is a legislative system of organizing workers and raising voice for economic and social benefits. Unions perform the vital role of protest, of calling attention to both the direct and unforeseen consequences of managerial decisions upon workers and the larger community. In a democratic country trade unions can essentially be viewed as interest groups of industrial workers, the strength and organization of which are often tied up with political parties. In the USA, trade union is an economic association of workers thriving on free collective bargaining, giving freedom to workers to choose unions. In Britain unions maintain their separate identities as socio economic interest groups and enjoy full freedom to bargain with the employers. In France and Italy trade unions are closely associated with political parties. In the ex-colonial democracies the trade union movement has been developed as an aspect of nationalist movement and eventually been tied with political parties. In India, political parties have traditionally controlled trade unions.

The presence of unions is associated with collective bargaining such as higher wages and benefits in order to improve the conditions of workers. The differences in wages between union and non-union workers are considered an important indicator of union control. Almost all studies uniformly conclude that there exists a positive union-non-union wage gap. However, when disaggregated calculations are made, union memberships are not always associated with positive wage gaps (Booth 1994). In the USA and Britain trade unions significantly reduce wage dispersion among workers. Freeman (1982) showed that the American unions reduce intra-industry wage dispersion and wage dispersion across certain labour markets. Trade unions in Britain also reduce wage dispersion within the union sectors (Gosling & Machin 1993).

Almost all studies uniformly conclude that there exists a positive union-non-union wage gap.

In India less than two percent workers in both formal and informal sectors are covered by union membership. The union concentration is very high in public sector, basically confined to permanent workers in the organised industries. In the organised private sector union membership represents about 60 per cent workers. However, it is much less in small and medium scale units. In the unorganised sectors which employed 90 per cent of the labour force, union is virtually absent. With the spread of industrialization and economic development, trade union movement has acquired varied colour. One striking feature is the rapid growth in unionism among white-collar workers (Sahoo 1999). The impact of union is dependent on many factors such as quantitative and qualitative strength and its leadership. Unions played a dominant role in the states ruled by leftist parties such as West Bengal and Kerala. On the other hand, the North Indian states have comparatively low union penetration. Bigger firms are more likely to be unionized than small firms (Deshpande et al 2004).

Dunlop (1944) was the first to declare a trade union as an economic theory, which requires that the organization be assumed to maximize (or minimize) something. According to him, the aim of trade union is to maximize the total amount of wages and benefits for its members. During the seventies and eighties, the development of human capital theory and access to better data sources made possible the rise in new generation studies of wage differentials (see Delton & Ford 1977, Freeman & Medoff 1981, Long & Likn 1983, Dunn 1986). Unions negotiate with their employer for higher wages, health benefits, retirement benefits, hours of work and working environment. Unionized members receive same wages as their non-unionized counterparts. Unions typically do not try to negotiate lower wages for non-members. If the non-member workers were paid less, firms would substitute union workers to cheaper non-union workers, which in turn may drive unions

out of existence. However, empirical evidence on union 'wage effect' suggests that union members are getting wage advantage in comparison to their non-unionized counterparts.

The effect of unions on the distribution of earning depends on the size of the union wage premium, the position of the organised workers in the non-union earning distribution and the effect of unions on inequality within the organized sector (Freeman & Card 1993). In the United States, private sector union members' gain substantially in terms of wage and benefits compared to their counterpart (Budd & Na 2000, Schumacher 1999). Using British Household Panel Survey Hildreth (1999) showed that there exists positive wage difference in United Kingdom. The wage difference between union and non-member workers can be distinguished as structural effects and the difference that cannot be traced from the difference in characteristics which is referred as union effect. The structural effect includes the difference in productivity augmenting characteristics like education, experience, skills and other job related characteristics. In India, the presence of union in manufacturing industries explains only a little portion of the wage gap between permanent and contractual workers (Bhandari & Heshmati 2008).

The objective of the study is to investigate the wage difference between union and non-union members and the factors that can be attributed to this difference. How much union effect is there in bargaining higher wages? Or is there any free rider problem? The present study brings out the wage differential between unionized and non-unionized among the permanent workers. Contractual workers have not been considered because of low union penetration among them.

Theoretical Background

Union membership has traditionally been the principal agent of voice representation which empower workers in the form of better wages and benefits, better working conditions as well as job security (Booth 1995). Union set wages for all workers irrespective their membership. It is very difficult for unions to sell group incentive schemes to its rank and file, the beneficiaries being only a small subset of its constituencies. Hence, there exists a free riding problem associated with union membership. Free riding assumes that any union bargaining is available to all workers whether or not they are members. In a workplace free riding problem is relevant where there is no coercion of joining the union. The reason for joining union in the absence of coercion is the anticipation of excludable goods and services offered by unions (Olson 1965). The excludable goods might include pension advice, legal advice etc (Booth & Bryan 2004). However, empirically it is difficult to estimate the effects of excludable goods on the decision to join the union by the workers.

It is very difficult for unions to sell group incentive schemes to its rank and file.

Bargaining in the Age of Reform

Opening up of the economy through globalization and subsequent increase in competition has led employers to seek greater labour market flexibility (for a more detailed discussion about globalization see Bhandari & Heshmati 2007). Rigid labour laws in the country discourage industries to adjust its labour force according to the requirement. In principle, lack of flexibility in the labour market is hurting job market and eroding competitiveness of the domestic industry. Bhandari and Heshmati (2005) found that Indian labour market is not inefficient in its labour use. Modest speed of adjustment has led employment size closer to the optimal level. In practice, permanent workers are being fired by means of so-called voluntary retirement schemes, thereby reducing the size of permanent workforce and increase in the use of contract workers. At the same time firms are attempting to increase labour productivity by making changes in internal utilization by redesigning jobs and changing job contents (ILO 1995).

Globalisation has weakened the bargaining position of trade unions as it increases the substitutability of employees (Rodrik 1997). In India, trade unions have been loosing the strength ever since the reform process began. The opening up of the economy is accompanied by a vigorous campaign for the right to hire and fire workers freely. As the process of globalization and liberalization deepens, employers are demanding greater flexibility in labour use so that they can freely deploy or retrench workers if the business environment demands. As a result there has been a structural shift in employment from permanent to temporary, contract or casual employment. All these developments have resulted in weakening the bargaining power of labour unions. The bargaining power of trade unions has further been weakened by new managerial strategies like outsourcing and parallel production (Sharma 2006). During the past two decades, number of maydays lost due to lockout is higher than strikes by the workers, indicating the loosing strength of labour laws that have contributed to weaken the bargaining power of trade unions.

The disconcerting feature of organized manufacturing industries is the negative employment growth. The drive for labour flexibility and just-in-time production has led to the changes in employment contract, whereby full-time work is declining and part time, casual and contractual work is on the rise (O'Connor et al 1999), Campbell and Burgess 2001). Official figures indicate that organized manufacturing industries shed jobs about 18 per cent between 1997 and 2004. At the same time contractualization is rising proportionately to the fall in permanent jobs. Contractual employees are typically without the legislative protection compared to their counterparts. It is much easier for trade unions to organize permanent workers. In the post-reform era the total number of jobs has increased but these jobs are created outside the regular formal sector where the trade unions have failed to represent workers. Since the contractual workers have no formal employment status and can be retrenched

anytime, it is difficult to organize them. Moreover, contractual worker cannot join the unions of the permanent workers. However, they prefer to stay away from any union activities because of the fear of job and income security. Trade unions have become more defensive in the age of reform due to structural transformation of the economy, which forced them to reorient their role to ensure the survival of the industry. As the future of trade unions depends on the size of workforce, the growing number of contractual workers might loosen the momentum of the trade union movement.

As the future of trade unions depends on the size of workforce, the growing number of contractual workers might loosen the momentum of the trade union movement.

Data

The information available from secondary sources does not permit a comprehensive analysis of trade union and labour market transition in India. The quality of data collected and published by the Labour Bureau is inadequate and poor (Shyam Sundar 1999). The present study uses field data collected from individual factory workers from different industries and from different locations in the country. The survey was at the instance of Indo-Dutch Programme for Alternatives in Development (IDPAD) sponsored research project on "Political Economy of Labour in a Globalised Economy". This data was collected from selected industrial areas of West Bengal, Uttar Predesh, Haryana and Delhi during 2004-05. The survey contains information on workers personal as well as job related characteristics. The sample includes 271 workers from different factories in organized manufacturing industries. Factories belong to 16 industries under 2 digit industry groups of National Industrial Classification 1998. The information was collected on the basis of a structured questionnaire. The samples were randomly chosen within the framework that the number of workers restricted to at most five in a particular firm in order to cover diverse industry groups. For the sake of comparability attention was given to select the type of workers in a firm so that the sample represents diverse category of workers. As far as union penetration is concerned West Bengal has traditionally been the stronghold of trade unions compared to other parts of the country. In compliance with general perception 65 per cent of the workers are union members, while 35 per cent are from other states.

The descriptive statistics of the variables used of the study are presented in Table 2. The union density is 50.6 per cent in the total sample. The unionized workers earn higher income compared to non-unionised workers. Unionized workers earn average per hour wage of Rs. 20.84 while non-union workers earn Rs. 16.65 (The exchange rate at the time of survey was $1 = Rs. 45). Majority of the union workers belongs to 31 – 50 age groups, while most of the non-union workers belong to lower age groups. The highest number of workers were educated up to secondary level, followed by

higher secondary and graduate education. The average job tenure, which is a proxy of job experience of the workers was 10.2 years and 6.2 years for union members and non-members respectively. A small proportion of workers was found to have special training. About 75 percent unionized workers were non-migrant, while majority of non-migrant were non-members. Union penetration was significantly lower in the Special Economic Zone (SEZ) areas. Union penetration was the highest in West Bengal, while in other states non-union members constituted the majority.

Methodology

The method of estimation of the impact of union on wage premium follows the standard practice of human capital model. The estimation process is divided into two stages. In the first stage, the wages of individual workers are regressed on a vector of worker characteristics (personal and job related). This estimation is made for union and non-union workers separately. The earning function takes the following form:

$$W_i = \beta X_i + \varepsilon_i$$

where W = natural logarithm of hourly wage rate; X = a vector of worker's personal as well as job related characteristics (see Table 1 for the list of variables), β = coefficient of the individual variables and ε = random error term which is assumed to satisfy the usual properties. The earning equation is estimated separately for both union and non-union workers to investigate the difference in the return of the individual and job related characteristics considered in this study.

The estimated earning equation for union and non-union workers are

$$\overline{W_u} = \hat{a}_u \, \overline{X_u} \qquad (1)$$

$$\overline{W_n} = \hat{a}_n \, \overline{X_n} \qquad (2)$$

Table 1: Variable Descriptions

Variables	Definition
Age	
Below 31 years	= 1 if age below 31 years
31 - 40	= 1 if age between 31 – 40 years
41 – 50	= 1 if age between 41 – 50 years
51 & more	= 1 if age 51 years and above
Wage	**Hourly earning of each worker (Rs.)**
Education	
Literate	= 1 if literate
Basic	= 1 if basic education
Secondary	= 1 if secondary education
Higher Secondary	= 1 if higher secondary
Graduate	= 1 if graduate and above
Job Tenure	
Below 10 years	= 1 if below 10 years experience
11 – 20 years	= 1 if 11-20 years experience
21 years & more	= 1 if 21 years & more years experience
Advanced Skill	
Yes	= 1 special training
No	= 1 no special training
Migration	
Migrant	= 1 if the worker is a migrant
Non migrant	= 1 if the worker is not a migrant
Industrial location	
SEZ	= 1 for Special Economic Zone (SEZ) included in the study
Other Places	= 1 for other industrial locations
Region	
West Bengal	= 1 if industries are located in West Bengal
Other Places	= 1 if industries are located outside West Bengal

Table 2: Descriptive Statistics

Variables	Union workers		Non-union workers	
	Mean	Standard Deviation	Mean	Standard Deviation
Age				
Below 31 years	0.12	0.33	0.49	0.50
31 - 40	0.42	0.50	0.35	0.48
41 – 50	0.34	0.48	0.14	0.35
51 & more	0.11	0.31	0.02	0.14
Wage (Rs.)	**20.84**	**9.18**	**16.65**	**7.80**
Education				
Up to Secondary	0.77	0.44	0.68	0.47
Higher Secondary	0.16	0.37	0.22	0.41
Graduate and above	0.08	0.27	0.10	0.47
Job Tenure				
Below 10 years	0.33	0.47	0.76	0.43
11 – 20 years	0.34	0.48	0.16	0.37
21 years & more	0.33	0.47	0.07	0.26
Migration				
Migrant	0.25	0.43	0.70	0.45
Non migrant	0.75	0.43	0.30	0.45
Advanced Training				
Yes	0.23	0.42	0.18	0.38
No	0.77	0.42	0.82	0.38
Industrial location				
SEZ	0.04	0.19	0.15	0.35
Other Places	0.96	0.19	0.85	0.35
Region				
West Bengal	0.91	0.29	0.19	0.39
Other Places	0.09	0.29	0.81	0.39
Number of Observation	137		134	

where the hats denotes estimated parameters and the bars over variables indicate sample mean. W is the mean wage, X is a vector of the mean values of the wage determining characteristics. â is a vector of estimated coefficients or return to the characteristics. The gross earning differential in logarithm form is given by

$$\overline{W}_u - \overline{W}_n = \hat{\hat{a}}_u \overline{X}_u - \hat{\hat{a}}_n \overline{X}_n$$

In the second step, following Oaxaca (1973) methodology, the above equation has been expanded. The difference in wages is to be adjusted to identify the difference in the factors affecting wages. Since there are two different wage structures there is no theoretical or empirical guidance for us to know definite wage structure prevailing in the market. First, we assume that the real wage structure affecting the labour market is union wage structure and adjust the gross earnings differential in terms of the coefficient of the union wage equation, and obtain an estimate of union and non-union earnings

differential. Second, we assume the real wage structure prevailing in the labour market is non-union wage structure.

$$\Delta W = \overline{W}_u - \overline{W}_n = (\overline{X}_u - \overline{X}_n)\hat{\hat{a}}_u + \overline{X}_n(\hat{\hat{a}}_u - \hat{\hat{a}}_n)$$
$$= (\overline{X}_u - \overline{X}_n)\hat{\hat{a}}_n - \overline{X}_u(\hat{\hat{a}}_u - \hat{\hat{a}}_n)$$

Thus, the average wage differential between union and non-union workers is decomposed into two components. The first term on the right hand side is expected to correspond to the difference in productivity or the difference in endowment evaluated according to the non-union returns (β_n), the second term is the differences in the pay structure between union and non-union workers evaluated by the mean value of the union characteristics, which is termed as union wage premium.

Empirical Results

Table 3 reports the results of standard earning function of unionized and non-unionized segment. The estimated coefficients highlight the importance of human capital model in determining earning, following Mincer's earning equation. The earning equation is estimated for each category using education level, occupational experience, skill, migration and industrial location (Table 3). The results help us to identify the impacts of earning determining characteristics of workers. Most of the coefficients for both unionized and non-unionized segment are statistically significant.

As expected, each successive education level is associated with subsequent higher earnings. The estimated earnings of graduates are significantly higher in the non-unionized segment than in the unionized segment. However, the return to higher secondary level of education is higher for unionized segment. The return to job tenure is significantly higher for union members than non-members. Special training provided by firms pays a significant premium for both unionized and non-unionized workers. It is important to mention here that advanced trainings are not provided in the conventional education system. Workers have to get additional technical skill from different training institutes before entering the job or employers provide the necessary training according to the requirement of the jobs. Earnings of migrant workers differ depending on whether they are union member or not. For non-unionized workers migration is associated significantly with lower pay, while for unionized workers the coefficient is positive but not significant. Workers belonging to Special Economic Zones receive lower wages compared to other areas for non-unionized members. Let us now turn to the analysis of the decomposition of the wage difference for these two segments of workers.

Decomposition

Based on the formula |exp(D) – 1|, where D is the difference in log points in the earning between union and non union workers, there is an earning difference 0.221, representing an adjusted pay difference of 23.5 per cent. Measured with union members' coefficients, 59.34 per cent of this difference is due to the wage-determining characteristics. When evaluated with non-members' coefficients, the

Table 3: Decomposition of the Wage Equations: Comparison by Union Membership

	Union Member		Non Member	
	Coefficient	t-value	Coefficient	t-value
[Age 15-30]				
31 - 40	0.045	0.380	0.012	0.171
41 – 50	0.006	0.045	0.083	0.797
51 & more	0.025	0.143	0.307**	1.894
[Education: Up to Secondary]				
Higher Secondary	0.232*	2.424	0.131	1.745
Graduate	0.226**	1.810	0.252	2.442
[Tenure: < 10 years]				
11 – 20 years	0.248*	2.621	0.064	0.691
21 years & more	0.470*	4.031	0.036	0.268
[No special training]				
Special Training	0.338*	3.738	0.369	4.321
[Non migrant]				
Migrant	0.025	0.292	-0.291	-4.155
[Other areas]				
SEZ	-0.225	-1.219	-0.089	-0.891
[Region: West Bengal]				
Other regions	-0.080	-0.585	-0.222	-2.347
Constant	2.615*	18.166	2.829*	37.714
Adjusted R Squared	0.306		0.295	
F Statistics	6.462*		6.049*	

Note: Omitted reference category are shown in brackets
Coefficients of industry category and area are not reported
*Statistically significant at 0.01 level; ** at 0.05 level of significance

difference in observed characteristics explains 24.98 per cent of the pay difference. This variation may due to structural differences among some attributes of the non-unionized workers. The unionized workers are expected to be more motivated and prepared to invest in productivity-augmenting factors (Budd & Na 2000).

Thus, union wage premium, the higher return earned by the unionized segment for the same characteristics is in the range of 40.66 per cent and 75.02 per cent. This indicates the impact of wage reservation by the unions for their members in the organised manufacturing sector. Thus, workers are not able to grab the

opportunity of free riding the benefits of collective bargaining by unions.

Summary & Conclusions

There has been increasing interest on the bargaining power of trade unions in the age of globalization. This paper estimated the pay difference between union members and non-members in the organised manufacturing industries. The result indicates that in Indian manufacturing industries trade unions are able to reserve higher wage for their members. Unionized workers earn 23.5 per cent more compared to their non-unionized counterparts. A standard earning decomposition model is applied to investigate the factors responsible for this gap. Productivity related characteristics explain 59.3 percent wage gap when evaluated with the coefficients of unionized workers. However, when evaluated with non-unionized workers' coefficient the productivity related characteristics explains only 24.9 per cent wage difference. The variation in wage determining characteristics between unionized and non-unionized workers might explain this difference. A higher proportion remains unexplained of what is referred to as union premium. This highlights the fact that non-unionized workers are getting advantage of union bargaining. The result indicates that unions are able to reserve higher wages for their members. This in turn highlights the fact that high unionization can reduce inequality of earnings and help raise overall industry wage rates.

In Indian manufacturing industries trade unions are able to reserve higher wage for their members.

References

Bhandari, A. K & A. Heshmati (2007), "Measurement of Globalization and Its Variations among Countries, Regions and Over Time", in Arno Tausch & Almas Heshmati, Roadmap to Bangalore? Globalization, the EU's Lisbon Process, the Structures of Global Inequality, Nova Science Publishers, USA.

Bhandari, A. K. & A. Heshmati (2005), "Labour Use and Its Adjustment in Indian Manufacturing Industries", *Global Economic Review,* 34 (3).

Bhandari, A. K. & A. Heshmati (2008), "Wage Inequality and Job Security among Permanent and Contract Workers in India: Evidence from Organized Manufacturing Industries", *ICFAI Journal of Applied Economics,* VII (1).

Booth A. L. (1994), The Economics of the Trade Union, Cambridge University Press.

Table 4: Decomposition of Union/Non Union Wage Gap

Decomposition	Total Gap	Portion Attributed to Difference in	
		Characteristics	Union Premium
Returns to union member are baseline	0.211 (100.00)	0.125 (59.34)	0.086 (40.66)
Returns to non member are baseline	0.211 (100.00)	0.053 (24.98)	0.158 (75.02)

Booth A. L. (1995), "Layoffs with Payoffs: A Bargaining Model of Union Wage and Severance Pay Determination", *Economica*, 62(248), November.

Booth, A. L. & M. K. Bryan (2004), "The Union Membership Wage Premium Puzzle: Is there a Free Rider Problem?", *Industrial and Labour Relation Review* , 57 (3).

Budd, J. W. & I. G. Na (2000), "The Union Membership Wage Premium for Employees Covered by Collective Bargaining Agreement", *Journal of Labour Economics*, 18 (4): 783-807.

Dalton, J. & E.J. Ford, Jr. (1977), "Concentration and Labour Earnings in Manufacturing and Utilities," *Industrial and Labour Relations Review*, 31, October.

Deshpande, L. K., A. N. Sharma, A. K. Karan & S. Sarkar (2004), "Liberalisation and Labour – Labour Flexibility in Indian Manufacturing", Institute of Human Development, New Delhi.

Dunlop, J. T (1944), Wage Determination under Trade Unions, McMillan.

Dunn, L.F. (1986), "Work Disutility and Compensating Differentials: Estimation of Factors in the Link between Wages and Firm Size." *The Review of Economics and Statistics*, February.

Freeman (1982): "Union Wage Practices and Wage Dispersion within Establishments", *Industrial and Labour Relations Review*, 36 (1): 3-21.

Freeman R. B. & D. Card (1993), Small Differences That Matter: Labour Markets and Income Maintenance in Canada and the United States, University of Chicago Press.

Freeman, R.B. & J. Medoff (1981), "The Impact of Percentage Organized on Union and Non-union Wages." *Review of Economics and Statistics*, 63.

Gosling, A. & S. Machin (1993), Trade Unions and the Dispersion of Earnings in UK Establishments, CEP Discussion Papers, 0140, Centre for Economic Performance, LSE.

Hildreth, A. K.G. (1999): "What has Happened to the Union Wage Differential in Britain in the 1990s?"*Oxford Bulletin of Economics & Statistics*, 61(1):5-31.

ILO (1995), The Implications of Structural Change for Employment and Training in the Chemical Industries, International Labour Organization.

Long, J. & A. Link (1983), "The Impact of Market Structure on Wages, Fringe Benefits, and Turnover." *Industrial and Labor Relations Review,* 36, January.

O'Connor, J. S., A. S. Orloff & S. Shaver (1999), States, Markets, Families: Gender, Liberalism and Social Policy in Australia, Canada, Great Britain and the United States, Cambridge University Press, Cambridge.

Oaxaca, R. L. (1973), "Male Female Wage Differentials in Urban Labour Market", *International Economic Review*, 14(3): 693-709.

Olson, M. (1965), The Logic of Collective Action, Cambridge: Harvard University Press, Chapters 1-4.

Rodrik, R. (1997), Has Globalization Gone Too Far?, Institute for International Economics, Washington D. C.

Sahoo, B. (1999), Labour Movement in India, Rawat Publications, Jaipur and New Delhi

Schumacher, E. J. (1999), "What Explains Wage Differences Between Union Members Density on the Union Wage Differential?" *Review of Economics and Statistics*, 78(3).

Sharma, A. N. (2006), "Flexibility, Employment and Labour Market Reforms in India", *Economic & Political Weekly*, May 27.

Shyam Sundar, K. R. (1999), "Official Data on Trade Unions", *Economic & Political Weekly*, October 2.