WAGE TRENDS IN INDIAN INDUSTRY

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PREFACE

For the smooth functioning of an organization, a harmonious relationship among the employers, the employee and the trade unions was most desirable. However, the industrial relations in India had been characterized by a confronting relationship between the employers and the trade unions and the passive role played by the State through the complicated labor laws. Some of the provisions in the labor laws restrict the flexibility of labor

The industrial workers had to struggle for their very survival in an era of globalization which had brought about massive retrenchment, downsizing, of productive units outsourcing and indulging in subcontracting. Further, companies had been adopting innovative techniques for management of human resources and had been marching towards an improvement in wages and in the working conditions without resorting to collective agreements. This had reduced the role and importance of the trade unions.

Employment, wages and allowances, and bonus payments were the major issues for the industrial strikes in the Indian context. Collective bargaining and voluntary arbitration were the major ways adopted to prevent the occurrence of the industrial disputes.

The Central and the State Governments had been taking effective measures for the maintenance of industrial peace which was important for sustainable development and for the progress of the Indian production units.

TRENDS IN EMPLOYMENT AND WAGES

Industrial disputes arise due to various reasons. Generally, issues related to wages and allowances, bonus payments, personnel, retrenchment, working hours, violence and indiscipline were the major factors for causing industrial disputes in India.

The industrial transformation of an economy brings about a variety of far-reaching changes in the economy such as those of rapid urbanization, the emergence of industrial communities, complex structuring of industry and

labor a quantitative growth in the workforce, the development of labor unions and the application of scientific management techniques to industries.

INDUSTRIAL LABOR

Over a period of years, industrial laborers had organized themselves into trade unions.

Productivity is an index and an economic measure of efficiency with which human resources as a whole were utilized in the production process.

"The important cause of lock out is the labor productivity that has failed to rise commensurate with the rise in wages".

"Analysis of data on industrial dispute shows that a sizable number of disputes relate to wage and wage structure

The present study entitled, "Management of Labor and wages in selected Indian Industries"" includes a brief introduction to the background of the theme of the study, the statement of the problem, the objectives of the study, the scope of the study, the methodology adoption sampling design, a frame work of analysis, the period of the study, the limitations of the study and chapter classification.

An elaborate review of the previous studies undertaken in respect of the related topics and the operational definitions of the various concepts used in the present study.

Present the trends in the employment of labor, wages and factor productivity of the selected industries at the All India level. Encompasses a statistical analysis of the perceptions of the employees of the sample industrial units towards wage related factors. the perception of the employers of the sample industrial units on operational issues in the management of labor and wages in the sample industrial units and the problems that had been confronted by the employers.

Suggestions and Conclusion" epitomises the major findings of the study, pointing out the policy implications and the scope for future research in the related areas.

CONTENT

CHAPTER – 1

1.1 INTRODUCTION

The adoption of new sophisticated methods of production and of new improved technologies would require a paradigm shift in entailing an integration of innovation in the product and in the processes with new ways and methods of designing the organizations. Globalization and technological changes had brought about radical changes in the conditions prevailing in the labor market, in the organizational culture and in the way the workplace had to be managed including the management of trade unions and the promotion of industrial relations.
The major objective of the Economic and Industrial Policy (1991) was to transform and integrate the Indian industrial and financial sectors with that of the global market situations. The measures undertaken had included the privatization of the public sector organizations, introduction of modernization and technological changes, training of manpower and the up gradation of skills, and the rehabilitation of the sick units.

For the smooth functioning of an organization, a harmonious relationship among the employers, the employee and the trade unions was most desirable. However, the industrial relations in India had been characterized by a confronting relationship between the employers and

the trade unions and the passive role played by the State through the complicated labor laws. Some of the provisions in the labor laws restrict the flexibility of labor. In recent years, companies had been able to use the process of productivity bargaining as an effective mechanism for bringing about successful changes in the workplaces of various industries.

The trade union movement in India had been characterized by the formation and the fragmentation of the unions on the basis of political ideologies. The trade union movement, had started from an era of excessive exploitation, to an era of resistance to exploitation through strikes, work stoppages, and the like in India. But at present the industrial workers had to struggle for their very survival in an era of globalization which had brought about massive retrenchment, downsizing, of productive units outsourcing and indulging in subcontracting. Further, companies had been adopting innovative techniques for management of human resources and had been marching towards an improvement in wages and in the working conditions without resorting to collective agreements. This had reduced the role and importance of the trade unions.

The membership of the trade unions in the organized sector at the State as well as at the central levels had been decreasing due to the practice of downsizing and also due to the closing down of the

establishments. "Over 10 lakh industrial units in the country were closed in the past few years because of the open import policy of the centre, and more than a crore of workers have lost their jobs."[1] In India the unification and multiplication of the trade unions were quite common. The splitting of the unions due to ideological differences was also a great threat to their strength with respect to collective bargaining.

Employment, wages and allowances, and bonus payments were the major issues for the industrial strikes in the Indian context. Collective bargaining and voluntary arbitration were the major ways adopted to prevent the occurrence of the industrial disputes. The Central and the State Governments had been taking effective measures for the maintenance of industrial peace which was important for sustainable development and for the progress of the Indian production units.

TRENDS IN EMPLOYMENT AND WAGES

In the Industrial sector, the current defensive strategy of retaining, and providing the benefits to the existing workers had raised the labor costs and had worsened the over-all environment for employment growth. The restrictions imposed against retrenchment of labor and the closure of factories had raised the long-term cost of the Industries. In addition, the fast growth in respect of money wages had

[1] The Hindu, Monday, November 7, 2005, p.7

slowed down the employment growth. Table No.1.1 had presented the number of workers employed in the Industrial sector in India.

TABLE 1.1

NUMBER OF WORKMEN EMPLOYED IN INDIAN INDUSTRIES

(in Lakhs)

YEAR	PUBLIC SECTOR	PRIVATE SECTOR	TOTAL
1981	15.02	45.45	60.47
1982	15.92	46.61	62.53
1983	16.34	46.56	62.9
1984	17.17	44.73	61.9
1985	17.61	44.21	61.82
1986	18.15	44.48	62.63
1987	18.62	44.10	62.72
1988	18.67	43.95	62.62
1989	18.63	43.83	62.46
1990	18.70	44.57	63.27
1991	18.52	44.80	63.32
1992	18.60	45.70	64.3
1993	18.50	45.50	64.0
1994	17.80	46.30	64.1
1995	17.60	47.10	64.7
1996	17.40	50.50	67.9
1997	16.60	52.40	69.0
1998	16.20	52.30	68.5
1999	15.70	51.80	67.5
2000	15.30	50.80	66.1
2001	14.30	50.10	64.4
2002	13.50	48.70	62.2
2003	12.60	42.60	55.2

2004	11.80	38.72	50.52
2005	11.20	32.64	43.84
% Change in 2005	-0.25	-0.28	-0.27
CGR overall	-1.30	-0.09	-0.41
CGR pre-reform	2.12	-0.43	0.26
CGR post-reform	-3.83	-1.49	-2.09

Source: India Statistics, 2006.

Table 1.1 had clearly shown that the employment scenario both in respect of the private as well as the public manufacturing sectors had been gradually declining over a period of years. The total employment position after the introduction of the New Economic Policy (NEP) in India has drastically come down from 60.47 lakhs in 1981 to 43.84 lakhs in 2005. The percentage change in the total level of employment for the overall period of 1981 to 2005 was negative and it stood at 0.27. The compound growth rate of employment for the overall period was also found to be negative rate of 0.41. During the pre-reform period it was found to be a positive rate of 0.26 but after reforms it had became a negative rate of 2.09. Such a state of affairs might have been due to the fact that many employers had resorted to substitution of capital by technology improvements which had led to a decline in employment intensity and the phenomenon of jobless growth in India. In some specific instances, the substituting of capital had taken place with the consent of the workers. There was also increasing evidence to prove

that the employers had been resorting to flexible labor categories (1992)[2] which had revealed that Indian labor markets were not as rigid as they appeared to be firms had also resorted to parallel production and sub-contracting.

The welfare of the workers was related to providing job security and monetary rewards. The employers play their trump card by varying the proportions of a different kinds of workers in their employment to attain their goal of wage - cost reductions. Moreover, employers had been particular in not allowing many of the workers to become permanent. They employ trainees who could not claim permanency in their employment positions. This indirectly would reduce their wage costs also.

Wage is a major source of livelihood for a large number of employees and their dependents. Wage also represents a cost of production for the employers. In an economic sense, wage is referred to as the price for labor. That is, it is a payment by way of compensation for the work done. In a sociological sense, wages were the characteristic stratifications for various occupational categories. In a psychological sense, wages satisfy the needs of the employers both directly as well as indirectly. The form they take is usually a response to the changing

[2] A. Sivananthiran, Globalization and Labor Management Relations in South Asia, Labor Relations in South Asia, 2003.p68.

aspirations of the employees. In a political sense, wages represent the exercise of constitutionally sanctioned choices in employer–employee relationships. In a legal sense, the term 'wages' have acquired varied connotations depending upon the context in which it is used and had become a subject of special law in many countries. At an aggregate level, wages become an economic variable affecting and being affected by employment, consumption, investment and prices and occupies an important place in the Distribution theory along with rent, interest and profit as an important component of National Income.

If wage rate prevailing at a point of time was a matter of chance or custom, it was all the more the reason that there should be a definite Labor and wage policy for the country. Indeed, wage structure should not be allowed to take a haphazard shape as it had further to happened in India.

At the same time, the Committee on Fair wages had felt that the minimum wage should be provided not merely for the bare sustenance of life but also for the preservation of the efficiency of the workers. Further, the minimum wage should provided to meet the basic requirements of education, medical and other amenities also.[3]

[3] Report of the committee on Fair wages,1948, p9. as quoted in A.M. Sarma (1988) "Understanding wage system" Himalaya Publishing House, 1988 p19.

MONEY WAGES AND REAL WAGES

Changes that take place in the wage components of employees have an impact n the betterment or otherwise of an economy. Wage increases should have some relevance to the performance of labor. The Pay per unit of labor output is raised by workplace arrangements which is usually beyond the recognized procedure adopted for determining the wage rate. This had become a continuous and common phenomenon in the Indian Industries where money the wages were paid in accordance with the inflationary trends in the economy.

The real wage is a better indicator of the efficiency of the industry concerned. The advanced countries had already introduced a wage payment system that suited their productivity formulae. But in India, in the absence of a National wage policy frame-work, wage fixation had become a complicated phenomenon and as a result, the purchasing power of the workers got eroded by the low level of the real wages.

Money wages merely express the wage amounts in terms of the currency while the real wages refer to the goods and services that a worker could buy with his money wages. Real wages were calculated by relating changes in money wages to changes in the consumer price index. Thus, real wages provide the real test as to whether a worker had been improving in his economic well being or not Table No.1.2 had

disclosed the money and the real wages of the workers along with the consumer price index for the workers in Indian Industries.

TABLE 1.2
MONEY AND REAL WAGES IN INDIAN INDUSTRIES

(in Rupees)

YEAR	MONEY WAGES	REAL WAGES	Consumer Price Index*
1981	11,196.00	10,160.00	110.2
1982	12,097.00	10,200.00	118.6
1983	12,554.00	10,350.00	121.3
1984	13,489.00	10,425.00	129.4
1985	14,503.00	10,610.00	136.7
1986	15,390.00	10,900.00	141.2
1987	16,216.00	11,115.00	145.9
1988	18,181.00	11,700.00	155.4
1989	19,783.00	11,990.00	165.0
1990	22,542.00	12,100.00	186.3
1991	25,755.00	12,750.00	202.0
1992	32,729.00	13,810.00	237.0
1993	42,119.00	16,714.00	252.0
1994	47,816.00	17,200.00	278.0
1995	56,206.00	18,350.00	306.3
1996	62,190.00	18,620.00	334.0
1997	67,912.00	18,970.00	358.0
1998	77,436.00	19,120.00	405.0
1999	82,552.00	19,470.00	424.0
2000	87,450.00	19,830.00	441.0
2001	91,490.00	19,976.00	458.0
2002	95,910.00	20,107.00	477.0
2003	1,00,271.00	20,216.00	496.0
2004	1,04,788.00	20,379.00	514.2
2005	1,09,408.00	20,412.00	536.0
% Change in	877.20	100.90	386.38

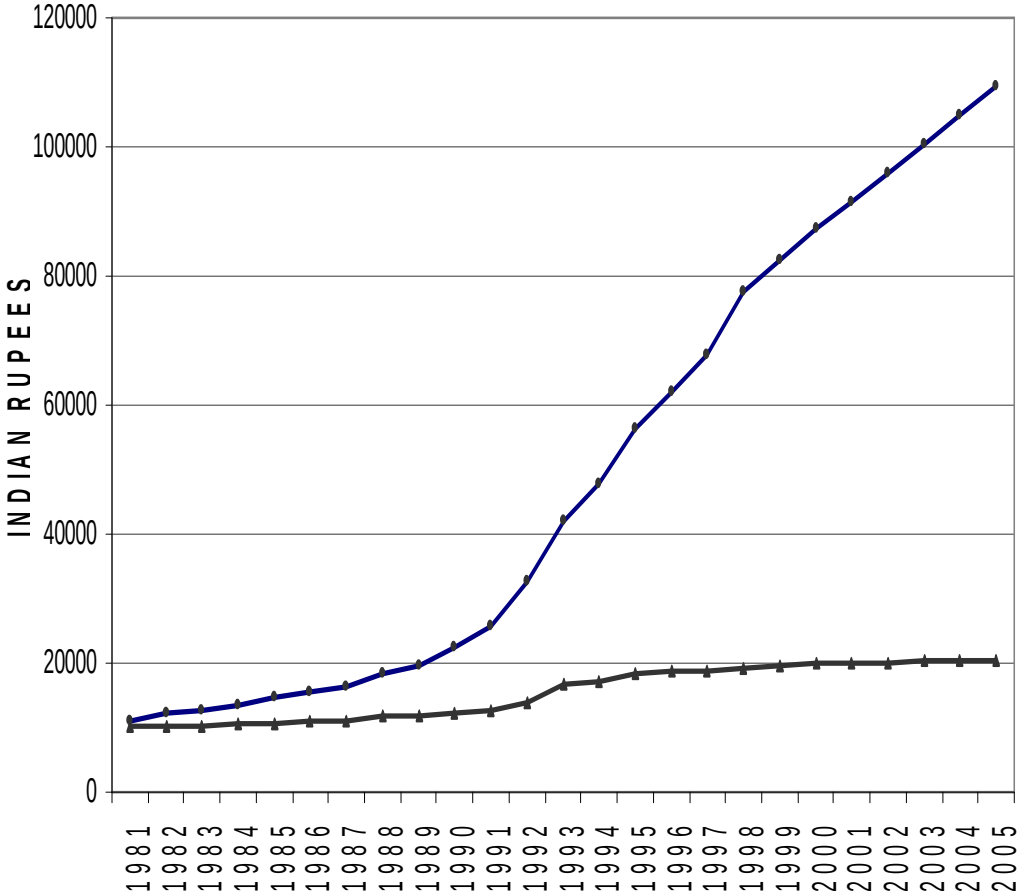
CGR Overall	11.65	3.74	7.63
CGR pre-reform	8.25	2.33	5.78
CGR post-reform	8.91	2.19	6.58

Source: Key Indicators–Labor Markets in Asia: Asian Development Bank, 2006.

* Consumer Price Index for Industrial workmen in India. (Base 1980=100)

Table 1.2 had disclosed that the money wages to industrial workers in India had gradually increased from 1981 to 1991 and had galloped up thereafter at a higher rate. While the percentage change in money wages for the overall period was 877.2, the percentage change for real wages was only 100.9 and for the consumer price index for industrial workers, it was 386.38. The compound growth rate for money wages for the overall period was 11.65 whereas it was 8.25 for the pre-reform period which had increased to the level of 8.91 for the post-reform period. On the contrary the compound growth rate for real wages for the entire overall period was 3.74 and it was 2.33 for the pre-reform period which had decreased to 2.19 in the post-reform period. On the whole, real wages shown a very meagre increase exhibiting almost a flat curve. This had been illustrated in Figure 1.1.

FIGURE 1.1
MONEY AND REAL WAGES OF INDUSTRIAL WORKMEN IN INDIA



Wage policy implied that there should be a norm for revising wage rate and there should be a well accepted social purpose for effecting changes in the wage rates or in the wage structure. However, wage structure depended on the size of the labor force and its trends, labor force participation rates, technology, trade unionism and the

support extended by the governments. These problems were common not only for India but also for all the countries in Asia.

The dilemma in declaring a wage policy was true in respect of most of the nations, such as India, which seek to achieve rapid economic development essentially through democratic means. The crux of the problem was that productivity should rise faster than prices as well as wages in order to bring about a more rapid expansion in investment, output and employment. The utmost that could be said was that increased productivity enlarged the possibility of paying higher wages. There was a need for developing the productivity culture and work consciousness in India in the interests of the workers the employers and that of the economy as a whole. If rising productivity was made a precondition for the payment of higher wages the laborers too might get benefited as that would control inflation and avoid the danger of the real wages getting eroded.

Thus, the Labor and wage policy of a country should be an integrated one as it had to achieve the objectives of maintaining the wage costs within manageable limits and safeguard the present economic requirements as well as the long term security needs of the employees so as to promote healthy industrial relationships. The response of the South Asian Countries to globalization had led to deliberate changes in the industrial relations scenario in these countries.

The deregulation of the labor market was one such change. Table1.3 had presented data on the labor force structure and on industrial relations indicators in ten selected Asian countries.

TABLE 1.3
LABOR FORCE STRUCTURES AND INDUSTRIAL RELATIONS INDICATORS IN TEN – ASIAN COUNTRIES

COUNTRIES		LABOR FORCE SIZE AND TRENDS - 2005		Labor force participation rate in %	Trade Union Membership (000s)
		Selected (in 000)	Annual Growth %		
1.	Bangladesh	68,026	2.40	52.80	1,721
2.	China	9,36,325	1.90	59.90	1,03,996
3.	**India**	**4,60,174***	**2.00**	**44.40**	**6,100***
4.	Indonesia	1,06,310	2.90	48.40	1,000
5.	Korea	24,072	2.30	51.10	1,615
6.	Philippines	34,126	2.60	42.20	3,587
7.	Pakistan	57,795	3.40	37.50	984
8.	Srilanka	9,354	2.80	43.90	1,640
9.	Thailand	37,119	2.70	60.60	416
10	Vietnam	44,027	4.60	51.50	NA

Note : The labor force participation rate is defined as the percentage of economically active children and adults in the 10 to 14 and 15 to 64 age groups respectively; the economically active population is being defined as : all persons of either sex who had furnished the supply of labor for the production of goods and services during the specified time – reference period.

Source : Compiled from ILO (2003a); DGBAS (2004) United Nations (2005) World Bank (2005a) as given in Labor Markets in Asia; Asia Development Bank, 2006.

The size of the labor force size in India which stands second among the countries of Asia was more than one half of China's labor force whereas all the other countries in this region, had only less than

one fourth of the size of the Indian labor force. India had been traditionally labor abundant, contributing more to the nation in respect of production of goods and services. At the same time, the annual growth rate of the labor force had been 2 percent while in the other countries the percentage growth had been higher except in China. Moreover, Indian trade union movement was a historical phenomenon and the trade union membership of 6100 thousand stands second only to that of China in among Asian countries. Recently, 'a conglomerate of workers' organizations had demanded for a National wage policy on mayday and had submitted a memorandum to the President of India in this regard[4].

1.2 STATEMENT OF THE PROBLEM

The organized sector in South Asia had accumulated a surplus of labour force over a period of years partly because of the fact that the public sector had regarded employment generation as a social responsibility and partly due to the fact that governments had undertaken to subsidise non-viable enterprises in order to prevent job losses. A study by Kelegama in 1995 had estimated that the average redundancy rate in eight selected state-owned enterprises in Sri Lanka was on the high side (50 per cent). A study in India had suggested that

[4] The Hindu, Wednesday, may2 ,2007,p5

more than 16 per cent of the employees in the organized sector were actually redundant[5]

Industrial disputes arise due to various reasons. Generally, issues related to wages and allowances, bonus payments, personnel, retrenchment, working hours, violence and indiscipline were the major factors for causing industrial disputes in India.

The Government is contemplating to bring forth a comprehensive National Wage Policy to confer more benefits to the working class according to a statement made by the Union Labor Minister M. Bindeshwar's Deubey in the Rajya Sabha.[6] Thus studies related to the issues connected with Labor and wages such as the present study had become very is pertinent.

INDUSTRIALIZATION

Industrialization has a major role to play in the economic development of a country. There is a positive relationship between per capita income and the share of the manufacturing industries in National Income. The gap in per capita income between the developed and the under developed countries was largely due to the disparities in the concentration of the industrial sector in those economics. The process

[5] A.Sivananthiran, Globalization and Labor Management Relations in South Asia, Labor Relations in South Asia, 2003.p75.

[6] Indian Express, Sunday, Aug.13, 1989, p.1.

of industrialization was associated with the development of the skills of the concerned industrial workers.

Indian industries had concentrated not only on the local demand but also on the export market. During the five year plans, Indian planners had given considerable importance to the development of the industrial sector.

The industrial transformation of an economy brings about a variety of far-reaching changes in the economy such as those of rapid urbanization, the emergence of industrial communities, complex structuring of industry and labor a quantitative growth in the workforce, the development of labor unions and the application of scientific management techniques to industries.

Most of the industrial workers had migrated from the villages to the cities in search permanent or even temporary employment opportunities. Industrial labor is mostly uneducated labor who were unaware of the problems facing them. Industrial labor in India is diversified on the basis of religion, language and caste. Absenteeism, indiscipline and the like were quite common among industrial labor in India. "The average rate of absenteeism is around 10 per cent in Indian Industries in the recent decade."[7]

[7] Labor Bureau, Government of India, Annual Survey of Industries, 2005.

Over a period of years, industrial laborers had organized themselves into trade unions. The demand for higher wages in the wake of a rising cost of living had often been backed by trade union actions. This had frequently led to sit – in strikes, sit-ins, gheraos, work-to-rule tacties and the like which had often led to prolonged industrial disputes. Wages have been and will continue to be the single major substantial issue respect of in industrial disputes.

The new technology had given an opportunity for the Indian industries to make use of an average worker who had limited skills previously, to become familiar with a new type of technology such as the computer controlled systems which were user-friendly in them operations. Further the traditional kind of labor involvement and the interaction in the work spot had been treated as one of the major variables to be eliminated from the industries to reduce labor costs, increase productivity and thus improve profitability. The new technology had brought about changes in the job content and responsibility, job displacements, redundancy and re-deployment, retraining, union co-operation and mutual agreements which had become extremely important in realizing the full benefits through the adoption of the new technology.

However, the adoption of a new technology required huge amount of initial capital for which the gestation period was also quite

long. Still, the fact remains that new technology was capable of selectively replacing the human element in performing the actual work.

Productivity is an index and an economic measure of efficiency with which human resources as a whole were utilized in the production process. Productivity at the departmental level, at the plant level and or at the job level would help us in evaluating the effectiveness of the various schemes of rationalization and scientific management. Productivity also serves as a guideline for the future planning of total production. "Issues like production and productivity are not the headaches of the management alone. Otherwise industry will collapse and job will be lost"[8]

Beyond a certain level, higher wages tend to bring about just the opposite results such as inflation, reduced production and shrinking markets due to reduced purchasing power in the hands of the wage earners and the like. Improvements in wages can result mainly from increased productivity. Increase in productivity does not necessarily involve installation of new machinery or greater exertion on the part of labor. Wage increases should result mainly from productivity increases so that inflation could be kept under control.

[8] Budda Deb Bhattacharya, Chief Minister of West Bengal, The Hindu, August 28, 2005, p.10.

"The important cause of lock out is the labor productivity that has failed to rise commensurate with the rise in wages". [9] The closing down of Hindustan Lever, Mafatlal Engineering and Bata Shoe factory in India had all been prompted by this factor. The individual firms had been seeking greater flexibility and the employers had been making impressive strides in achieving workplace flexibility whilst at the national and the industry level bargaining had been becoming weak.

"There has been growing interest in the use of wage incentives in the developing countries such as Malaysia, Singapore, India and Srilanka. India probably leads the way in the use of wage incentives as a method of increasing workers' productivity".[10] The wage incentive schemes were widely prevalent in the Indian industries under the piece rate system. Depending on the measurability of the individual's output, its coverage had differed from industry to industry.

Conversion of resources into goods and services could be made efficient, if the rewards for the factors of production concerned were properly given. Wage is universally acknowledged as an important variable. Wage determination in the major industries is left to the processes of collective bargaining, conciliation, arbitration and adjudication. In fact, "Analysis of data on industrial dispute shows that

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9 Ruddar Dutt and K.P.M. Sundaram (2001), "Indian Economy", S.Chand and Company Ltd. Ram Nagar, New Delhi, p.704.

10 G.K. Suri, "Methods of remuneration", works paper, International Labor Organization, Regional Seminar, Bangkok, October 18, November 6, 1971..

a sizable number of disputes relate to wage and wage structure".[11] Table 1.4 had disclosed the percentage shares of the various causes for industrial disputes during the period 1981 to 2005.

TABLE 1.4
INDUSTRIAL DISPUTES CLASSIFIED ACCORDING TO VARIOUS CAUSES

(in percentages)

Year	Wage & Allowance	Bonus	Personnel	Retren - chment	Leave &Work Hours	Indisci-pline & Violence	others	Un-known
1981	28.1	7.9	17.6	3.6	1.6	9.4	26.6	5.2
1982	29.9	5.8	18.9	2.9	1.6	11.7	26.4	2.8
1983	27.7	6.3	18.2	3.1	1.8	13.3	26.4	3.2
1984	26.5	7.2	16.1	2.6	1.9	13.4	27.4	4.9
1985	21.8	7.0	19.3	2.9	1.7	15.6	28.3	3.4
1986	24.3	9.1	18.4	3.8	1.2	14.3	23.5	5.4
1987	26.9	7.5	13.1	3.5	1.2	13.6	31.6	2.6
1988	27.4	6.7	13.1	3.3	1.0	15.3	30.6	2.6
1989	23.7	6.0	16.7	2.7	1.1	15.3	31.2	3.3
1990	24.2	3.9	12.9	2.9	1.2	15.6	36.4	2.9
1991	24.6	4.0	15.2	2.2	7.0	18.9	16.9	11.2
1992	23.0	1.2	15.2	8.4	14.2	9.0	14.2	14.8
1993	24.0	2.1	17.6	9.7	12.6	8.0	18.3	7.7
1994	22.0	3.4	19.5	10.2	13.5	9.7	16.1	5.6
1995	23.0	3.9	18.6	11.7	14.2	9.8	15.0	3.8
1996	24.3	8.23	18.26	0.93	1.8	18.18	24.2	4.03
2001	20.5	8.6	12.5	0.91	1.6	25.8	27.6	2.49
2003	20.1	7.8	13.7	0.9	1.3	24.3	27.1	4.8
2005	20.0	8.4	19.5	1.0	2.8	20.8	25.6	1.9

Industrial disputes on the basis of causes - converted into percentages

Source: Labor Bureau, Indian Labor Year Book 1999, Indian Economy, 2005 and India statistics 2006.

[11] C.V.S. Rao, "Productivity, Technology and Industrial Relations in the Textile Industry", Indian Journal of industrial Relations, Vol.25, No:2. October, 1989.p.150

As could be from Table 1.4 the major cause for the industrial disputes to occur upto the year 1996, had been 'Wage and allowances' which had compelled, employers to replace labor with capital. Traditionally, Indian Industries had been characterized by the low content of their capital and the wide and large use of manual labor. After the year 1996, there seemed to be a submissive control of the previous trend which had led to an increased percentage in the causes of other categories. In fact, trade unions and labor legislations were not able to fulfill the objectives of efficiency and equity. So the wage system often got disturbed due to great pressures, such as changes in the economic environment, industrial and labor policies, competition from other rival companies and even from factors outside the country. Thus changes in the money wage had played a significant role in raising the share of wages in the total output and in the value added in manufacturing industries.

Irrespective of the causes, if the industrial disputes were allowed to exist for a prolonged period it would result in either a strike call by the labor unions or a lockout unleashed by the employers. Both of them would necessarily be instrumental in damaging the congenial industrial atmosphere to a very large extent. Table 1.5 had presented the details about the number of industrial disputes due to Strike and lockouts.

TABLE 1.5
NUMBER OF INDUSTRIAL DISPUTES DUE TO STRIKES AND LOCKOUTS IN INDIA

Year	Strikes			Lockouts		
	Number	Number of workmen involved	Man days lost	Number	Number of workmen involved	Man days lost
1991	1278	872482	12428333	532	469540	13999759
1992	1011	767484	15132101	703	484741	16126643
1993	914	672024	5614515	479	281843	14686138
1994	808	626326	6651054	393	220103	14332028
1995	732	682595	5719961	334	307100	10569608
1996	763	608673	7817869	403	330631	12466934
1997	793	637480	6295365	512	343787	10676024
1998	665	800778	9349108	432	488145	12712876
1999	540	1099240	10625171	387	211455	16161685
2000	426	1044237	11958694	345	374062	16804427
2001	372	488596	5562765	302	199182	18204044
2002	295	900386	9665000	284	179048	16921382
2003	255	1010976	3205950	297	804969	27049961
2004	236	1900529	4891093	238	169167	19037630
2005	243	2111433	7286667	215	183750	15979034
Compound Growth Rate Per Annum	**-11.54**	**-5.78**	**-3.69**	**-6.03**	**-3.50**	**3.00**

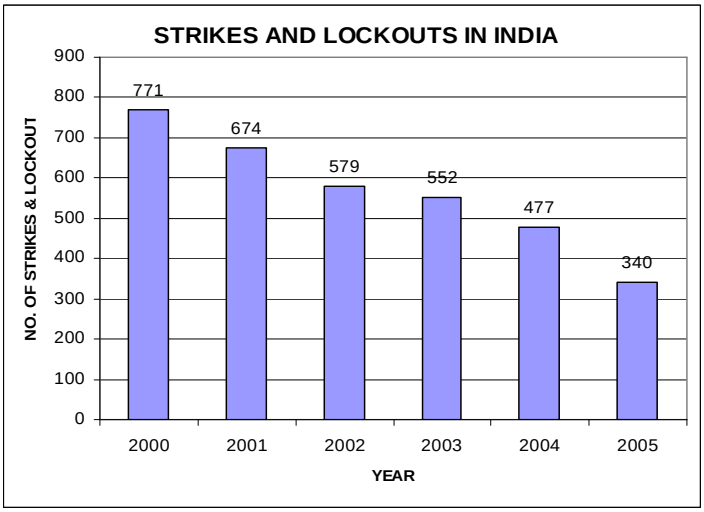
Source: India Statistics – Year Book 2006

The Table 1.5 had presented details related to the number of workers who had suffered due to strikes and lockouts and consequently the number of mandays lost during 1991 to 2005. The number of strikes was 1278 in the year 1991 which got considerably reduced to 243 in the year 2005. Likewise, the number of lockouts also got reduced from 532 in the year 1991 to 215 in the year 2005. However, in fortunately the number of workers involved in studies had increased from 8,72,482 in 1991 to 21,11,433 in 2005. The man days lost due to strikes got reduced from 1.24 crores in 1991 to 72.86 lakh in 2005.

The compound growth rates per annum for the number of strikes and for the number of lockouts were –11.54 per cent and –6.03 per cent respectively during the period under review. While the compound growth rate per annum for the number of workers involved in the strikes was 5.78 per cent, it was –3.50 per cent per annum for lockouts. However the compound growth rate for man days lost due to strike was – 3.69 per cent and for lockout it was positively 3.00 per cent per annum.

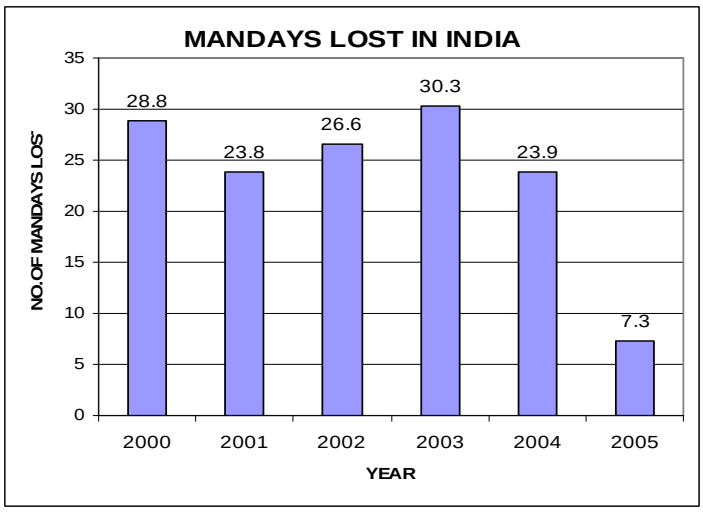
From the above analysis, it would be clear that the number of strikes and lockouts and the total number of man days lost resulting there from had drastically come down. The impact of Globalization might have been the major cause for such a state of affairs in the industrial scenario in India. Figures 1.2 and 1.3 illustrate the position more vividly.

Figure – 1.2



Source **:** The Hindu, Tuesday, February 28, 2006 P13.

Figure -1.3



Source: The Hindu, Tuesday, February 28, 2006 p13.

The labor policy of the country has the basic responsibility of working towards the creation of an atmosphere that would help and encourage the workers to put in the best of their performance and to contribute their mite towards the development of the economy. "The industrial wage structure in India consists of various components such as a basic wage, a dearness allowance, an annual statutory bonus, and a host of fringe benefits and incentives."[12] The structure of the wage in the system Indian Economy had undergone several changes over a period of years. The wage structure was influenced by the nature of the industry, the permanency of the workers, by collective bargaining, through Trade Union activities, the level of employment and the technology adoption in the industry concerned.

The major objectives of the New Industrial Policy package had been to build further on the gains already made, to correct the distortions or weaknesses that might have crept in, to maintain a sustained growth in productivity and promote gainful employment and make them attain international competitiveness. The pursuit of these objectives might get tampered due to the need to preserve a proper environment as well as to ensure an efficient use of the available scarce resources. All the various sectors of the industry whether small, medium or large, and belonging to the public, private or the co-

[12] A.M. Sarma(1988) "Understanding wage system" Himalaya Publishing House, 1988,p81.

operative sector should be encouraged to grow and improve upon their past performances. Naturally, the question arises, as to what the impact of the New Economic Policies on the management of labor and wages in the Indian industries.

All these issues had made the present Indian Industrial scenario a more complex one. A number of studies had been made relating to labor, wages, factor productivity and the consequent labor management relations at the macro level but covering only a limited number of industries. These studies had suggested various policy measures that could be adopted under the erstwhile economic conditions. However, these studies had not made any comprehensive recommendation for the changing global situation. In this context, the researcher had felt that it was necessary to have a broad based extensive study about a few selected Indian industries at the National level coupled with an in depth analysis of the industries at the District level in order to make concrete suggestions, particularly when a National policy on Labor, wages and on industrial relations is being contemplated. Hence, the present study had been undertaken by the researcher.

1.3 OBJECTIVES OF THE STUDY

The major objectives of the study are

1. To understand and analyse the trends in the employment of labor, wages and factor productivity in selected Indian industries.
2. To bring out and analyse the significant determinants of the wage structure prevailing in the selected Indian industries.
3. To analyse the perception of the employees of the sample units towards wage related factors.
4. To analyse the perception of the employers of the sample units on the operational issues of management of labor, wages and the related factors.
5. To offer suitable suggestions based on the findings for the improvement of the management of Labor and wages in the Indian Industries.

1.4 SCOPE OF THE STUDY

The wage payment system consists of the pay structures and the methods used to motivate and reward the labor force for their contribution to the goals of the organization. Various systems of wage payments had been developed in the different industries and in different countries. Among them, the most popular and widely prevalent systems of wage payments had been the piece-rate system and the time rate system.

The contribution of Industrial output to the National Income had been quite significant, especially in the developing countries like India, where workers are very particular about raising their monetary rewards through agitations and through all other possible means, utilizing their union strength to the fullest extent. The earlier studies conducted on labor, and wage and productivity nexus in the Indian Industries were based only on a limited number of industries. The present study had covered 146 industries selected at a three digit level (disaggregate) for a broader analysis of the problem during the period 1982-1983 to 2004-2005. Moreover, an in depth analysis of wage determination had been carried out for the two sets of industries in respect of piece rate and time rate in six industries in each group.

In order to find out the problem at the level of the industrial units, the present study had been carried out by collecting primary data from employees and employers at the level of the industrial units for the purpose of examining the level of employment, wage and productivity and their relationships on the floor situations. In this context, the present study has a greater significance in studying about the problems related to Industrial labor and wages in India.

1.5 METHODOLOGY

The present study is an empirical research study based on both primary and secondary data. The primary data were collected through two well structured questionnaires, one for the sample employee respondents and the other for the sample employer respondents. The draft questionnaires were first prepared and circulated among the officials of the Department of Labor, Government of Tamil Nadu, scholars and experts for their opinions and comments. Based on their suggestions the questionnaires were redrafted and then the same were pre-tested among thirty respondents selected at random. Necessary inclusions were incorporated and deletion were made before finalising the questionnaires. The secondary data were collected from the Annual Survey of Indian Industries, unpublished records available with the office of The Directorate of Labor and Industries, Government of Tamil Nadu, and from journals, newspapers various reports and the data year books.

1.6 SAMPLING DESIGN

In India, the states of West Bengal, Gujarat, Andhra Pradesh and Tamil Nadu were highly prone to the occurrence of Industrial disputes for many social and political reasons. Among them Tamil Nadu, being an industrially progressive state, happened to be the birth place for many renowned national level trade union leaders.

In the industrial map of Tamil Nadu, the Madurai district had occupied a predominant place as it was famous for some of India's traditional industries such as cotton textiles, leather, matches, chemicals and iron and steel, engineering and the like. To quote, "Madurai District had the most diversified industrial base since 1961"[13]. Further "the trade union movement has been started in this area as early as in nineteen thirties"[14]. There is a wide spread range of industries in this region and they have been represented by the industries selected for purposes of secondary data analysis. The industries had been chosen analyse the perceptions of the employees working in the various industries and also to understand the operational issues in the management of labor and wages and for this purpose the Madurai district was chosen for purposes of primary data collection. There were 1024 industrial units covered under the 200-389 National Industrial Classification (NIC) codes and about 48,813 employees were working in these unit at the time of conducting the field survey. Forty per cent of the employers and two per cent of the employees constituting a sample size of 205 and 976 respectively were chosen for collecting the primary data. The employer respondents were selected by using the Tippet's Random number Table from the list of employers obtained from the

[13] C.T. Kurien and Josef James, Economic Change in Tamilnadu, Allied Publishers Ltd, 1979, p.119.

[14] P. Chellathurai, "Working class movement in Tamilnadu- A Study on industrial relations" PP Publishers, Virudhunagar, 2004,p3.

Office of the Deputy Commissioner of Labor, Madurai, and the employee respondents were chosen on an average of four to five persons from each of the selected industrial units covering various cadres. For selecting employees the proportionate random sampling method was adopted. Five questionnaires received from the employers and 12 questionnaires received from the employees were found to be incomplete and inconsistent and hence were rejected. Ultimately 200 employer respondents and 964 employee respondents form had become the sample size. The details related to the sample respondents chosen from both the categories had been presented in the Table 1.6

TABLE 1.6
TOTAL NUMBER OF FACTORIES IN MADURAI DISTRICT AND SAMPLE SIZE OF THE EMPLOYEES AND EMPLOYERS

INDUSTRIES CLASSIFIED ACCORDING TO WAGE SYSTEM	NUM-BERS	SAMPLE RESPONDENTS	
		EMPLOYEES	EMPLOYERS
PIECE RATE			
1. Cotton Textiles	140	267	56
2. Leather	60	14	24
3. Matches	57	108	23
4.Beedi	46	87	18
5. Jute Spinning	7	13	3
6. Wool Spinning	2	4	1

TIME RATE			
7. Iron & Steel	61	116	27
8. Chemicals	48	92	19
9. Sugar	27	52	11
10. Cement	4	8	2
11. Tyres & tubes	42	80	17
12. Fertilizers	18	35	7
Total number of industries	**512**	**976**	**205**

Source: Unpublished Records from the Office of the Inspector of Factories, Madurai, Tamilnadu.

1.7 FRAME WORK OF ANALYSIS

Wage Rate

The wage rate was calculated by the ratio of real values of emoluments to the number of employees by deflating the series of emoluments at current prices by using the consumer price index for the industrial workers with the base period of 1980-81=100.

Capital Formation Index

Regarding capital measurement, the capital formation index had been used in this study. It could be obtained from the ratio of the gross fixed capital formation at current prices and by the current fixed capital formation at constant prices.

Capacity Utilization

Capacity utilization was measured as the actual output to the maximum possible output. The output in physical units had been calculated by the selected value of output at current prices divided by the prices of the respective products at current prices.

Factor Shares

The share of labor had been obtained by the ratio of selected emoluments to the gross value added. Assuming constant returns to scale, the share of the capital input had been calculated as one minus the share of labor.

Growth Rate

Growth rates had been calculated as percentages over the values of the previous period, that is, the growth rate of variable 'y' had been calculated as

$$g\ y_t = \frac{Y_t - Y_t}{Y_{t-1}}\ x\ 100$$

Labor Productivity

Productivity refers to the efficiency or the overall effectiveness of a productive unit. 'Labor' is one of the most important determinants of productivity. The 'human' element plays a vital role in increasing the

productive generating capacity, along with the optimum utilization of the resources and the minimizing of the occurrences industrial disputes.

Labor productivity is an outcome of the combination of a number of interrelated factors. It would therefore be difficult to isolate it and consider its role individually. However, for the purpose of this study, the ratio of the gross value added at constant prices per employee had been considered is defined as labor productivity.

Capital Productivity

The ratio of gross value added at constant prices per rupee of fixed capital employed had been is defined as capital productivity.

Total Factor Productivity

If different partial productivity indices move in opposite directions, then no definite conclusions could be drawn about the overall efficiency of an industry. In such a situation the selected factor productivity would help us to understand about the overall efficiency of the industry.

The ratio between the real output and the real factor input may be is defined as the selected factor productivity. The real factor input is measured as the weighted sum of the quantities of the different inputs. The various TFP measures found in the various text books differ mainly

on account of the differences in the assumed underlying production functions. The important indices of selected factor productivity could be listed as follows:

(1) Kendrik index

(2) Solow index

(3) CES index; and the

(4) Translog index (Divisia Index)

In the present section, an attempt had been made to compute and analyse the above four indices.

Kendrick Index

This index[15] is based on the assumption of a linear production function of the following form:

$$Y = aL + bk$$

where 'Y' is output, 'L' is the labor and K is capital employed and 'a' and 'b' are the parameters. Then, TFP growth index for the year 't' may get by using the formula

$$A_t = \frac{Y_t}{a_\circ L_t + b_\circ K_t}$$

Where a_o is the base year wage rate and b_o is the base year price of capital services.

[15] Kendrick, J.W., Productivity Trends in United States, NBER, Princeton University Press, Princeton, 1961, P.8

Under the assumptions of constant returns to scale and payment to factors according to their marginal product, the selected earning of capital and labor in the base year would be exactly equal to the output of that year. The main defect of this measure is that it is based on a linear production function and it fails to allow for the possible diminishing marginal productivity of the factors.

Solow Index (A_t)

This index[16] is based on the Cobb-Douglas Production Function. The following formula has been obtained for calculating the Solow Index.

$$\frac{\bar{A}}{A} = \frac{\bar{Y}}{Y}\left[(1-\beta)\frac{\bar{L}}{L} + \beta\frac{\bar{K}}{K}\right]$$

Where Y denotes output, L labor, K capital and β the income share of the capital employed. The Bar stands for the time derivatives. From the above equation the discrete form could be obtained as

$$\frac{\Delta A}{A} = \left[\frac{\Delta Y}{Y}(1-\beta)\frac{\Delta L}{L} + \beta\frac{\Delta K}{K}\right]$$

The Solow Index is obtained using the following identity taking Ao as unity $\left[A_{(t+1)} = A_t\ 1 + \frac{\Delta A}{A}\right]$

[16] R.M. Solow, "Technical Change and the Aggregate Production Function", Review of Economic and Statistics, 1957 pp.312-327

Divisia Index - Translog Index

The translog index[17] of a technological change is based on Transcendental logarithmic (Translog) Production Function, characterized by constant returns to scale.

$$\text{Log } Y = \alpha_0 + \alpha_L (\log L) + \alpha_K (\log K) + \alpha_1 t + \tfrac{1}{2} \beta_{LL} (\log L)^2 + \tfrac{1}{2}\beta_{KK}(\log K)^2 + \beta_{LK} (\log L)(\log K) + \beta_{Lt} (\log L)t + \beta_{Kt} (\log K)t + \tfrac{1}{2}\beta_{tt} t^2$$

Where,

Y is Output, K is Capital, L is Labor input, and αs and βs are the parameters to be estimated.

Assuming conditions of competitive equilibrium, the Translog Production Function counld used to derive the translog measure of the Selected Factor Productivity Growth (TFPG) which is a discrete approximation of the Divisia Index. The translog measure of TFPG is given by

$$\Delta \log \text{TFPG} = \Delta \log Y(t) - S_t \, \Delta \log L(t) - (1 - S_t) \, \Delta \log K(t)$$

Where S and (1-S) are the shares of 'labor' and 'capital' in the total value added and they are computed as

[17] L.R. Christensem, D.W. Jorgenson and Lau, L.J. "Transcendental Logarithmic Production Frontiers" Review of Economics and Statistics, Feb 1973, PP 213-227

$$S = \frac{(S_t - S_t - 1)}{2} \text{ and } (1 - S_t) = \frac{(1 - S_t) - (1 - S_t - 1)}{2}$$

The main advantage of using these functions is the fast that allow variations elasticity of substitution and does not require the assumption of Hicksian neutrality.

In the present study, the Translog index had been used for measuring the TFP. The advantage of this index is that it allows the elasticity of substitution between the inputs to vary with the levels variations in the of inputs.

For data obtainable at yearly intervals (discrete point of time), the most commonly used discrete approximation to the divisia indix[18] is given by

$$TFPG = (\ln Q_t - \ln Q_{t-1}) = .5\ \Sigma(Si_t + Si_{t-1}) \ln (Xi_t)\ Xi_{t-1})$$

Where 'Q' denotes output, 'Xi'$_t$ denotes the quantity of the i^{th} input for the year 't' and S_{it} is the share of input 't' in the output for the year 't'.

[18] Leo Torquist (1936), "The Bank of Finland's Consumption Price Index", Bank of Finland monthly Bulletin, No.10, pp.1-8.

Capital Output Ratio

The concept of capital output ratio expresses the relationship between the value of the capital investment and the value of the output. It refers to the amount of capital required in order to produce one unit of output.

Productivity growth had been a major contributing factor in the overall growth of the industry. The productivity of capital depends upon many factors such as the availability of resources, the amount of capital investment, involved the degree and the nature of the technological advancement made, the efficiency of the labor, the quality of managerial and organizational skill and the existence and extent of the utilization of the economic overheads.

In this context, an effort had been made to show as to how much of fixed capital was required to produce one rupee worth of output.

For estimating the capital output ratio, the gross fixed capital stock at constant prices had been used as a measure of the capital input involved. The working capital had not been taken into consideration.

The capital output ratio indicates the relationship between the existing stock of capital and the resultant flow of the current output.

$$COR = \frac{\text{Fixed Capital Stock at Constant Prices}}{\text{Volume of Production at Constant Prices}}$$

Capital Intensity

Capital intensity had been defined as the ratio of gross fixed capital stock at constant prices to the number of employees. That is gross fixed capital per unit of labor had been defined as the capital intensity.

Wage Differentials

Wage differentials refer to the wage differences which exist between different occupations and among different individuals in the same occupation.

Correlation

Correlation coefficients between the selected variables such as employment and wages, fixed capital and output, fixed capital and employment had been worked out for the selected industries.

Chi-Square Test

The Chi-Square Test is an important non-parametric test and as such no rigid assumptions were necessary in respect of the type of population that is considered. The Chi-Square Test in the present study had been used as a test of independence. $\lambda^2 = \sum \frac{(O-E)^2}{E}$

Where λ^2 = Chi-Square value

O – Observed frequency

E – Expected frequency

The Chi-square value was compared with the 'Table' value to find out the association between the variables in the nominal scale. In the present study it is used to find out the association between the profile of the employees and their view on important aspects in wage administration.

t-test

The 't' test has been administered to find out the significant difference between two means when the collected data is in interval scale. The't' statistic is calculated by

$$t = \frac{\overline{X}_2 - \overline{X}_2}{\sqrt{\frac{(n_2 - 1)\sigma s_1^2 + (n_2 - 1)\sigma s_2^2}{} x \sqrt{\frac{1}{n_2} + \frac{1}{n_2}}}}$$

where t – 't' statistic

X_1 - mean of the first sample

X_2 - mean of the second sample

σS_1 - variance in the first sample

σS_2 - variance in the second sample

n_1 - Number of samples in first group

n_2 - Number of samples in second group.

In the present study, the 't' test had been administered to find out whether there had been significant differences between male and female workers, workers getting wages according to piece and time rate system; and the group I and the group II employers regarding various aspects of wage payments wage administration, labor management relations, perceptions about the trends in the industry, factors influencing fixation of wages and problems encountered in respect of wage administration.

One way ANOVA

The analysis of variance technique had been applied in the present study when the criterion variables were in the interval scale and the number of groups of the samples consisted of more than 2 groups. In order to find out the significance of the differences among the samples regarding a particular Criterion variable, the 'F' statistics was calculated through the ANOVA

$$Fratio = \frac{Variancebetweengroups}{Variancewithingroups}$$ Compared with the respective 'Table' value of 'F'.

In the present study, it had been used to find out the association between the profile of the employees and, of the employers and their perceptions on various aspects related to wages and wage administration issues.

Index Preparation

The index regarding various aspects related to wages and wage administration had been prepared by using the formula.

$$I = \frac{\sum_{i=1}^{n} S_i}{\sum_{i=1}^{n} MS_i} x100$$

Where

I = Index

S = Score of the variables

MS = Maximum Score of the variables

i = 1…….n = the number of variables included to generate the index. In the present study, the attitude indices had been evolved among employers and employees in order to sum up the views of their attitude on work, wage and wage administration.

Regression

The multiple regressions had been computed taking into account the real wage rate as the dependent variable on the one hand and labor productivity, capital intensity, employment and wage shares of value added as the independent variables on the other. For an in depth study, six industries adopting a high percentage of payment of images under the piece rate system and a similar number of industries adopting a

high percentage of the total wages paid under the time rate system were chosen. Altogether for the entire 12 industries chosen data were collected for the pre reform period, for the post reform period and for the entire over all period. Depending upon the measurability of the individuals' output, the wage payments had varied from industry to industry. In cotton textiles, matches, leather, beedi, jute and the wool spinning industries the piece rate wage system was widely prevalent; where as the highest percentage of time wage was paid in the Iron and steel, chemicals, sugar, cement, tyres and tubes and fertilizers industries."[19]

The Multiple regression analysis was used to find out the impact of the independent variables on the dependent variables, when both the variables were in internal scale. Even though, the forms of the regression functions were too many, the present study had chosen to administer only the linear regression model. The fitted regression equation is

$Y = a + b_1x_1 + \ldots\ldots\ldots\ldots + b_nx_n + e$

Where Y- was the dependent variable

$X_1. \ldots\ldots X_n$- were the Independent variables.

[19] Suri, G.K. "Wage incentives : Theory and Practice, Shri Ram Centre for Industrial Relations and Human Resources, New Dlhi-5.p.38

b_1……b_n – were the Regression Coefficients of independent variables

a – was the Intercept and

e – denoted the error terms.

In the present study, the multiple regressions analysis technique had been adopted to find out the impact of the employee, employer's attitude on various aspects related to work, wages, and wage administration and on their respective overall attitudes towards the industry.

Factor analysis

The multivariate statistical technique of factor analysis had wide applications in various business and psychology related research studies. Factor analysis is a generic name given to a class of multivariate statistical methods whose primary function was data reduction and summarisation. It is also referred to as the narrative analysis. In the present study, the factor analysis technique had been administered to narrate the variables related to wage, wage administration, work, work place, problems encountered and wage determinants and others.

Discriminant analysis (Two group model)

The discriminant analysis had been used to identify the important discriminant factors among the two groups. It was applied

when the included independent variable was in nominal scale. The unstandardised canonical discriminant function was estimated by

$Z = a + b_1x_1+b_2x_2 + ……..+b_nx_n$

Whereas Z- was the Discriminant Criterion

X1……..xn – were the Discriminant Variables

$b_1……b_n$ – weer the Discriminant Coefficient

The wilks Lambda was calculated as a multi-variant measure of difference over the discriminating variables. The relative discriminating power of the variables was calculated by

$$I_j = K_j(\overline{X}_{j1} - \overline{X}_{j2})$$

Where I_j = the important value of the jth variable

Kj = Unstandardised discriminant coefficient of the jth variable

X_{jk} = mean of the j^{th} variable for K^{th} group

The relative importance of a variable R_j is given by

$$R_j = \frac{I_j}{\sum_{j=1}^{n} I_j}$$

In the present study, the discriminant analysis had been carried out to identify the discriminate factors among the male and female employees, employees belonging to piece and the time rate systems .

1.8 PERIOD OF STUDY

Secondary data were collected for the period commencing from 1982 onwards in order to compare the performance of the industries at the All India level. Since the New Industrial Policy had been introduced in India in the year 1991, the period between 1982 to 1991 was taken as the pre-reform period of the period from 1991 to 2005 was considered of the post-reform period. In addition, an opinion survey was also conducted among the chosen sample employers and employees during the period September 2004 to April 2006.

1.9 LIMITATIONS OF THE STUDY

The present study is based on the secondary data collected from various sources such as the Annual Survey of Industries,. Labor bureau. Shimla and from Macro Economic Data sources. The data collected from these sources had been compiled by the organizations based on the objectives of the respective organization and hence there was likely to be slight deviations in the presentations of their facts and figures. Similarly the primary data collected from the employees and the employers of the selected regions might have been subject to slight variations depending upon the degree of unionization in the respective industries. Therefore, any generalization based on the findings of the present study should be made very carefully.

1.10 CHAPTER CLASSIFICATION

The present study entitled, Indian Industries" had been presented in six chapters.

The first chapter entitled "Introduction" includes a brief introduction to the background of the theme of the study, the statement of the problem, the objectives of the study, the scope of the study, the methodology adoption sampling design, a frame work of analysis, the period of the study, the limitations of the study and chapter classification.

Chapter II contains an elaborate review of the previous studies undertaken in respect of the related topics and the operational definitions of the various concepts used in the present study.

Chapter III is has been devoted to present the trends in the employment of labor, wages and factor productivity of the selected industries at the All India level.

Chapter IV encompasses a statistical analysis of the perceptions of the employees of the sample industrial units towards wage related factors.

Chapter V deals with the perception of the employers of the sample industrial units on operational issues in the management of labor and wages in the sample industrial units and the problems that had been confronted by the employers.

Chapter VI entitled "Summary of findings, Suggestions and Conclusion" epitomises the major findings of the study, pointing out the policy implications and the scope for future research in the related areas.

CHAPTER – II

REVIEW OF LITERATURE AND OPERATIONAL DEFENITIONS OF THE CONCEPTS

2.1 Introduction

Extensive review of previous studies will help to understand the research gap which requires an in depth analysis. In this chapter an attempt has been made to present a brief account on various studies previously made connected to the topic selected. In order to understand the meaning of different concepts and terminologies used for the study, operational definitions of those concepts have also been presented.

2.2 Review of Literature

Panchanan Das[20] (2007) attempted to explore the role manufacturing output growth has had on overall economic growth and on employment growth in manufacturing industries in India in the pre- and post deregulation phases of the country. This study tried to shed new light on differences in regional pattern of growth in India over the period 1970-71 to 2002-03. It focused on two states, namely West Bengal and Gujarat experiencing different types of growth. It was concluded

[20] Panchanan Das, "Economic Reforms, Output and Employment Growth in Manufacturing", Economic and Political Weekly, September 29, 2007, p3978-3985

that the rate of manufacturing growth as of overall economic growth has increased after the mid-1980s compared to the earlier period. The recent growth in India has been by the explosion of information technology. Moreover, the incidence of labour displacement in the process of industrial growth is stronger in the industrially advanced states.

Kaldor observed a highly significant relationship suggesting that output growth played a major role in determining productivity growth and also employment growth in the manufacturing sector. But in this study it was identified that higher rate of growth of manufacturing output leads to higher rates of productivity growth, but not to a faster rate of growth of manufacturing employment.

VK. Reddy and IRS. Sarma[21] (2006) analyzed the productivity trends of 14 major states and all India textile Industry for pre and post liberalization periods using Divisia total factor productivity index. The present study is based on the secondary data and covers the period from 1979-80 to 2000-2001. Textile and Manufacture of textile products industries have been selected for 14 major states and for All India with proper concardination of National Industrial classification (NIC) 1987 and 1998 codes. It was concluded that in most of the states, the TFP growth rates are relativity lower and negative in pre-liberalization

21 VK. Reddy and IRS. Sarma, Productivity in India Textile Industry: Trends and Determinants, The ICFAI Journal of Applied Economics, Vol. V. No: 1 January 2006

period. This study identified the factors that have influenced the productivity. The export intensity variable is positively significant for textiles whereas negatively significant in case of manufacture of textile products in India. The relative degree of concentration (output / No. of factories) is positive and it is a significant factor contributing to productivity in all the states.

K.R. Prasad, R. Prabakar Rao and V. Pandit[22] (2006) This paper attempted to reconcile both the conventional Cobb-Douglas (CD) and Trans log (TL) production functions, and brings about a comparison between conventional versus modified or augmented production function of three major Indian manufacturing industries such as textiles, cement and pharmaceuticals. Cross section data for the years 1993-1994 and 2001-2002 to identify the changes in the production technology over the new policy regime were used.

The selection of firm was done at random and the number of firm in textile was 40, in cement it was 48 and pharmaceuticals the same was 50. Material input and energy along with conventional labor and capital were used. Expenditure on wages and salaries is taken as a proxy for labor, the gross fixed assets for capital, the expenditure on raw materials for material input and expenditure on fuel and water for

22 K.R. Prasad, R. Prabakar Rao and V. Pandit, Some aspects of manufacturing technology in three select industries of India. ICFAI Journal of Industrial Economics, Vol. III No.2 ,May 2006

energy were considered. Gross value added has been taken as the dependent variable. The study concluded that all the variables used in the study exhibit significant nonlinearities and also interaction among them. Additional explanatory variables might not be individually statistically significant while their interaction terms are statistically significant. This highlights the importance of interactions among explanatory variables in explaining the output of manufacturing sector.

Badri Narayanan Rath (2005)[23] tried to identify various determinants of Labour Productivity using a panel data analysis for 15 major states of India over the period 1979-80 to 2000-01. the evidence shows that labour productivity is largely determined by capital intensity, firm size, skilled manpower, capacity utilization and real wage rate.

It was concluded that the positive impact of capital intensity on labour productivity signifies the degree of mechanization. The wage rate has a positive impact on labour productivity, which acts as a powerful incentive for the labour to contribute greater efforts and skills. In this, states with higher labour productivity range have strong financial strength to offer better wages and finally it leads to better standard of living of the workers. Capacity utilization of the industry

[23] Badri Narayanan Rath(2005) Labour Productivity determinants in Indian Manufacturing: A Panel Data Analysis Indian Journal of Labour Economics Vol 49 No. 1 2006

has a significant positive effect on labour productivity, which implies that given input resources have been used at the optimum level.

Sanjay Fuloria[24] (2005) estimated production using the data on the companies in the Indian Manufacturing Industry. He assessed whether the top 50 Indian manufacturing companies are different in productivity than small manufacturing companies, private foreign companies, privately held Indian companies, NRI held companies and foreign group companies in the manufacturing sector. The results indicated that in the NRI held companies and Foreign Group Companies the labor variable is statistically insignificant showing that such companies are largely automated, thus reducing the need for labor. The study employs multiple regression with the assumption of Cobb – Douglas Production Function that has been used to test the hypothesis that different categories of manufacturing companies have the same productivity trend.

Data were collected from Centre for Monitoring Indian Economy (CMIE). To find elasticities of inputs to the products, Cobb-Douglas function was used. In addition, Durbin – Watson test has been used to test for auto correction.

[24] Sanjay Fuloria, Indian Manufacturing Industry: An Analysis using Cobb – Donglas Production Function –. Research Scholar – ICFAI Institute of management Teachers Hyderabad, ICFAI – Journal of Operations Management, Vol. IV. No: 3 August 2005 ICFAI University Press, Hyderabad-82. P-6

It was concluded that the productivity is greatly influenced by Capital, labour and Materials. The co-efficient of labor variable has a negative sign showing that there is a situation of disguised unemployment. This means that in companies the amount of labor is more than required.

One important impact of this study is that in the manufacturing sector, the share of labor in value added should be increased substantially if we are to compete globally. This does not mean that the labor force should be increased just for the sake of increasing which would lead to the problem of disguised unemployment.

Saon Roy (2005)[25] studies the liberalization process in the Indian Economy that has thrown up many challenges. The study investigates the efficiency of firms during the period 1991 to 2001, using the concept of frontier production functions. Estimates of inefficiency have been obtained for 23 industry groups using the capital in a Ole database for three years 1991, 1995, 2001. It was found that the variables relating to external competition and technology flow from outside such as royalty payments, exports and import of raw materials have become significant in the year 2001 which was not the case in the year 1991. Given the relative importance of foreign technology diffusion in India taking into

[25] Working Paper Series No: E/261/2005 The changing role of Technological factors in explaining efficiency in Indian Firms.Institute of Economic Growth University of Delhi Enclave, North Campus, Delhi- 110 007. India.

account all the channels of such transfers. This would be the direction of future research into this area.

Mukesh Kumar and Partha Basu[26] (2004) This study was made with Data Envelop Analysis (DEA) technique to analyze the productivity growth of some important Sunrise Industries in India during the transition period. To identify the major source of productivity change in these industries, the malmquist productivity index is decomposed into its different components such as Technological change, Technical Efficiency change and Scale efficiency change under the assumption of variable returns to scale. Relevant data from Annual Survey of Industries (ASI), National Accounts Statistics (NAS) of wholesale prices in India, a monthly publication Government of India, were used.

The total factor productivity growth was calculated for Sunrise Industries in India over the period 1977-78 to 1992-93 and it was concluded the contributes of Total Factor Productivity (TFP) to output growth is less than 1/3 relative to the contribution of the physical inputs. On an average, Technical Efficiency (TE) change as well as Scale Efficiency change resulted in loss in productivity change. The higher

[26] MuKesh Kumar and Partha Basu, Technological change, Efficiency change, Scale change and change in Total Factor Productivity in Indian Sunrise Industries: A Data Envelopment Analysis, The ICFAI Journal of Industrial Economics, Vol. 1. No: 4. November 2004.

technological progress has always been accompanied by loss in efficiency by most of the industries.

Jyoti and A.S. Sidhu,[27] (2004) studied the Industrial conflict between management and labour is a universal phenomenon in both the developing and developed countries. Strike is one of the most common manifestations of industrial conflict. Strike is the most important weapon in the armory of workers. Although it is not possible to eliminate the problem of strikes, yet it can be contained.

The purpose of the study is to find whether any significant relationship exists between workers proneness towards strikes and their socio – economic and psychological factors. It is based on primary data only. The workers of textile industry of Punjab, who had participated in any strike during the last five years (1996-2001), were interviewed. A sample of 300 workers was drawn for the study. A structured interview schedule was prepared consisting of close ended statements and respondents were asked to give their opinion. Discriminate analysis has been used to answer the question why strike proneness is higher in one group as compared to others.

The analysis has shown that only two variables out of thirteen variables are significant in predicting the profile of strike prone workers. No demographic variable except membership of union has

[27] Jyoti and A.S. Sidhu. Workers Proneness to Strikes: An Application of discriminant Analysis. Indian Journal of Industrial Relations Vol. 40 No. 1 July 2004

emerged as a significant variable in differentiating between the profiles of two levels of workers. Moreover, perception of workers about strike as an instrument of awareness has also emerged as a significant variable differentiating between the profiles of two levels of workers.

It can be said that the difference between profile of more and less prone to strike workers are influenced both by demographic and psychological factors. But the most important factors which differentiate between workers with two levels of proneness is the membership of union. Raising the education level of workers will force them to view the other side of the coin also and union in that case can not play the foul games for their own benefits. In such circumstances, a worker need not work for group support to resolve his/her grievances. If this is done, the condition would be there for a committed, and less prone to strike workforce.

Tirthakar Roy (2004)[28] studied the social costs of reform with which many firms have closed down or been forced to reduce the member of workers. There has been job-loss due to reforms. Secondly, there has been a subtle but decisive change in the politics of labor. While formally employment practices in the organized sector continue to be bound by rigid laws, many firms have shed labor via voluntary retirement. In was concluded that there were closures and industrial

[28] Tirthankar Roy,"Social Costs of Reforms: A Stud of Job Loss with Special Reference to Declining Industries in 1990-98" – 2004

decline in section of the organized sector. Real location of labor, within the organized sector between industries and between organized and unorganized sectors. This process has also been called casualization and informalization, and feminization in some contexts. Moreover, a process of general reduction in pay, or growth of pay, welfare and job-security as a result of these processes. Finally, a process of general disempowerment of labour, or a loss of strength of trade unions to resist these processes.

According to Enresto Noronha[29], (2003) the economic environment has become far harsher and global competition has put new pressures on national industrial regimes. The erosion of trade union power has run alongside the build up of power on the side of transnational corporations. Indian management has today introduced flexibility by restructuring of companies, barring recruitment of permanent category employees, shutting of units or departments, transferring of jobs from bargainable categories, introducing functional flexibility, intensifying the working day through pressure to increase productivity. Opening parallel plants, employing contract workers and subcontracting out production are also taking place.

Threat of industrial closures has forced unions to give up or curb gains and accept job loss. Norms related to work load have also gone

[29] Enresto Noronha, Indian Trade Unions: Today and Beyond Tomorrow, Changing World Economy and Labour: India Journal of Industrial Relations, Vol.39. No.1, July 2003 P95

up. Wage freeze and cuts in minimum wages are introduced. The unions also promise that they will not tolerate any misconduct on the part of the workers.

Jyoti and A.S. Sidhu[30] (2003) in their study entitled "Industrial Disputes in Punjab-Emerging Trends" found changes in the industrial relations scenario in Punjab. The study covers a period of 20 years from 1982 to 2003. The 20 year period has been carried out by dividing it into two parts and over all period combined. The pre-form period 1982-1991 (termed as period I) and post-reform period from 1991-2003 (termed as period II) and over all period from 1982-2003 (termed as period III). The data for the study have been taken from the various issues of Annual Survey of Industries (ASI), office of the Assistant Commissioner of Labor, office of the Inspector of Factories and also from the sample units.

The study found that the number of work stoppages has been reduced in the post- reform period in Punjab. Furthermore, due to the inefficiency of conciliation machinery in discharging its' function, the workload of adjudication machinery has increased. The study concludes that economic restructuring has resulted in the shift of balance of power in favor of employers. Lockouts are being used as a

[30] Jyoti and A.S. Sidhu, Industrial Disputes in Punjab: Emerging Trends, Indian Journal of Industrial Relations ,Vol. 39 No.1, July 2003

powerful weapon to counter the increasing organized power of workers in the post-reform period in Punjab.

Shuji Uchikawa (2003)[31] examined the reasons of economic growth without increase of employment and why employment distribution shifts in favor of medium scale units. The reason for the sharp decline of employment elasticity in the manufacturing organized sector during the 1980s was to a strategy of capital deepening pursued by firms, Economic Liberalization forced domestic companies to introduce more capital-intensive technology to meet needs from the market.

It was found that rapid increase of wages encouraged modernization and pure substitution of capital for labor to survive competition. Negative growth of man-days pushed up capital-man-days ratio. Moreover, job security regulation affected growth of employment. Although many workers were retrenched by closure of units and voluntary retirement scheme, redeployment of workers is constrained by lack of large-scale training facilities and poor adoptability among the old workers.

[31] Shuji Uchikawa,"Employment in the Manufacturing organized sector in India: The rise of Medium Scale Units", 2005.

Manorajan dhal and Kailash Srivastava,[32] (2002) in their study entitled "On trade unionism" observed that organizations are adopting a number of innovative strategies such as restructuring, delaying, diversification, quality and technology up gradation to survive and compete in an open market economy. Skilled workers have succeeded to bargain the terms and conditions of employment with the management with out the help of unions, but semiskilled as well as unskilled workers still look at the union of fulfill their demands.

The study is an attempt on the attitudes of Workers, Managers and Leaders as various dimensions of trade unionism and explore the relationships among the various dimensions of trade unionism. It also aimed to examine the difference across age, unions with different political links and literacy with the dimensions of trade unionism and find at predictors of union membership, leadership effectiveness, union success, and union-management relationship.

Regarding the methodology, Data consisted of 102 workers, 51 managers and 50 union official leaders, from South Eastern Railway, Kharagpur, though a structured interview schedule. Data were analyzed using multiple regression analysis to explore new various

[32] Manorajan dhal and Kailash Srivastava, Trade Unionism: Perceptions and Attitudes of workers, managers and leaders, India Journal of Industrial Relations vol.38 no.2, october 2002 pp.177-198

dimensions predict union membership, union management relations, leadership effectiveness and success of union.

The following results have been obtained from the study. The attitudes of workers and seven diversions namely, Membership, Function of Union, Participation of members, Union leadership, Political affiliation, Multiplicity and union rivalry and Management attitude towards works. The majority of workers wanted unions, thinking that these would improve their socio-economic situation. Workers were satisfied with the approach of management towards, the union. The study suggested that the management should lay emphasis on welfare mechanisms, grievance settlement machinery and communication system.

Managers also admitted that the prevailing working conditions were not sufficient to take care of the grievances, welfare aspects, and promotions of the employees. Union management relationship in the organization was found to be satisfactory showing the managerial concern in fulfilling the demands of workers. Management had taken adequate welfare measures, and gave ample opportunities to union leaders to express their view points.

According to D.K. Srivastava[33] (2001), trade unions in India at present are under great dilemma. After a reasonably comfortable situation, trade unions have been suddenly put to cross roads. Many individual unions have taken steps to prepare themselves for the developing situation. Technologies displace jobs and yet enable the workers affected to bargain for higher wages. Unions resist closure of sick units but can hardly defend their being worked as losing enterprises. Unions favour the growth of small industry but do not like work of large units being contracted out of ancillary small scale units.

It was concluded that the debate regarding union – membership density has lost its relevance for several reasons. In spite of constant increase in per capita income of unions the financial conditions of unions contributed to the pitiable. The loss of positive image of unions among sections of the general population is due to many reasons.

Hrushikesh Panda[34] (2001),stated that the manufacturing sector plays an important role as the prime mover of growth of the Economy. World bank (1989) has stated that the decline in employment resulted from an increase in product wages, though, it was argued that this was mainly attributed to job security provided by government.

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33 D.K. Srivastava, Trade Union situation in India! Views of Central Trade Union Organisations (CTUO), India Journal of Industrial Relations, Vol.36 No.4. April 2001 P 463.

34 Hrushikesh Panda, Technology, Factor substitution and Employment generation at the Firm level. A case of Automobile industry in India, The Indian Journal of Labour Economics. Vol.44. No.2. 2001.

They state that an increase in the wage rate per hour of work. There was an increase in the total number of persons employed by industry. Indifferent industries have entered in to foreign collaboration to bring about changes in product and process technology through technical tie-ups with foreign firms and imports of capital goods from abroad thus the on set of liberalization there was a shift in technology.

The model of the study is presented with the labor and other factors of production, materials and capital, are used to produce for a given level of output. Capital or materials are treated as complementary to labor. As labor is a substitute to these factors, consequently there will be a decline in its employment. The important factors affecting the level of employment of a firm would be the level of output, changes in the product and inputs prices and the degree and nature of technical progress. The output, material price, rental price, wage rates, total factor productivity, which are important variables show a shift in technology brought about the firms after liberalization.

It was concluded that, at the aggregate level for of the six firms experienced a decline in the rate of growth of employment after liberalization. Changes in vertical – integration adjusted output and the ratio of wage rate to product price (product wage) were the two most important variables affecting growth of employment during both the regulated and the liberalized period.

The shift in technology after liberalization did not bring about a change in the employment generating capacity of firms in the (Car segment). For firms in these segments, there was no time lag in this adjustment to long-run equilibrium level of employment during the period of liberalization.

Purushottam Sharma, B (2000)[35] attempted to study the Role of Government in Industrial Relation in Nepal with the Objectives of the study are to review different patterns of industrial relation system, to evaluate the role of government in the settlement of industrial disputes and to examine how collective bargaining is functioning in Nepal.

The study period covered a period from 1995 to 1998 with intermittent intervals (34 months). The data Base was based on Primary Sources – the labor and management representatives who were interviewed from the list of data supplied by labor offices at Katmandu, Butwal, Birgunj and Biratnesa. Total of 369 representatives participate in conciliation session in the sampled labor offices, of which 252 were workers and 117 were management representatives. 58 pre cent of workers and 67 per cent of Management representatives were also interviewed. Besides them, 6 Conciliation Officers were also interviewed. Relevant data were collected from the Department of Labor.

[35] Purushottam Sharma, B. The Role of Government in Industrial Relation in Nepal Unpublished Thesis in the Faculty of Management Studies, University of Delhi – 9,India. May 2000.

It was concluded that Industrial Relations in Nepal have passed through different stages of development. The relationship between capital and labor was antagonistic. During 1990's the Government tightly controlled the industrial relation system. The government allowed only the activities of licensed unions. Independent Unions where the power is generated from workers were banned. The government itself took upon the responsibility for the regulation of industrial relations.

M.Upender[36] (1996) estimated the elasticity of labor productivity so as to find the substitution possibilities of labor for capital in the Indian manufacturing sector. It was found that the wage-rate prevailing in the sector was less than the marginal productivity of labor. It was suggested that there was a need to re-direct the Indian manufacturing sector towards greater use of labor - intensive technology until marginal productivity of labor became equal to wage rate.

Zile Zingh Goyat[37] (1996) has studied about wage and productivity trends in India for selected industries in the period 1960-71. The main source of data is ASI. This study reveals that the labor productivity increased significantly in all industries. The important

36 M. Upender, "Elasticity of Labour Productivity in Indian Manufacturing", Economic and Political Weekly, May 25, 1996, pp.7-10.

37 Zile Singh Goyat (1996), "Wage Productivity Trends in India – A Case Study of some industries". Spellbound Publications Pvt. Ltd. Rohtalc.p.37

finding of this study is the capital intensity has been main factor for increasing labor productivity. Capital intensity is also increasing significantly in all the industries. This indicates that more and more capital could be required for generating employment in the industries. This is not feasible in India, because India has scarce capital resource. The capital productivity has declined in the study period for all industries. The level of capital has increased significantly in the following industries such as Iron and Steel, Machine Tool, Pharmaceutical and Agricultural implementing industry which are operating under capital intensive techniques. In this study the real earnings, wages and salary also increased significantly in all industries during the study period. There is highly positive correlation between labor earnings and labor productivity. That is the labor productivity is the important factor for wage determination. But the TFP was found downward trend in all the industries during the study period. This was due to decline in the capital productivity.

C. Mani Sastry[38] (1992) studied wage structure in organized industrial sector for the period 1956-1984. The main source of study is ASI. The interesting finding of this study is that the nominal wage is positively correlated with man days lost in the industrial sector. This implies that when the labor unrest is higher there is the possibility of

[38] C. Mani Sastry (1992), "Wage Structure in Organized Industrial Sector", Book Lings Corporation, Hyderabad.

rise in wages. The wage elasticity is higher in relation to cost of living index than to labor productivity.

The wage of the skilled worker in the private sector was equal to the wage of unskilled worker in the public sector units. The wage level of the unskilled worker in the private sector unit was less than half of the wage of public sector unit.

The occupational wage differentials are to be the lowest in the state public sector unit whereas they are the highest in the private sector organization. Per capital nominal wage levels of industrial worker are higher in the industrially forward states, compared to the industrially backward state in India. Inter industry wage differentials are much higher in the backward states as compared to forward states in India.

This study has analyzed the money wage for consumer goods, basic goods and capital goods industries. The growth rate of money wage is the lowest in consumer goods sector and the highest in capital goods sector. Demand for labor in capital goods sector is based on skill. This may be the reason for highest growth rate in money wage in capital goods sector.

Lakhwinder Singh[39] (1991) analyzed inter Industry wage structure in Punjab. This study provides empirical evidence of the extent and nature of the differences in growth of real wages in various

[39] Lakhwinder Singh (1991), "Changes in the Inter-Industries Structure of Wages: The case of Punjab", Indian Journal of Industrial Relation, Vol.27, Nov.2, PP.26-42.

manufacturing industries in Punjab over the period 1973-74 to 1982-83. This study also analyses trends and stability in the inter industry wage structure and factors affecting inter-industry wages. The most significant result is that wide variations are observed in the growth of real wages over the period. The wage differentials have shown considerable dynamism and flexibility. The flexibility of structure of wages is mainly determined by the conditions of product demand and rate of technological change. The labor productivity and capital intensity have emerged as the dominating ones which affect the inter industry structure of wages.

Vijay K. Seth[40] (1991) and Ashok K.Seth studied the labor absorption capability of the Indian manufacturing sector for the period 1960-84. For this study, gross employment, output elasticities have been estimated for the period 1960-1984 and to understand the relationship between labor absorption and phases of industrialization. These elasticities have also been estimated for three sub periods 1960-65, 1966-75 and 1976-84. To examine and compare long run and short run behavior of demand elasticities with respect to change in wage rate and output, employment functions have also been estimated. It has been observed that the labor absorption has lagged behind the rate of growth of output irrespective of the phases of industrialization. The

[40] Vijay K.Seth and Ashok K.Seth (1991), Labor Absorption in the Indian Manufacturing Sector,", Indian Journal of Industrial Relations, Vol.27, No.1, pp.19 - 31.

estimates also show negative, short and long run elasticity of labor demand with respect to wage rate, which is being greater than the positive elasticity of demand for labor which can be inferred in the manufacturing sector.

Ramdas[41] (1989) attempted to study the impact of union on wages for the period 1960-1980 in the chemicals, textiles and the aggregate of 20 industry groups which represent the manufacturing sector. Chemical industry is a relatively more productive but not strongly unionized. Textiles, on the other hand, have low productivity and have a high degree of unionization. Thus the above two industries are selected for this study. For measuring the degree of trade unionism, the ratio of man days lost in industrial disputes to workers ratio has been used as a proxy for union activities instead of the traditional measures that is the ratio of unionized workers to selected unionizable workers. The main source of data for this study was Central Statistical Organization. This study concluded that there is no positive influence on money earnings of the workers and unionism.

B.N. Golder[42] (1986) analyzed the productivity trends in the Indian Industry with a major methodological improvement for the measurement of selected factor productivity using the Translog index,

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41 Ramdas (1989), "Trade Unions and Wages: A Study of Selected Manufacturing Industries in India", Indian Journal of Industrial Relations, Vol.24, NO.3, pp.269 to 280.

42 Goldar, B.N. (1986) Productivity Growth in Industry, Allied Publishers private Ltd., New Delhi.

which is a discrete version of the continuous Divisia index. It was found that the trends of partial productivities had changed remarkably after 1970 and the problem of industrial efficiency was also related to the structure of the economy.

A.N. Mathur[43] (1986) analyzed eight organizations located in Tamil Nadu, Andhra Pradesh, Orissa and Bihar which were selected on the basis of size, technology and comparability. The main objectives of this study are, (i) To analyze intra organizational and inter organization differences in wage level and wage structure of industrial organizations. (ii) To study the relationship between wages of different categories of workmen and relate wages with organizational and National variables.

B.K. Madan[44] (1977) derived the trends in money earnings and real earnings of industrial workers, besides wage - productivity nexus in India using data furnished by Annual Survey of Industries (ASI). when the consumer prices started rising steeply in the wake of the inflationary trend, the real earnings of labor lagged, money earnings being unable to keep pace with the fast rising cost of living. He also concluded that there had been probably a certain contribution to productivity through increased effort. The correlation between changes

43 A.N.Mathur (1986), "Dynamics of Wages", Popular Prakasham, Bombay, p.142

44 B.K. Madan, "The real wages of Industrial labour in India", Monograph No.1, Management Development Institute, New Delhi, 1977.

in productivity and real earnings of the industries and labor was graphically illustrated in which every surge in productivity was accompanied by a spurt in real earnings.

V.B. Singh[45](1973) studied about wage structure of cotton mill workers in various centers in India to find out wage differential in different centers. He compared the daily average wage rates of different category in different years in same and different centers. His technique of analysis was based on coefficient of variations and analysis of variance. There were some variations in wages in the same industry in different regions. In this study the wage differentials could be analyzed in terms of comparison of the wage rates of same category of workers in different centers. As a result the wage rates have varied from centre to centre. He also studied about the inter-departmental differentials and intra departmental differentials and variations in the wage structure of department between mills.

The possible reasons for wage differentials both to workers and management were obtained from opinion survey. From the workers point of view, the wage differentials arise due to degree of skill, responsibility and strain. From the management point view, the wage differentials occurred due to degree of skill, strain, experience, training,

45 V.B. Singh, "Wage Patterns Mobility and Saving of Workers in India – A Study of Kanpur Textile Industry", Lalveni Publishing House, Bombay – New Delhi – Calcutta – Madras, 1973.

nature of job (permanent or temporary) and hazardous work. The important point suggested by management is that the reduction of wage disparities will not increase the productivity of workers. But in case of low paid workers, the reduction in wage disparities will raise productivity.

He analyzed piece rate system and time rate system operating in Kanpur Textile Mill. He pointed out that there is substantial increase in production per worker under piece rate system. The high production which leads to deteriorates in the quality. The cost of production per unit of output goes down and workers earnings go up. Most of the workers prefer piece rate system, because it gives higher earnings. A smaller part of workers, prefer the time rate system because there are no fluctuations in the earnings like piece rate system. The main drawback of this study is that the labor productivity was not measured empirically.

Abdul Aziz[46] (1972) analyzed the Industrial wage structure of small, medium and large scale industries using primary and secondary data. It was concluded that the institutional forces were introducing the non-economic as against the purely economic considerations of productivity, capacity to pay and the like in the wage determining process.

[46] Abdul Aziz, Industrial Wage Structure in Mysore State, University of Mysore, 1972.

H.B. Shivamassi and others[47] (1968) examined the trends in wages in seven important industries during 1951-61 and to compare them with trends in labor productivity and costs of production during the same period. The main source of data was ASI and CMI. The seven industries covered are cotton textiles, jute textiles, iron and steel, cement, paper and paper boards, chemicals and chemical products and sugar. The important conclusions are as follows:

Rise in Real Wages at the overall as well as industry wise, lagged behind without improvement in labor productivity. The overall trend in money wages was similar to that in real wages, rise in money wages outpaced productivity in cotton textiles, sugar and iron and steel. Relatively greater rise in labor productivity may be partly associated with the increase in fixed capital per unit of labor and improvement in management techniques. The falling trend in the wage-cost ratio holds good even if the overall share of labor cost. (i.e. salaries and wages) is taken as a percentage of selected cost of industrial output.

In India, "The second Five year plan sounded more positively emphasizing the relationship between wage increases and productivity improvements and it favored the need for a wage policy which aimed at

47 H.B.Shivamassi, N.Rajagopalan and T.R.Venkatachalam (1968), "Wages, Labor Productivity and Costs of Production, 1951-61" Economic and Political Weekly, May 4, pp.710 to 716

raising real wages by increasing productivity[48]." There is a similarity in this context with Singapore, "A National Wage Council was established in 1972, composed of representatives of Government, employers and Trade Unions to set guidelines for increase in Wages and fringe benefits and to suggest incentives for encouraging productivity improvements[49]". Moreover, "In Singapore the wage-rates fell, and the gap between its wage rates - hitherto much, the highest in Asia after Japan and those of Hong Kong-increased".[50]

Alias radam and ismail latiff(1999)[51] studied the performance of manufacturing industries in Malaysia. The measurement of firm efficiency and its' economic component requires information in observed and planned inputs and outputs. The research analysis covered 117 Malaysian industries classified according to the 5 digit level over 1983 to 1992. It was found that the productivity increases have recorded in almost all measures of economic performance. But the disparity is evident among industries which adopt different levels of technology according to the needs of the firms.

48 Shahab Dayal, Industrial Relation System in India, Sterling publishers Pvt. Ltd., New Delhi, 1980, p47.

49 Theodore Geiger and Frances M. Gerger, The Development progress of Hongkong and Singapore, Macmillan Publications, London, 1975, p 205

50 Theodore Geiger and Frances M. Gerger, The Development progress of Hongkong and Singapore, Macmillan Publications, London, 1975, p 163

51 Alias radam and ismail latiff, "Productivity performances of Malaysian manufacturing industries, Asian Economic Review, 199, p249.

Large rice mills are slow adopters of technology, labor intensive and are subjected to the vagaries of inconsistent supply of raw products. Manufacture of gases on the other hand, are highly technology adopters, capital intensive and are subjected to the specific requirements of the technology.

In conclusion, the Malaysian manufacturing industry place high priority in ensuring higher productivity levels in view of the increased competition in the market place. Firms need to adjust to changing technology and profitable ventures so that their productivity and profitability performances are maintained.

Assar Lindbeck (1983)[52] has analyzed the slowdown of productivity growth in the developed countries during the seventies. It was concluded that the macro-economic development revealed and strengthened the negative consequences for productivity growth. In addition, a number of other proximate sources of the productivity growth slow-down has also been identified, such as increased capacity, slack reduction in dynamic returns to scale and reduction in the economic incentives for productive activities by employees and managers.

[52] Assard Lindback, The Recent Slowdown Of Productivity Growth, Institute For International Economic Studies, Universities of Stock holm, Reprint series No.206, March 1983.

K.G. Knight and R.A.Wilson (1980)[53] related the incidence of strikes to the degree of worker's discontent and the resistance displayed by employers to demands made by workers. They have mentioned that all the previous studies in the U.K. using this type of model had emphasized the importance of the sluggish rate of advance in real income as the most important cause of greater worker discontent leading to increased strike frequency. Other important economic influences on strike frequency that have been emphasized are profits, productivity and unemployment. In another study K.G.Knight and P.A.Geroski found that high strike frequency was not associated with high wage levels.

2.3 OPERATIONAL DEFINITIONS OF THE CONCEPTS

The working definitions of the terminologies and variables used for the present study are presented in the following pages.

FACTORY

Factory is one that is registered under sections 2m (i) and 2m (ii) of the Factories Act, 1948. The sections 2m (i) and 2m (ii) refer to any premises including the precincts thereof (a) whereon ten or more workers are working, or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of power, or is ordinarily so carried on; or

[53] K.G. Knight, Department of Economics, University of Warwick coventry, CV47AL, 1980.

(b) whereon twenty or more workers are working or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on without the aid of power, or is ordinarily so carried on.

Fixed Capital

Fixed Capital represents the depreciated value of fixed assets owned by the factory as on the closing day of the accounting year. Fixed assets are those that have a normal productive life of more than one year. Fixed capital includes land including lease- hold land, buildings, plant & machinery, furniture and fixtures, transport equipment, water system and roadways and other fixed assets such as hospitals, schools used for the benefit of the factory personnel.

Physical Working Capital

Physical Working Capital is the total inventories comprising of raw materials and components, fuels and lubricants, spares, stores and others, semi-finished goods and finished goods as on the closing day of the accounting year. However, it does not include the stock of the materials, fuels, stores, etc. supplied by others to the factory for processing and finished goods processed by the factory from raw materials supplied by others.

Working Capital

Working Capital is the sum total of the physical working capital as already defined above and the cash deposits in hand and at bank and the net balance receivable over amounts payable at the end of the accounting year. Working capital, however, excludes unused overdraft facility, fixed deposits (irrespective of duration), advances for acquisition of fixed assets, loans and advances by proprietors and partners (irrespective of their purpose and duration), long-term loans (including interest thereon) and investments.

Productive Capital

Productive Capital is the total of fixed capital and working capital as defined above.

Invested Capital

Invested Capital is the total of fixed capital and physical working capital as defined above.

Gross Value of Plant and Machinery

Gross Value of Plant and Machinery represents the total original (un-depreciated) value of installed plant and machinery at the end of the accounting year. It includes the book value of the newly installed plants and machinery and the approximate value of rented in plants and machinery at the time of renting-in but excludes the value of

rented-out plants and machinery. Total value of all the plants and machinery acquired on hire - purchase basis is also included.

Outstanding Loans represent

Outstanding Loans represent all loans (whether short term or long term, interest bearing or not) outstanding according to the books of the factory as on the closing day of the accounting year.

Workmen

Workmen defined to include all persons employed directly or through any agency whether for wages or not and engaged in any manufacturing process or in cleaning any part of the machinery or premises used for manufacturing process or in any other kind of work incidental to or connected with the manufacturing process or the subject of the manufacturing process . Labour engaged in the repair & maintenance, or production of fixed assets for factory's own use, or employed for generating electricity, or producing coal, gas. are included.

Employees

Employees include all workers defined above and persons receiving wages and holding clerical or supervisory or managerial positions engaged in administrative office, store keeping section and

welfare section, sales department as also those engaged in purchase of raw materials etc. or purchase of fixed assets for the factory as well as watch and ward staff.

Total Persons Engaged

Total Persons Engaged include the employees as defined above and all working proprietors and their family members who are actively engaged in the work of the factory even without any pay, and the unpaid members of the co-operative societies who worked in or for the factory in any direct and productive capacity. The number of employees is an average number obtained by dividing man-days worked by the number of days the factory had worked during the reference year.

Wages and Salaries

Wages and Salaries are defined to include all remuneration in monetary terms and also payable more or less regularly in each pay period to workers as compensation for work done during the accounting year. It includes (a) direct wages and salary (i.e., basic wages/salaries, payment of overtime, dearness, compensatory allowance, house rent and other allowances), (b) remuneration for the period not worked (i.e., basic wages, salaries and allowances payable for leave period, paid holiday, lay-off payments and compensation for unemployment, if not paid from sources other than employers), (c)

bonuses and ex-gratia payment paid both at regular and less frequent intervals (i.e., incentive bonuses, good attendance bonuses, productive bonuses, profit sharing bonuses, festival or year-end bonuses, etc.). It excludes lay off payments which are made from trust or other special funds set up exclusively for this purpose i.e., payments not made by the employer. It also excludes imputed value of benefits in kind, employer's contribution to old age benefits and other social security charges, direct expenditure on maternity benefits and crèches and other group benefits. Travelling and other expenditure incurred for business purposes and reimbursed by the employer are excluded. The wages are expressed in terms of gross value that is before deduction for fines, damages, taxes, provident fund, and employee's state insurance contribution.

Contribution to Provident Fund and Other Funds

Contribution to Provident Fund and Other Funds includes old age benefits like provident fund, pension, gratuity and employers contribution towards other social security charges such as employees state insurance, compensation for work injuries and occupational diseases, provident fund-linked insurance, retrenchment and lay- off benefits.

Workmen and Staff Welfare Expenses

Workmen and Staff Welfare Expenses include group benefits like direct expenditure on maternity, crèches, canteen facilities, educational,

cultural and recreational facilities and co-operative stores meant for employees.

Total Emoluments

Total Emoluments is defined as the sum of wages and salaries, employers' contribution as provident fund and other funds and workmen and staff welfare expenses as defined above.

Total Input

Total Input comprises total value of fuels and materials consumed as well as expenditures such as cost of contract and commission work done by others on materials supplied by the factory, cost of materials consumed for repair and maintenance of factory's fixed assets including cost of repairs and maintenance work done by others to the factory's fixed assets, inward freight and transport charges, rates and taxes (excluding income tax), postage, telephone and telex expenses, insurance charges, banking charges, cost of printing and stationery and purchase value of goods sold in the same condition as purchased .

Total Output

Total Output comprises total ex-factory value of products and by-products manufactured as well as other receipts such as receipts from

non-industrial services rendered to others, work done for others on material supplied by them, value of electricity produced and sold, sale value of goods sold in the same condition as purchased, addition in stock of semi- finished goods and own construction.

Depreciation

Depreciation is consumption of fixed capital due to wear & tear and obsolescence during the accounting year and is taken as provided by the factory owner or is estimated on the basis of cost of installation and working life of the fixed assets.

Net Value Added

Net Value Added is arrived by deducting total input and depreciation from total output.

CHAPTER – III
MANAGERIAL ANALYSIS OF EMPLOYMENT AND WAGES

3.1 INTRODUCTION

A developing country like India cannot afford industrial inefficiency and at the same time soaring unemployment. A labor abundant country should make use of the available labor force instead of spending huge amount of capital as substitutes for labor.

In the developing country like India, inflationary trend is a common feature. The organized industrial workers through collective bargaining also are able to enhance their money wages over a period of time.

Administrative action to reduce disparities of wages between the public and the private sector, between the rural and the urban sector, between the organized and the unorganized sector can have only a marginal impact if the rate of growth of employment is unfavorable to the labor force.

Therefore, wage policy has to be backed up by an employment policy. Obviously, substitution of capital for labor is taking place. If this trend continues in a labor surplus economy like India, it shall act as a serious impediment in improving the overall real wages of labor in the economy, though it may improve the money wage level of those

who are able to retain their employment. A National wage policy must therefore, be accompanied by a full employment policy, failing which it defeats its' very purpose. Employment in the organized manufacturing sector in India remained virtually stagnant in the early 1980s and slowly declining later.

In the present chapter, growth pattern of significant variables that indicate effective production process of Indian manufacturing sector. A managerial analysis of the various input-output relationship has been attempted for.

Since, the present analysis covers 51 piece and 95 time rate wage payment industries of disaggregate data at the All India level, assessment of individual performance of each industry is not feasible. Hence, appropriate measure about the crucial variables for all selected industries in piece and time rate groups are presented in the ranges of values less than zero, 0 to 5, 5 to 10 and ratios depending on the common spread of data covering 146 industries.

MAIN COMPARISON TITLE – A FEW WORDS

3.2 GROWTH OF LABOR

The concept of labor in any production process is a crucial one. The level of employment is a good indicator of a country's development especially in thickly populated ones. The over all

ranges in the growth rate of labor in piece and time rate industries groups in India are presented in the Table 3.1.

TABLE 3.1
DISTRIBUTION OF SELECTED INDUSTRIES IN INDIA BY THE GROWTH RATE OF LABOR

Sl. No.	Growth rate of Labor (in percent)	*Number of industries under Piece Rate System*			*Number of industries under Time Rate System*		
		Overall	*Pre-Reform*	*Post-Reform*	*Overall*	*Pre-Reform*	*Post-Reform*
1.	< 0	10 (19.6)	18 (35.3)	6 (11.7)	15 (15.7)	24 (25.2)	15 (15.7)
2.	0 to 5	17 (33.3)	11 (21.5)	19 (37.2)	44 (46.3)	44 (46.3)	43 (45.2)
3.	5 to10	9 (17.6)	8 (15.7)	12 (23.6)	25 (26.3)	11 (11.7)	22 (23.4)
4.	> 10	15 (29.5)	14 (27.5)	14 (27.5)	11 (11.7)	16 (16.8)	15 (15.7)
	Total	**51**	**51**	**51**	**95**	**95**	**95**

Source: Computed from the ASI data sources for the selected industries.

Note: Figures in parentheses are percentages to the total.

The issue of increasing the level of employment expansion with productivity has been an important aspect of policy planning and research. The present study seeks to examine the ranges of growth in employment in the two major classifications of piece and time rate industries. 19.6 per cent of selected industries recorded a negative growth rate of employment in piece rate industry group during the overall period. Thirty Three per cent of selected industries registered a growth range of 0 to 5 per cent, 17.6 per cent of selected industries were in the range of 5 to 10 per cent and 29.5 per cent of selected industries showed more than 10 per cent growth rates in piece rate industry group during the study period.

For pre-reform period 35.3 per cent of selected industries had negative growth rate of employment in the piece rate industry group. 21.5 per cent were in the range of growth rate of employees 0 to 5 per cent and 15.7 per cent of selected industries in the range of 5 to 10 per cent and 27.5 per cent of selected industries lie above 10 per cent.

For the post reform period, 11.7 per cent of selected industries registered negative growth rate of employment in the piece rate industry group. 37.2 per cent of selected industries were in the range of 0 to 5 per cent growth rate of employment and 23.6 per cent of selected industries were in the range of 5 to 10 per cent and 7.5 per cent were in the range of more than 10 per cent growth rate of labor. On the whole,

The growth rate of employment in the post-reform period was higher than that of pre-reform period in the piece rate industry group.

In time rate industry group, 15.7 per cent of selected industries registered a negative growth rate of employment during the overall study period. 46.3 per cent of selected industries were in the range of 0 to 5 per cent growth rate of employment and 26.3 per cent in the range of 5 to 10 per cent and 11.7 of selected industries were in the range of more than 10 per cent.

During pre-reform period, 25.2 per cent of selected industries had negative growth rate of employment in the time rate industry group. 46 per cent of selected industries were in the range of 0 to 5 per cent of growth rate of employment and 11.7 per cent were in the range of 5 to 10 per cent and 16.8 per cent of selected industries were in the range more than 10 per cent growth rate.

For the post reform period, 15.7 per cent of selected industries registered negative growth rate of employment in time rate industry group. 45.2 per cent were in the range of 0 to 5 per cent of growth rate of employment and 23.4 per cent were in the range of 5 to 10 per cent and 15.7 per cent of selected industries were in the range of more than 10 per cent growth rate.

From the above analysis, it could be inferred that the growth rate of employment in the post-reform period is higher than that of pre-reform period in both piece and time rate industry groups.

The growth rate of labor in the respective ranges for piece and time rate industries are presented in the following figure.

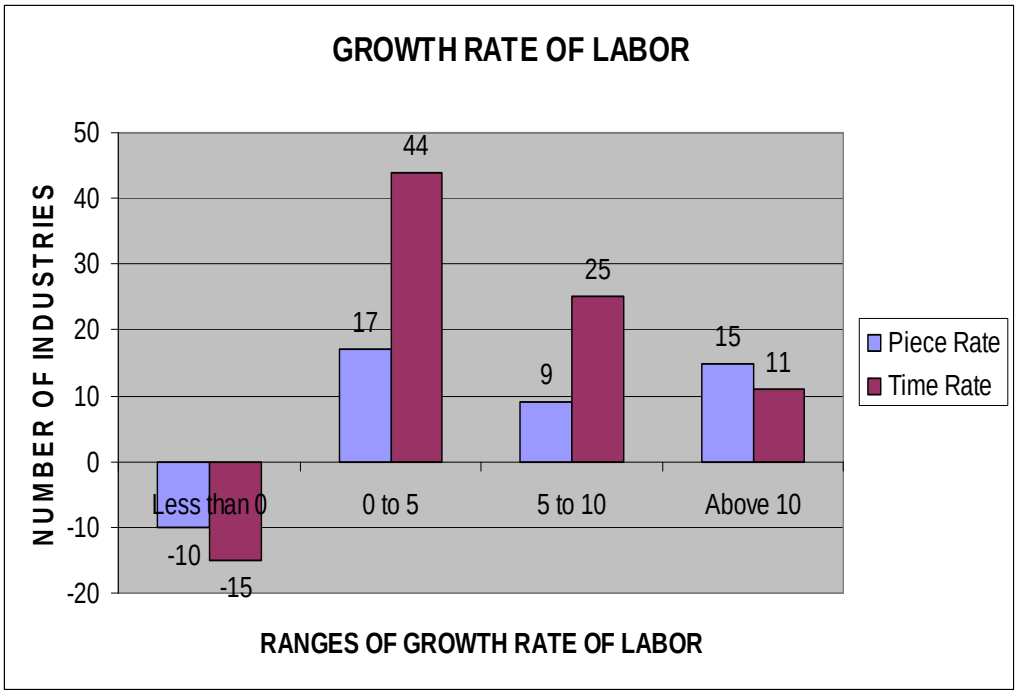


FIGURE 3.1

It is observed that the growth rate of labor in the piece rate industries is higher during the post-reform period than the pre- reform period. A similar trend can also be seen in time rate industry group. Thus, it is concluded that on the whole, in both piece and time rate

industries, the growth rate of labor has improvement due to the impact of economic reforms.

3.3 GROWTH OF CAPITAL

The overall ranges in growth rate of capital in piece rate and time rate industry groups in India are presented in the Table 3.2.

TABLE 3.2
DISTRIBUTION OF SELECTED INDUSTRIES IN INDIA BY GROWTH RATE OF CAPITAL

Sl. No.	Growth rate of Capital (in percent)	*Number of industries under Piece Rate System*			*Number of industries under Time Rate System*		
		Overall	*Pre-Reform*	*Post-Reform*	*Overall*	*Pre-Reform*	*Post-Reform*
1.	< 0	0 (0)	1 (1.9)	0 (0)	0 (0)	0 (0)	1 (1.0)
2.	0 to 10	0 (0)	4 (7.8)	0 (0)	0 (0)	2 (2.1)	3 (3.3)
3.	10 to 20	11 (21.6)	12 (23.5)	7 (13.8)	12 (12.6)	8 (8.4)	28 (29.5)
4.	20 to 30	10 (19.6)	9 (17.6)	12 (23.6)	35 (36.8)	34 (35.6)	24 (25.3)
5.	30 to 40	6 (11.7)	7 (13.8)	12 (23.6)	17 (17.9)	14 (15.8)	13 (13.6)
6.	40 to 50	1 (1.9)	2 (3.9)	3 (5.9)	14 (15.8)	12 (12.6)	9 (9.5)
7.	> 50	23 (45.2)	16 (31.4)	17 (33.5)	17 (17.9)	25 (25.5)	17 (17.8)
	Total	**51**	**51**	**51**	**95**	**95**	**95**

Source: Computed from the ASI sources of data.

Figures in parentheses are percentages to the total.

For overall period, 21.6 per cent of selected piece rate industries recorded a growth rate of capital in the range of 10 to 20 per cent. 19.6 per cent were in the range of 20 to 30 per cent of growth rate of capital and 11.7 per cent were in the range of 30 to 40 per cent and 1.9 per cent were in the range of 40 to 50 per cent of growth rates of capital during the period under review. 45.2 per cent of selected piece rate industries achieved higher rate of capital that is in the range of more than 50 per cent of average annual growth rate of capital. It is important to note that no industry has recorded negative growth of capital during the study period.

During the pre-reform period, around 2 per cent of the selected piece rate industries recorded a negative growth rate of capital. 7.8 per cent of selected industries were in the range of 0 to 10 per cent growth rate of capital, 23.5 per cent were in the range of 10 to 20 per cent, 17.6 per cent were in the range of 20 to 30 per cent, 13.8 per cent were in the range of 30 to 40 per cent and 3.9 per cent of selected industries were in the range of 40 to 50 per cent growth rate. The highest average annual growth rate of capital ranging above 50 per cent was achieved by 31.4 per cent of selected piece rate industries during the pre-reform period.

During the post-reform period, 13.8 per cent of selected piece rate industries recorded the growth rate of capital in the range of 10 to 20 per cent, 23.6 per cent were in the range of 20 to 30 per cent, 23.6 per

cent were in the range of 30 to 40 per cent and only 5.9 per cent of the selected industries were in the range of 40 to 50 per cent of growth rate of capital during the post-reform period. The highest growth rate of capital ranging more than 50 per cent was achieved by the 33.5 per cent of selected piece rate industries during this period.

It is observed from the fore going analysis that all the selected piece rate industries had more than 10 per cent average annual growth rate of capital during post reform as well as over all period. A growth rate of less than 10 per cent was achieved by only 8 per cent of selected industries and about 2 per cent of selected industries had recorded negative growth during the pre-reform period.

As far as time rate industries are concerned, during the overall study period, 12.6 per cent had the growth rate of capital in the range 10 to 20 per cent. 36.8 per cent were in the range of 20 to 30 per cent, 17.9 per cent were in the range of 30 to 40 per cent, 15.8 per cent were in the range of 40 to 50 per cent and 17.9 had more than 50 per cent of growth rates of capital during the study period.

During pre-reform period, 2.1 per cent of selected time rate industries recorded a growth rate of capital in the range of 0 to 10 per cent. 8.4 per cent of selected industries were in the range of 10 to 20 per cent, 35.6 per cent were in the range of 20 to 30 per cent, 15.8 per cent were in the range of 30 to 40 per cent, 12.6 per cent were in the range of

40 to 50 per cent and 25.5 per cent of selected industries fell in the range of more than 50 per cent growth rate of capital during the period under review.

During post-reform period, only one per cent of the time rate industry registered a negative growth rate of capital. 3.3 per cent were in the range of 0 to 10 per cent, 29.5 per cent were in the range of 10 to 20 per cent, 25.3 per cent were in the range of 20 to 30 per cent, 13.6 per cent were in the range of 30 to 40 per cent, 9.5 per cent of selected industries in the range of 40 to 50 per cent and 17.8 per cent were in the range of more than 50 per cent growth rate of capital.

The foregoing analysis reveals that the growth rate of capital was higher in the piece rate industry group when compared with time rate industry group during post-reform period. That is nearly 60 per cent of selected piece rate industries had more than 30 per cent of growth rate of capital during the post reform period. Where as, 40 per cent of selected time rate industries had more than 50 per cent of growth rate of capital during this period. This indicates that there was considerable increase in capital investments in the piece rate industry group as a result of liberalization process.

3.4 GROWTH OF CAPITAL INTENSITY

The introduction of automation coupled with computerization has given an opportunity for the Indian industrial workmen who

hitherto had limited skills to become familiar with latest technology. Further the traditional kind of labor involvement in the production process is outdated and to be weaned away in order to reduce labor costs, increase productivity and ultimately to enhance profitability.

New technology brings changes in the job content and responsibility, job displacement, redundancy and redeployment, retraining, union co-operation and mutual agreement. These are extremely important in reaping the benefits of new technology. New technology requires huge initial capital for which the gestation period is also long. Further, "the fact remains that new technology is capable of selectively if not entirely replacing the human element. This has happened not only in developing countries but also in the advanced countries like USA".[54]

Thus an attempt has been made to study the impact of new technology on employment and wage levels in selected industries of India. The following Table 3.3 presents the trends in capital intensity of the selected industries.

[54] Rifkin (1995) as given by R.C. Datta, New Technology and Textile Workers, Economic and Political Weekly, Sep 25, 1999, p.41

TABLE – 3.3
DISTRIBUTION OF SELECTED INDUSTRIES IN INDIA BY THE GROWTH RATE OF CAPITAL INTENSITY

Growth rate in percent	*Number of industries under Piece Rate System*			*Number of industries under Time Rate System*		
	Overall	*Pre-Reform*	*Post-Reform*	*Overall*	*Pre-Reform*	*Post-Reform*
< 0	0 (0)	0 (0)	2 (3.9)	0 (0)	0 (0)	2 (2.1)
0 to 10	0 (0)	0 (0)	4 (7.8)	0 (0)	4 (4.2)	6 (6.3)
10 to 20	9 (17.6)	6 (11.8)	16 (31.4)	23 (24.2)	11 (11.7)	34 (35.8)
20 to 30	14 (27.5)	15 (29.4)	11 (21.6)	27 (28.4)	34 (35.8)	22 (23.1)
30 to 40	8 (15.7)	10 (19.6)	4 (7.8)	26 (27.4)	15 (15.7)	13 (13.7)
40 to 50	3 (5.8)	5 (9.8)	4 (7.8)	10 (10.5)	18 (18.9)	7 (7.3)
> 50	17 (33.4)	15 (29.4)	10 (19.7)	9 (9.5)	13 (13.7)	11 (11.7)
Selected Industries	**51**	**51**	**51**	**95**	**95**	**95**

Source: Computed from the ASI sources of data.

Figures in parentheses are percentages to the total.

All the selected industries under piece rate industries group recorded more than 10 per cent growth of capital intensity during the over all period. 33.4 per cent of them had more than 50 per cent of growth. This result clearly indicates that the piece rate industries were

transformed from labor intensive into capital intensive industries during the study period.

During the pre-reform period, it is also found that all selected piece rate industries recorded more than 10 per cent growth of capital intensity. Nearly 30 percent of them were in the range of more than 50 percent of growth. During the post reform period, it was nearly 20 percent. Nearly 58 percent of selected industries registered more than 30 percent of growth of capital intensity during the pre-reform period under piece rate industry group. It is observed that nearly 35 percent of them had more than 30 percent of growth during the post reform period.

This result indicates that there is no improvement in capital intensity growth in selected piece rate industry group during post-reform period. It was simultaneous increase both in the growth rate of capital and labor.

As far as time rate industry group is concerned, it is found that all the selected industries registered more than 10 percent growth of capital intensity and 9.5 per cent of them had more than 50 per cent of growth capital intensity during the study period.

During the pre-reform period, it is also found that 4.2 per cent of selected time rate industries had less than 20 per cent growth of capital

intensity. 13.7 percent of them recorded more than 50 per cent of growth of capital intensity.

For the post-reform period, 8.4 per cent of selected time rate industries were in less than10 percent growth of capital intensity. 35.8 per cent selected industries were in the range of 30 to 40 percent growth of capital investments during post-reform period. Where as 23.1 per cent of selected industries were in the range 20-30, 13.7 per cent were in the growth of 30-40, 7.3 per cent in the range of 40-50 and 11.7 per cent lie above 50 per cent growth of capital intensity during the post-reform period.

From the above analysis, it may be inferred that both piece and time rate industries have recorded a mixed trend of growth as far as capital intensity is concerned.

3.5 GROWTH OF VALUE ADDED

Trends in the growth of the manufacturing sector in India have been a much debated issue quite sometime now. While Aluwalia concluded that the slow growth of the output is registered in manufacturing at 1979-80[55], Nagaraj[56] in his study revealed that there was 8 percent growth per annum during the period 1981-87 in the

[55] Aluwalia, I.J., "Industrial Growth in India; Stagnation since the Mid-Sixties", Oxford University Press, 1985.

[56] Nagaraj,R. "Growth in manufacturing output since 1980; some preliminary findings; Economic and Political Weekly, July 1, 1989, PP.1481-1484.

registered manufacturing industries. This study also found that consumer durable industries have a less than 3 percent witnessed fastest growth rate of 14 per cent per annum followed by capital goods industries at 10 percent per annum.

For the present study, the gross value added at constant prices has been taken from Annual Survey of Industries (ASI) separately for both piece and time rate industries which are disaggregated at three digit level. Table 3.4 presents the trend in growth rate of value added for piece and time rate industries.

TABLE 3. 4
DISTRIBUTION OF SELECTED INDUSTRIES IN INDIA BY GROWTH RATE OF VALUE ADDED

Sl. No.	Growth rate of value added (in percent)	*Number of industries under Piece Rate System*			*Number of industries under Time Rate System*		
		Overall	*Pre-Reform*	*Post-Reform*	*Overall*	*Pre-Reform*	*Post-Reform*
1.	< 0	3 (5.9)	3 (5.9)	6 (11.8)	0 (0)	4 (4.2)	2 (2.1)
2.	0 to 5	5 (9.8)	6 (11.8)	7 (13.7)	4 (4.2)	9 (9.5)	10 (10.5)
3.	5 to 10	11 (21.5)	9 (17.6)	11 (21.6)	23 (24.2)	17 (17.9)	16 (16.8)
4.	10 to 15	7 (13.7)	6 (11.8)	6 (11.8)	22 (23.2)	22 (23.2)	21 (22.1)
5.	15 to 20	8 (15.6)	9 (17.6)	4 (7.8)	10 (10.5)	16 (16.8)	15 (15.8)
6.	20 to 25	2 (3.9)	2 (3.9)	5 (27.5)	17 (17.9)	7 (7.4)	9 (9.5)
7.	Above 25	15 (29.5)	16 (31.4)	12 (23.5)	19 (20.9)	20 (21.0)	22 (23.2)
	Total	**51**	**51**	**51**	**95**	**95**	**95**

Source: Computed from the ASI sources of data.

Note: Figures in parentheses are percentages to the total.

It is found that 5.9 per cent of selected piece rate industries had negative trend in growth rate of value added for the overall period. The remaining 94.1 per cent had positive growth rate. It is observed that 29.5

per cent of selected industries under piece rate industries group was in more than 25 per cent of growth rate of value added.

In respect of pre-reform period, it is found that 5.9 per cent of selected piece rate industries had negative growth rate of value added. It is also found that 31.4 per cent of them had more than 25 percent of growth. With regard to post-reform period, 11.8 per cent of selected piece rate industries registered a negative growth rate in value added. It is also observed that 23.5 per cent of them had more than 25 per cent of growth during this period.

The growth rate of value added in time rate industry group had positive trend during the entire study period. It is also found that 4.2 per cent and 2.1 per cent of selected industries had negative growth during pre-reform and post-reform respectively. Table 3.4 shows that 20.9 percent, 21 per cent and 23.2 per cent of selected time rate industries were in the range of more than 25 per cent of growth rate of value added during all the three periods. The aforesaid results indicate that there is no notable difference between piece rate and time rate industry groups in terms of growth rate of value added during the study period. However, both piece and time rate groups of industries registered a satisfactory growth rate in value added.

3.6 GROWTH OF CAPITAL-OUTPUT RATIO

The concept of capital-output ratio expresses the relationship between the value of capital investment and value of output. It refers to the amount of capital required in order to produce a unit of output. The concept of capital-output ratio is applicable not only to an economy as a whole but also to its' different sectors. There are different capital-output ratios for different sectors of an economy which depend on the available either capital intensive or labor intensive technique used by them. The overall capital-output ratio for a country is the average of the sectoral ones. For estimating capital-output ratio, gross fixed stock at constant prices is used as a measure of capital input. Table 3.5 presents the capital-output ratios of the selected piece and time rate industries.

TABLE 3.5
DISTRIBUTION OF SELECTED INDUSTRIES IN INDIA BY CAPITAL-OUTPUT RATIO

Sl. No.	Capital - Output Ratio	*Number of industries under Piece Rate System*			*Number of industries under Time Rate System*		
		Overall	*Pre-Reform*	*Post-Reform*	*Overall*	*Pre-Reform*	*Post-Reform*
1.	Below 1:1	22 (43.0)	37 (72.5)	14 (27.5)	37 (38.9)	69 (72.6)	20 (21.0)
2.	1:1 to 2:1	22 (43.0)	13 (25.5)	18 (35.0)	44 (46.3)	19 (20.0)	43 (45.3)
3.	2:1 to 3:1	7 (14.0)	1 (2.0)	12 (23.5)	6 (6.3)	5 (5.3)	20 (21.0)
4.	Above 3:1	0 (0)	0 (0)	7 (14.0)	8 (8.5)	2 (2.1)	12 (12.7)
	Total	**51**	**51**	**51**	**95**	**95**	**95**

Source: Computed from the ASI source of data.

Figures in parentheses are percentages to the total.

It is found that 86 per cent of the selected piece rate industries had their capital-output ratio of less than 2:1 during the overall period. During the pre-reform period, the capital output ratio for 9.8 per cent of piece rate industries was found to be less than 2:1. However, during post-reform period only 62 per cent of them had that level. It is observed that there was no piece rate industry whose Capital output ratio was more than 3:1 during the over all and pre-reform period. At the same time it is also observed that 14 per cent of selected piece rate industries lie above the ratio of 3:1 during post-reform period.

A similar trend was also found in the time rate industry group. This indicates that the piece rate industries and time rate industries at the over all Indian manufacturing were transformed from labor intensive to capital intensive. In other words, increasing trend in capital output ratio indicates reduction in the possible increase in the employment level in the Indian Manufacturing. This might have been due to the impact of new economic policy in both piece rate and time rate industry groups in Indian manufacturing sector. The technological up gradation, modernization and the tendency to introduce other capital intensive technologies, resulted in the lesser growth of employment in general.

3.7 GROWTH OF CAPACITY UTILISATION

Capacity utilization of a firm indicates the extent of utilization of resources at its disposable to achieve the desired level of output. In a capital starved country like India, the importance of the fullest possible utilization of industrial capacity both in public and private sectors can hardly be over emphasized. This is necessary not only to ensure the optimum utilization of scarce invested capital resources, but also to create new capital for further development. In the present study, the index of capacity utilization is defined as ratio of the actual output to maximum output in any year during the selected period. In the Annual Survey of Industries (ASI) physical units of output are not given and hence output in physical units was calculated by the selected value of output divided by corresponding price of output for the present analysis. The following Table 3.6 gives the growth rate of capacity utilization among selected industries.

TABLE 3.6

DISTRIBUTION OF SELECTED INDUSTRIES IN INDIA BY GROWTH RATE OF CAPACITY UTILIZATION

Degree of Capacity Utilization (in Per cent)	***Number of industries under Piece Rate System***			***Number of industries under Time Rate System***		
	Overall	***Pre-Reform***	***Post-Reform***	***Overall***	***Pre-Reform***	***Post-Reform***
0 to 20	1 (1.9)	8 (15.7)	1 (1.9)	1 (1.1)	6 (6.3)	0 (0)
20 to 40	14 (27.4)	13 (25.5)	8 (15.7)	9 (9.4)	30 (31.6)	3 (3.1)
40 to 60	13 (25.5)	13 (25.5)	12 (23.5)	44 (46.4)	35 (36.8)	18 (18.9)
60 to 80	20 (39.2)	15 (29.4)	19 (37.2)	38 (40.0)	24 (25.3)	58 (61.1)
> 80	3 (6.0)	2 (3.9)	11 (21.7)	3 (3.1)	0 (0)	16 (16.9)
Total	**51**	**51**	**51**	**95**	**95**	**95**

Source: Computed from the ASI sources of data.

Figures in parentheses are percentages to the total.

Table 3.6 shows that in the overall period only 1.9 percent of selected piece rate industries had the growth rate of capacity utilization in the range of 0 to 20 per cent. 27.4 per cent and 25.5 per cent of them were in the growth range of 20 to 40 percent and 40 to 60 percent of capacity utilization respectively. Nearly 45 percent of selected piece rate industries were in the range of more than 60 percent of growth rate.

During the pre-reform period it is observed that 15.7 per cent of selected piece wage industries had less than 20 per cent rate of capacity utilization. 25.5 percent of them were in the range of 20 to 40 per cent and yet another similar group was in the range of 40 to 60 per cent. 29.4 percent of them were found in the range 60-80 percent of capacity utilization during this period. Nearly 33 per cent of selected piece rate industries were in the range of more than 80 per cent rate of capacity utilization.

In the post-reform period, it is also observed that nearly 82 per cent of selected piece wage industries were in the range of more than 40 per cent of rate of capacity utilization. These results indicate that the liberalization policy had positive impact on capacity utilization in the piece rate industry group.

Under time rate industry group, it is found that only one per cent of the industries had less than 20 per cent rate of capacity utilization during the overall period. 9.4 per cent and 46.4 per cent of them were in the ranges of 20 to 40 per cent and 40 to 60 per cent rate of capacity utilization respectively during this period. Nearly 45 percent of selected time wage industries were in the range more than 80 per cent rate of capacity utilization.

During the pre-reform period, it is observed that 6.3 percent of selected time rate industries experienced less than 20 percent rate of

capacity utilization. It is also observed that nearly 31.6 percent and 36.8 percent of them were in the ranges of 20 to 40 and 40 to 60 per cent rate of capacity utilization respectively. Whereas during the post-reform period 62 per cent of selected industries were in the range of 60 to 80 per cent rate of capacity utilization.

During the post-reform period 16.9 per cent were in the range of more than 80 percent rate of capacity utilization. It clearly indicates that the liberalization policy had positive impact on rate of capacity utilization in the time rate industry group also. There fore, it may be concluded that both piece and time rate industry groups were found to have better utilization of capacity during the post-reform period.

3.8 GROWTH OF LABOR PRODUCTIVITY

Productivity is an index of an economic measure of efficiency with which human resources as a whole are utilized in the production process. The productivity would be as an indicator of real wages and relative prices. In the recent years, productivity has been used as objective and scientific measures for lasting the trends in the major sectors of the country's economy and its' prospects. A better appreciation of productivity can help us in understanding critical issues clearly and lead to the formulation of appropriate economic policies and management practices.

Labor is one of the most important determinants of productivity. The human elements play a vital role in extracting productivity generating capacity, optimum utilization of resources and even minimizing industrial disputes.

The labor productivity would be a major factor in the choice of technology and in the employment of labor. When labor productivity is increasing, the country's economy would show improvements in the National income. It also would help in finding out the over all improvement of the industrial units. The introduction of modern labor-saving devices and new methods of production have led to a significant increase or in some cases decrease in the productivity of labor. Therefore, right from the beginning, Indian planners emphasized that the labor productivity is the key factor in solving the problems of India's poverty. Table 3.7 presents the growth rate of labor productivity in the selected industries during the period under study.

TABLE 3.7
DISTRIBUTION OF SELECTED INDUSTRIES IN INDIA BY GROWTH RATE OF LABOR PRODUCTIVITY

Sl. No.	Growth rate of Labor Productivity (in Per cent)	*Number of industries under Piece Rate System*			*Number of industries under Time Rate System*		
		Overall	*Pre-Reform*	*Post-Reform*	*Overall*	*Pre-Reform*	*Post-Reform*
1.	< 0	4 (7.8)	2 (3.9)	8 (15.6)	1 (1.0)	2 (2.1)	4 (4.2)
2.	0 to 5	4 (7.8)	4 (7.8)	14 (27.4)	6 (6.3)	15 (15.6)	17 (17.9)
3.	5 to 10	20 (39.2)	13 (25.4)	14 (27.4)	34 (35.7)	25 (26.3)	22 (23.2)
4.	10 to 15	13 (25.4)	13 (25.4)	3 (5.8)	29 (30.5)	20 (21.0)	19 (20.0)
5.	15 to 20	3 (5.8)	8 (15.6)	3 (5.8)	10 (10.5)	18 (19.0)	13 (13.7)
6.	> 20	7 (14.0)	11 (21.9)	9 (18.0)	15 (16.0)	15 (16.0)	20 (21.0)
	Total	**51**	**51**	**51**	**95**	**95**	**95**

Source: Computed from the ASI sources of data.

Note: Figures in parentheses are percentages to the total.

Table 3.7 shows that 7.8 per cent of selected piece rate industries had negative trend in labor productivity during the overall period. It is also observed that another 7.8 per cent of them registered 0 to 5 per cent growth rate of labor productivity. In addition, 39.2 per cent of them were in the range of 5 to 10 per cent, 25.4 per cent of industries were in the range of 10 to 15 per cent, 5.8 per cent were in the range of 15 to 20

per cent of growth rate labor productivity during the study period. 14 per cent of the selected piece rate industries recorded more than 20 per cent growth rate during this period.

As far as pre-reform period is concerned, it is observed that 3.9 per cent of piece wage rate industries had negative trend in labor productivity. Nearly 66 per cent of them were in the range of more than 5 per cent growth rate labor productivity in this period.

During the post-reform period it is noted that 15.6 per cent of these industries were in the negative trend in labor productivity. It is also found that nearly 30 per cent of them recorded more than 10 per cent of average annual growth rate of labor productivity.

On the whole, the growth rate of labor productivity during pre - reform period was higher than that of the same in the post-reform period. It clearly indicates that the liberalization process had a some what negative effect on labor productivity in piece rate industry group.

During the overall period, it is observed that only one per cent of the industry under time rate industries had negative trend. However, 2.1 per cent and 4.2 per cent of them had negative trend during the pre - reform and post-reform periods respectively. There is no significance difference in the growth rate of labor productivity during post-reform periods among time rate industry group. Thus, it can be inferred that the impact of New Economic Policy on time rate industry group in

terms of labor productivity is satisfactory during the study period. While piece rate industries showed a negative impact, time rate industry group showed almost positive labor productivity after the introduction of reforms. This may be due to a considerable increase in capital invested in these industries during the study period.

3.9 GROWTH OF CAPITAL PRODUCTIVITY

The capital productivity mainly depends upon quality of capital. Generally workers having better provisions and facilities will be more productive than workers who do not have. Table 3.8 presents the details of capital productivity among selected industries.

TABLE 3.8

DISTRIBUTION OF SELECTED INDUSTRIES IN INDIA BY THE GROWTH RATE OF CAPITAL PRODUCTIVITY

Sl. No.	Growth rate of capital Productivity In per cent	*Number of industries under Piece Rate System*			*Number of industries under Time Rate System*		
		Overall	*Pre-Reform*	*Post-Reform*	*Overall*	*Pre-Reform*	*Post-Reform*
1.	< 0	38 (74.5)	39 (76.4)	38 (74.5)	82 (86.6)	80 (84.2)	78 (82.1)
2.	0 to 5	4 (7.8)	3 (5.8)	3 (5.8)	2 (2.1)	4 (4.5)	7 (7.3)
3.	5 to 10	3 (5.8)	2 (3.9)	2 (3.9)	2 (2.1)	2 (2.1)	4 (4.5)
4.	> 10	6 (11.9)	7 (13.9)	8 (15.8)	9 (9.2)	9 (9.2)	6 (6.1)
	Total	**51**	**51**	**51**	**95**	**95**	**95**

Source: Computed from the ASI sources of data.

Figures in parentheses are percentages to the total.

During the overall period, it is found that 74.5 percent of selected piece rate industries had negative trend of capital productivity. The remaining 25.5 per cent of them recorded a positive trend. It is observed that 76.4 per cent and 74.5 percent of selected piece rate industries had negative trend during pre-reform and post reform periods respectively. This result indicates that there is no improvement in capital productivity growth in piece wage industry group during post -reform period.

During the overall period, it is also observed that 86.6 percent of the selected time rate industries had negative trend in capital productivity. It is also found that nearly 84.2 percent and 82.1 percent of them had negative capital productivity during pre-reform and post-reform periods respectively.

It is found that majority of both piece and time rate industry groups had negative sign in capital productivity during study period and therefore it may be concluded that there was no impact of liberalization on the introduction of new capital in these industrial groups.

3.10 GROWTH OF TOTAL FACTOR PRODUCTIVITY

Low Total Factor Productivity Growth (TFP_G) or its negative trend is a commonly observed feature in most of the developing economies. The present study follows the growth accounting concept to

measure Total Factor Productivity in selected industries with recent data along with price indices to make necessary price correction. India's Economic policies are geared towards economic growth. Rise in productivity in all sectors is essential to put the country on the growth path. There are many studies that systematically analyze the productivity in aggregate manufacturing sectors of the economy. The present study analyses the trends in growth of TFP in selected Indian industries under the major classification of piece rate and time rate industry groups at the disaggregate level during pre and post-reform period. Table 3.9 presents the growth rate of Total Factor Productivity (TFP) in selected Industries.

TABLE 3.9
DISTRIBUTION OF SELECTED INDUSTRIES IN INDIA BY THE GROWTH RATE OF TOTAL FACTOR PRODUCTIVITY

Sl. No	Growth rate of TFP (in Per cent)	*Number of industries under* Piece Rate System			*Number of industries under* Time Rate System		
		Over all	*Pre Reform*	*Post Reform*	*Overall*	*Pre Reform*	*Post Reform*
1.	< 0	32 (62.7)	27 (52.9)	30 (58.6)	73 (76.7)	72 (75.7)	63 (66.3)
2.	0 to 5	7 (13.7)	14 (26.7)	9 (17.4)	11 (11.7)	8 (8.4)	17 (18.0)
3.	5 to 10	5 (9.9)	3 (6.7)	4 (7.3)	2 (2.1)	7 (7.3)	8 (8.4)
4.	> 10	7 (13.7)	7 (13.7)	8 (15.6)	9 (9.5)	8 (8.4)	7 (7.3)
	Total	**51**	**51**	**51**	**95**	**95**	**95**

Source: Computed from the ASI sources of data.

Note: Figures in parentheses are percentages to the total.

During the over all period, Table 3.9 reveals that 62.7 per cent of the selected piece rate industries had negative trend in TFP growth. The remaining 37.3 per cent of them had positive trend. It is observed that 52.9 percent and 58.6 percent of them had a negative trend during pre-reform and post-reform periods respectively. This result indicates that there is no significant improvement in TFP growth in piece rate industry group during the post reform period.

During the over all period, It is observed that 76.7 per cent of the selected time rate industries had negative trend in TFP growth. Moreover, It is also found that 75.7 per cent and 66.3 per cent of them had negative growth in TFP growth during pre-reform and post-reform periods respectively.

During post-reform period, nearly 10 per cent of the selected time rate industries were transformed from negative trend to positive trend in TFP growth. This indicates that the liberalization policy have some positive impact on time rate industries in terms of TFP growth.

3.11 WAGE RATE

Table 3.10 presents the ranges of the wage rate in Indian Rupees in the selected piece and time rate industries during the period under study.

TABLE 3.10
DISTRIBUTION OF SELECTED INDUSTRIES IN INDIA BY WAGE RATES

Sl. No.	Wage Rate (in Rupees)	*Number of industries under Piece Rate System*			*Number of industries under Time Rate System*		
		Over all	*Pre Reform*	*Post Reform*	*Over all*	*Pre Reform*	*Post Reform*
1.	< 5000	8 (15.7)	9 (17.6)	6 (11.7)	4 (4.2)	6 (6.3)	3 (3.1)
2.	5000-10000	37 (72.6)	37 (72.6)	35 (68.8)	21 (22.1)	23 (24.3)	18 (18.9)
3.	10000 -15000	6 (11.7)	5 (9.8)	10 (19.5)	31 (32.6)	31 (32.6)	31 (32.6)
4.	15000 -20000	0 (0)	0 (0)	0 (0.0)	31 (32.6)	31 (32.6)	27 (28.4)
5.	> 20000	0 (0)	0 (0)	0 (0)	8 (8.5)	4 (4.2)	16 (17.0)
	Total	**51**	**51**	**51**	**95**	**95**	**95**

Source: Computed from the ASI sources of data.

Figures in parentheses are percentages to the total.

During the overall period, among the piece rate industry group 15.7 per cent had wage rate less than Rs. 5000 per annum. While 72.6 per cent of them had wage rate in the range of Rs. 5000 to Rs. 10000, only 11.7 per cent had wage rate in the range of Rs. 10000 to Rs. 15000 per annum. Surprisingly, none of the piece rate industries had wage rate above Rs. 15000 for all the three periods.

Among piece rate industry groups, 11.7 per cent, 9.8 per cent and 19.6 per cent of selected industries were in the range more than

Rs.10000 per annum as wage rate during overall, pre reform and post reform period respectively. Similar is the case of nearly 73 per cent, 70 per cent and 78 per cent in time rate industries during overall, pre-reform and post-reform period respectively

During the over all period, nearly 75 percent of selected time wage industries had wage rate of more than Rs.10000 per annum and 8.5 per cent of them had a wage rate of more than Rs.20000 per annum. As far as time rate industries are concerned, in the pre-reform period, while only 4.2 per cent of them were in the wage rate of more than Rs.20,000 per annum, it was increased to 17 per cent of them is more than Rs. 20,000 range in the post-reform period. Therefore, it can be inferred that the wage rate has been increasing after reforms in time rate industry group.

Therefore, it may be inferred that the wage rate in piece rate industry group was very low compare to time rate industry group during study period. This may be due to the reason that time rate industries are capital intensive in nature over several decades. Moreover, under piece rate system, the earnings of workers will directly depend on their performance. So, workers under piece rate system have to achieve some basic standard of output beyond which they can differ in performance and pay. "A positive relation between wages and national income is to be established, and it is also to be ensured that

a rising wage with rising national income does not create any inflationary problem. Further, wage plays not only a distributive function but also allocative functions".[57]

3.11.1 GROWTH OF WAGE RATES.

Wage rate and its' growth is a significant issue in any country and it is an indicator of the well being of the working class. Table 3.11 presents the growth of wage rate in piece and time wage rate industries.

TABLE 3.11
DISTRIBUTION OF SELECTED INDUSTRIES IN INDIA BY GROWTH OF WAGE RATES

Sl. No.	Growth of Wage Rate	*Number of industries under Piece Rate System*			*Number of industries under Time Rate System*		
		Over all	*Pre Reform*	*Post Reform*	*Over all*	*Pre Reform*	*Post Reform*
1.	< 0	4 (7.8)	3 (6.0)	12 (23.5)	2 (2.1)	6 (6.3)	15 (15.7)
2.	0 to 5	35 (68.6)	30 (58.8)	28 (54.9)	74 (77.8)	60 (63.1)	63 (66.5)
3.	5 to 10	9 (17.5)	11 (21.5)	8 (15.6)	15 (15.7)	22 (23.1)	15 (15.7)
4.	> 10	3 (6.0)	7 (13.7)	3 (6.0)	4 (4.4)	7 (7.5)	2 (2.1)
	Total	**51**	**51**	**51**	**95**	**95**	**95**

Source: Computed from ASI sources of data.

Figures in parentheses are percentages to the total

[57] V.B. Singh, "Principles for determining share of wages in National Income" Indian Journal of Labor Ecnomics, Vol.VI,No: 4,January,1964,pp325-328.

During the over all period, Table 3.11 shows that 7.8 per cent of selected piece rate industries recorded a negative trend of wage rate, 68.6 per cent, 17.5 and 6 per cent of them were in the range of more than 0 to 5, 5 to 10 and greater than 10 per cent respectively.

In the pre-reform period, 6 per cent of selected piece rate industries had negative growth rate of wage rate. 58.8 per cent of them recorded the growth rate of wage rate in the range 0 to 5 per cent, 21.5 per cent of them in the range of 5 to 10 per cent and 13.7 per cent of selected industries are above 10 per cent growth rate of wage rate in piece rate industry group during the pre-reform period.

For the post-reform period, 23.5 per cent of selected piece rate industries registered a negative growth of wage rate. 54.9 per cent of them registered the growth of wage rate in the range of 0 to 5 per cent. 15.6 per cent of them are in the range of 5 to 10 per cent and at last 6 per cent of them were above 10 per cent of growth of wage rate. From the above table, it can be inferred that the liberalization process have negative impact on the growth in wage rate in piece rate industry group.

During the over all period, in time rate industry group, 2.1 per cent of selected time rate industries registered a negative growth of wage rate. 77.8 per cent of them registered growth of wage rate in the range of 0 to 5 per cent, 15.7 per cent of selected industries in the range

of 5 to 10 per cent and 4.4 per cent of selected time rate industries were above 10 per cent.

For the pre reform period, 6.3 per cent of selected time rate industries registered a negative growth of wage rate. 63.1 per cent of them registered in the range 0 to 5 per cent, 23.1 per cent of them in the range of 5 to 10 per cent and 7.5 per cent of selected time rate industries above 10 per cent of growth of wage rate during this period.

During the post-reform period, it is found that 15.7 per cent of selected time rate industries recorded a negative trend in growth of wage rate. 66.5 per cent of them registered in the range of 0 to 5 per cent. 15.7 per cent of them in the range of 5 to 10 per cent and at last 2.1 per cent of selected time rate industries were above 10 per cent of growth of wage rate. The following table 3.12 gives the share of labor in value added in Indian industries during the overall period.

TABLE 3.12
DISTRIBUTION OF SELECTED INDUSTRIES IN INDIA BY THE SHARE OF WAGES IN VALUE ADDED

Sl. No.	Share of wages in value added in Per cent	*Number of industries under Piece Rate System*			*Number of industries under Time Rate System*		
		Over all	*Pre Reform*	*Post Reform*	*Over all*	*Pre Reform*	*Post Reform*
1.	<10	0 (0)	0 (0)	1 (2.0)	1 (1.1)	1 (1.1)	3 (3.2)
2.	10 to 20	0 (0)	0 (0)	2 (3.9)	8 (8.4)	2 (2.1)	25 (26.3)
3.	20-30	7 (13.8)	1 (2.0)	15 (29.4)	31 (32.6)	22 (23.1)	28 (29.4)
4.	30-40	17 (33.4)	12 (23.6)	14 (27.4)	32 (33.7)	31 (32.6)	19 (20.0)
5.	40-50	9 (17.6)	18 (35.3)	5 (9.8)	5 (5.3)	22 (23.1)	10 (10.6)
6.	50-60	9 (17.6)	8 (15.7)	4 (7.8)	12 (12.6)	8 (8.4)	5 (5.3)
7.	60-70	4 (7.8)	5 (9.8)	6 (11.8)	0 (0)	1 (1.1)	1 (1.1)
8.	70-80	3 (5.8)	3 (5.8)	1 (2.0)	1 (1.0)	2 (2.1)	0 (0)
9.	80-90	0 (0)	1 (2.0)	2 (3.9)	1 (1.0)	3 (3.2)	1 (1.1)
10.	90-100	2 (4.0)	3 (5.8)	1 (2.0)	4 (4.3)	3 (3.2)	3 (3.2)
	Total	**51**	**51**	**51**	**95**	**95**	**95**

Source: Computed from the ASI source of data.

Figures in parentheses are percentages to the total.

Table 3.12 shows that 35 per cent of selected piece rate industries had more than 50 percent of share of wages in value added and no one had below 20 percent of share in value added during the over all period.

During the pre-reform period, same trend as in the case of over all period was found. However during the post-reform period, it was nearly 70 per cent which indicates that the share of wages in value added for piece rate industry groups had declined, when compared to that of pre- reform period. Therefore, it can be inferred that the liberalization has led to the transformation of piece rate industries from labor intensive into capital intensive.

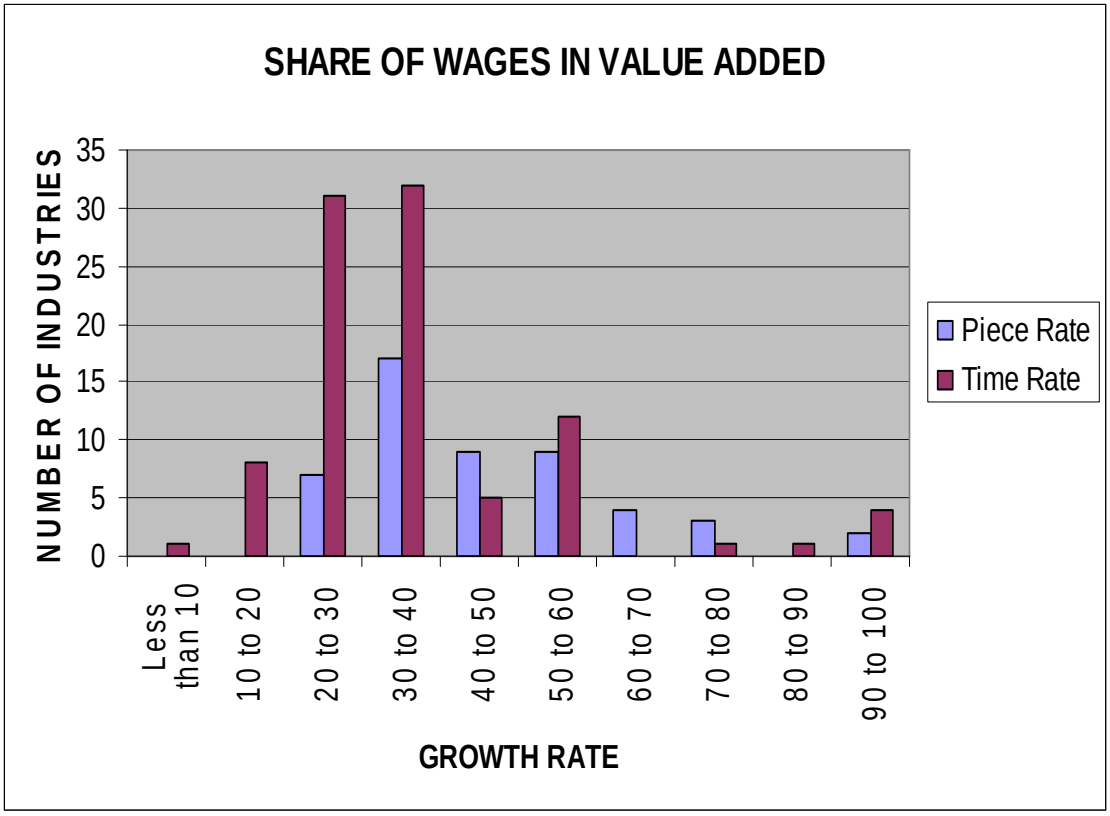
During the over all period, nearly 80 per cent of the selected time rate industries had the share of wages in the value added below the range of 50 per cent. It is also found that nearly 3 percent of such industries had less than 20 percent of share in value added during the pre-reform period. At the same time, the post-reform period, 30 percent of selected industries had similar performance. Therefore, it may be concluded that the share of wages in value added in time rate industry groups had also declined during the post-reform period.

From the fore going analysis of share of wages in value added, it is to be noted that the time rate industry group is capital intensive in nature and the piece rate industry group is labor intensive in nature.

Further the analysis also indicates that there is a significant difference in share of wages in value added between piece and time rate industry groups.

The following figure presents the details of growth rate of share of wages in value added in piece and time wage industries.

FIGURE 3.2



On the whole, in piece rate industry groups, it is observed that there is a declined growth of share of wages. At the same time, the size of the growth of share of wages time rate the industrial groups are

relatively higher. It is inferred that the time rate industries are in a better position of labor, where as the piece rate industries are not.

3.12 TRENDS IN SELECTED VARIABLES OF SELECTED HIGH PIECE AND TIME RATE INDUSTRIES AT THE ALL INDIA LEVEL

The present section attempts to analyze the trends in wage and related variables between piece and time rate industries at the All India level during the over all period. This part of analysis covers the high piece and time wage industries with six in each category for an in depth calculation towards the objectives of the study. A study of the performance of individual industries is necessary to have a better understanding of the phenomenon as well as for the delineating the area of remedial action for industrial labor and wage policy. In order to find out the wage and productivity nexus at the individual industry level, the present section tabulates selected six major industries each under piece and time rate industry groups. "Cotton Textiles*, Leather, Matches, Beedi, Jute spinning and wool spinning industries where piece rate system are widely prevalent have been selected for the category of piece rate industry group. Iron and steel*, chemicals, sugar, cement, tyre and tubes and fertilizer industries where time rate system is most

popular have been selected for the category of time rate industry group"[58].

The basis for the selection of industries for the present study has been guided by a number of factors. Firstly these industries are major industries in India. Secondly these industries are most suited with regard to the measurement of performances with more than 75 per cent of high piece rate industries and high time rate industries in India respectively. Moreover, field visits at the district level were made to verify the common practices and various modalities of wage payment in the manufacturing units with regard to the piece and time rate industries in Madurai District.

Employment is one of the important economic variables attracted by the recent decades of changes that are taking place in the Indian Industries. A labor abundant country should make use of the available labor force instead of spending huge amount of capital on the substitutes to labor. Labor and wage policy should be framed in such a productive way to generate more employment in the country. The overall trends in growth of employment, capital, value added and real wage rates for piece and time rate industries in India are presented in Table 3.13.

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[58] G.K. Suri*, Wage Incentives: Theory and Practice, Shri Ram Centre for Industrial Relations and Human Resources, New Delhi, 1976,p38-39.

Negative growth was found in iron and steel industry during post-reform period and in sugar industry, it was also negative for both during pre and post-reform periods. However the latter case registered a substantial improvement in employment from -5.2 percent to –0.8 percent during the post-reform period.

The major difference between the piece and time rate industry group was the growth rate employment for all the piece rate industries have positive sign in the post-reform period with an exception of leather industry.

Regarding the growth rate of capital, it is found that the wool spinning industry registered the highest growth rate of 29.75 percent during the over all period. The growth rate of capital for all piece rate industry group was positive during the overall, pre and post-reform periods. The growth rate of cotton textiles and matches during the post-reform period was higher than that of other industries during the pre-reform period. The average annual growth rate of capital alone in match industries substantially increased from 11 percent in pre reform period to 30.3 percent in the post-reform period.

As far as time rate industries are concerned, they had registered a notable growth rate of capital during the study period. The growth rate of capital had marginally decreased during the post-reform period for these industries. In all the time industries, growth rates are much lower

in the post reform period than pre-reform period except fertilizer industry.

Both piece and time rate industries achieved higher growth rate in capital than employment during the study period. But the growth rates of capital registered a marginal decrease in post-reform period for the selected high piece and time rate industries in general.

It is evident that the growth rate of value added for all industries increased during the post-reform period for all piece rate industry group. The match industry had a very high growth rate of 15.8 per cent in the post-reform period from 8.4 per cent in value added during pre-reform period. The growth rate of value added for jute spinning was – 2.3 percent during the pre-reform period, but it was 7.9 percent during post reform period which is a positive sign of improvement.

The industry-wise analysis of growth rates of value added for all the industries indicates that there was a marginal increase during the post-reform period for time rate industry group except cement industry. The cement industry in particular achieved high growth rate in value added during pre-reform period. However, the performance of the cement was not encouraging during post-reform period.

On the whole, it is found that the growth rates of value added for all the industries were high and there was significant improvement in their level of performance during the post reform period.

As far as piece rate industries are concerned, the growth in the real wage rates during the over all period are very minimal and in case of leather, jute and wool spinning the same was negative. But time rate industries were better with slightly higher growth rates along with sugar and cement industries with a negative sign. The same conditions prevailed in the pre-reform period also. During the post-reform period, all the selected industries in both the groups had shown negative growth rates with an exemption of iron and steel and chemical industries. It may be inferred that after reforms, the real wage rate had fallen generally. This condition requires serious attention of all concerned with wages.

3.13 TRENDS IN PARTIAL PRODUCTIVITIES

The overall trends in growth of partial productivities, Capital intensities and Total Factor Productivity (TFP) in high piece and time rate industries in India during the study period are presented in Table 3.14.

But in time rate industry group, the industry wise growth rates of labor productivity during the post-reform period are found to have fallen except in iron and steel industry and tyre and tubes. This may be due to the inefficient use of productive resources in the post-reform period. On the whole, the growth rates of labor productivity for both piece and time rate industry groups are almost found positive in the

study period. The positive sign in labor productivity may be due to the positive growth of capital intensity during the study period.

Regarding capital productivity, it is found that all the industries have achieved negative growth rate during the study period for both piece rate and time rate industry groups. However, the table shows that the average annual growth rates of capital productivity during the post-reform period are almost lower than the pre-reform period.

While comparing the growth rate of capital intensity cotton textiles, leather and matches in the piece rate industry group have attained higher growth rate from the pre-reform to post-reform period.

However, the same is observed that the figures show a sharp decline in the remaining piece rate industries. Interestingly, in the match industry a sharp increase is noticed from 9.14 percent to 26.7 percent. This result indicates that piece rate industries formerly labor intensive, have adopted capital intensive techniques in the post-reform period. On the whole, strictly speaking it is found that capital intensity seem to be crucial factor that has resulted in increasing value added.

While the growth rate of capital intensity was found to be marginally declined in all the time rate industries in the post-reform period and the same was increasing, in some of the industries of the piece rate group such as cotton textiles, leather and matches which are highly labor intensive in nature.

The piece rate industry wise growth rates of Total Factor Productivity (TFP) during post-reform period are higher than those during pre reform period except Beedi industry and cotton textiles. Cotton textile and wool spinning industries have achieved a negative growth of Total Factor Productivity (TFP) during post-reform period.

It is found that the growth rates of Total Factor Productivity (TFP) during post-reform period are higher than the pre-reform period for iron and steel, sugar and tyre and tubes industries in time rate industry group. It is observed that the growth rate of Total Factor Productivity (TFP) during the post-reform period are lower than the pre-reform period for chemicals, cement and fertilizer industry. Thus there seem to be a fluctuating growth path of Total Factor Productivity (TFP) in the selected Indian Industries.

The following Table 3.15 presents the average annual Capital-Output ratio of the selected six industries each in piece and time rate industries during the study period.

TABLE 3.15
DISTRIBUTION OF SELECTED HIGH PIECE AND TIME RATE INDUSTRIES IN INDIA BY THE AVERAGE ANNUAL CAPITAL - OUTPUT RATIO

Sl.No.	Industry	OVER ALL	PRE-REFORM	POST-REFORM
	Piece Rate Industries			
1.	Cotton Textiles	2.6	1.8	3.8
2.	Leather	1.8	1.5	2.4
3.	Matches	0.92	0.77	1.15
4.	Beedi	0.13	0.08	0.2
5.	Jute Spinning	1.29	0.96	1.8
6.	Wool Spinning	1.56	0.92	2.6
	Time Rate Industries			
7.	Iron and Steel	4.8	3.1	7.4
8.	Chemicals	2.5	1.9	3.4
9.	Sugar	1.9	1.3	2.9
10.	Cement	4.1	3.2	5.6
11.	Tyre and Tubes	2.3	1.6	3.6
12.	Fertilizer	3.2	2.5	4.4

Source: Computed from the Annual Survey of Industries (ASI) data.

The concept of capital-output ratio expresses the relationship between the value of capital investment and value of output. This shows that the average capital-output ratio is low except cotton textiles 2.6: 1 during the study period for piece rate industry group.

The average annual capital output ratio during the post-reform period is higher than that of the pre-reform period. The growth rate of value added has also increased during the post-reform period. The low capital-output ratio indicates that the piece rate industries which were operating under labor intensive techniques, have adopted modern technology in the post-reform period.

The time rate industry wise capital-output ratio shows that the average capital output ratio are high except sugar industry during the over all period. In sugar industry, the average annual capital output ratio during the post-reform period is higher than the pre-reform period. Both piece and time rate industries have a tendency of up gradation of technology towards modernization during the post-reform period. Thus, it may be inferred that the new economic policy led to increase in output due to increase in capital - output ratio in Indian industries.

DETERMINANTS OF WAGE RATE

(Selected high Piece and Time rate industries in India)

In order to find out the nature of the relationship between wage rate and related variables such as productivity, employment and capital intensity, assuming a log linear multiple regression models is fitted. This model is given by

Log w = B0 + B1 log Lp + B2 log Emp + B3 log CI

W – Wage Rate

Lp – Labour Productivity Index

Emp – Employment

CI – Capital Intensity Index

During the overall period, it is found that there is no relationship between labor productivity and wage rate for all piece rate industries under study. The variable employment is significant in jute industry only, but capital intensity is positive when related to the wage rate for all piece rate industries except matches and beedi. The performance of workers and their skill is important in determining wage rate in piece rate industry group during the over all study period. The insignificance of capital intensity in matches and beedi was due to these industries operated under labor intensive technique. The following Table 3.16 presents Determination wage rate in Indian piece rate industries.

The total value of capital for those industries was very meager. The positive relationship between labor productivity and wage rate has not been observed in Indian piece rate industry group during the pre-reform period. The coefficient of employment is negative and significant for the leather and wool spinning during this period. This explains that any increase in wage rate leads to reduction in employment in these industries. The capital intensity is positively related to the wage rate in cotton, leather and wool spinning. It is

indicated that the skill of the workmen plays major role in determining wage rate in piece rate industry group during the pre reform period. "Production and productivity tend to be higher in a system of payment by results and that piece raters tend to have higher and instantaneous accrual of share as compared to time raters, in increased productivity."[59]

In piece rate industry group, the labor productivity is not influencing level of wages during the post reform period. There seems to be no evidence of the key variable such as employment in determining the wage level during the post reform period.

The fitted multiple regression results relating to factors influencing money and real wages show that from among the selected independent variables such as average annual growth of output, employment, wage-output radio, output per worker, and fixed capital per worker, only one variable namely, wage-output ratio had greater influence on money and real wages in all the three groups of mills.

The annual growth rates of value added, employment and fixed capital declined in the second period in Group I mills as these mills had lilttle scope for exports and full modernization. The growth rates for the same variables declined to negatived values in Group II mills in the second period as these mills suffered from congenital defects from the

[59] Suri, G.K. "Wage incentives : Theory and Practice, Shri ram Centre for Industrial Relations and human Resources, New Dlhi-5, 19--.p.42

beginning. In Group III mills declined, along with a decline in employment. This is because of full automation and adoption of sophisticated technology that reduced labour complements tremendously.

particularly, the share of wages in value addid by manufacture in percentage fell in Groups I and III mills. The same increased in Group II mills which favoured labour welfare measures as their prime objective in the overall period of study during , 1975-1997. A similar situation was manufacture in percentage in the cotton Textile Industry at the National Level during 1950 as stated by s. c. Srivastava (1984).

In partial productivity measurement, both labour produtivity and capital productivity declined with the latter showing negative valur along with a slilght increase in mills survived on local market. For Group II mills in the second period, both labour and capital productivity, had declilned along with the decline in capital intersity as these mills suffered from paucity of funds. In Group III, in the second period, labour and capital productivity had increased along with increase in capital intersity as these mills introduced new technology to compete in the foreign yarn market.

In the total factor productivity measurement, the growth rates of kendrick, solow and Translogt indices, had declined in Group I mills in the second period compared with the first period. The same situation

prevailed in Group II mills but the growth rates of the above indices had gone negative in value in the second period. But in Group III mills, the growth rates of kendrick, solow and translog indices had considerably increased in the second period. It is obvious that Group I and II mills with partly traditional machinery had limited scope for fulll modernisation, could not gain out of the situation. But the Group III mills with new technology could surpass others.

Employment and union membership has grown slightly while the degree of unionsation had gone negative in the Group I mills in the overall period of study. In Group II mills, the employment growth was low but positive whereas the union membership and degree of unionisation had gone negative in the overall period. In Group III mills , all those variables had gone negative in the overall period of the study.Now-a-days unions agree to proposals regarding restricting future wage demads, the pruning of labour, work-stoppages and emploment of contract workers on a temporary basis as well as raisting productivity through labour- saving technology . However, earlier Abdul Aziz (1972) found that Trand unions were the prime cause for wage increase in the cotton textile Industry.

Among the percentage share of 18 (1) and 12 (3) settlements, two variables namely wage increase and bonus had grown positive. and all other variables such as advance payment of wages. Permanency,

working conditions, settlement of strike and others had gone negative as they had lost their importance with majority if non-permanent workers in the Indial Industrial Scenario over the three decades.

The annual growth rates for money and real wages, consumer price index, real output and profit revealed positive values and the degree of unionisation alone showed a negative value in all the three periods. on the whole, trade unions. lost their strength and employers of these Group I mills were benefited comparatively by better performance in the period of study.

The annual growth rates for group II mills in money and real wages, and reral output have shown positive values while profit and degree of unionisation show negative values in the first period. In the second period, money wage and profit have shown positive values while real wage, real output and degree of unionisation show negative values. However in the overall period, all variables, except degree of unionisation, have shown positive values. This situtation of Group II mills reveals the lack of consistency of these mills.

The annual growht rates for Group III mills in money. wage, real output and profit show positive valuesa while real wage and degree of unionisation show negative valures through out the period of study. The Groups III mills have much benefited due to the introduction of New Technology while the workers in these mills are much affected by

reduced wage share, employment, bargaining power and Trade union rivalry.

Though the annual growth rate of employment in Group I mills is positive with a fall in the second period, the same value is negative for perment workers throughout. In group II mills the growth rate of employment has become negative in the second period along with the growth rate of permanent workers. In Group III mills after the introduction of new technology, the growth rate for employment was low andnegative throuthout, but for the permanent workers it was negative in the second period alone. This shows that in the recent decades, the fight is not between the employers and workers but with machines and for permanency.

The degree of relationship between employment and money wages in Group I mills is strengthened in the second period when compared with the first, as these mills rely upon labour more. For group II mills, the sam,e relationship is positive in the first period but gets reversed with changing technology and labour policy. But in group III mills. The above said relationship is always inverse which reveals that these mills function with more automation and sophisticated machineries. In the earlier period. it was found that wage bill rose relative to the employment in Indian Industry during 1950-61, as revealed by C.K. Johri and N.C. Agarwal (1966).

The fitted simple linear regression results for examining the relationship between employment and real wage show that positive and significant relationship existis between employment and significant relationship exists between employment and real wage in all the three groups of mills during the first and overall period. In the case of the second period employment has no effect on real wages for all the three groupa of mills. As the cotton textile Industry is poised for automatio, there is reduced employment with falling trend in the growth rate of money wages especially after 1986, the real wages being consequently affected.

Over decades, capital intensity for Technology has its impact on labour and ourput. In Group I mills there exists a high degree of positive correlation between the fixed capitsl and employment and it is only moderate in Group II mills. But the same relationship is highly negative in Group III mills. The introduction of automatic and sophisticated machines had resulted in drastic reduction and sophisticated machines had resulted in drastic reduction in the labour-machine ratio. As a result, the gap between them has widened. Moreover, the dependence on plant and machinery made the cotton textile Industry a capital intensive one. This is true especially in the case of Group III mills which function with sophisticated machinery to

minimise wage cost. However, the rate of return on capital can be realised only after a long gestation period.

The influence of the introduction of new technology in the cotton Textile mills helped the Industry to have sophistication at the expense of workers in these mills. the very objective of these mills to reduce the cost of production expecially wage cost, is fulfilled with reduction in employment. This finding is confirmed by Bagarum Tulpule and Ramesh. C. Datta (1989).

CONCLUSION

Basic wages are enhanced with the merger of a considerable portion of the dearness allowance. This has altered the wage structure to some extent. The idea behind this is that the basic wage must be made the pre-dominant element in the pay packet as a step against inflation. On the other side, the increased bonus with expanded ceiling on it has helped the workers to ger more of deferred wage.

Declining employment in general in the second period after 1986, and the structural changes and changing labour polucy in the cotton Textile mills and affected the bargaining power of the workers. Moreover, exploying casual labourers at meagure wages had altered the tremd in money and real wages per worker.

Though there are several factors related to the labour performance and remuneration, wage-out put ratio alone is found to be

controlling the wage cost. Though this favour the employers with more scope for profit, workers are affected by lay-off , power cuts, breakdown of machinery, fall in the demad for finished product and the business cycle that revolves around the cotton Textile Industry.

The age-old cotton textile industry is ofter affected by the drastic policy changes of the central government such as the export of cotton bales to foregin countries, changes in the procedure for export of cotton yarn and in general tariff. Moreover, with the emergence of the new economic policy and globalisation, multinational companies make surprise moves that affact the functiontion of the cotton Textils Industry.

With wages emerging as one of the more controversional issues affecting work life in India, the Government has repeatedly announced its intention of having a National wage Policy. However, this has not led to the to wages. Even critical issues, such as compensation for erosion in money earnings, have not been brought with in the purview of any statutory enactment.

It is time the government came for ward to discuss various issuse related to wage in the Indial Industries. A multi-disciplinary approach to find a real solution for the problem of wages in the country has become imperative.

SUGGESTIONS

Worklosd revision should be uniformly done at frequent intervals atleast at the District or the state level to enable workers to bargain for wage increase with workload as the base. The revision should be based on time and motion study in the interest of proper distribution of workload. Moreover, labour should by involved in the formulation of productivity plans and their implementation, including decision on technology.

Disparate Dearness Allowance systems should by dispensed with, and the wage rqate itself should be adjusted against inflation which would protect the workers from the value-erosion of real wages in order to assure them of better standards of living.

Instead of the existing bonus payment system at the mill level, individual worker bonus based on individual performances that too for a shorter period, such as a month or a week, will by more productive.

Incentive system should be given greater importance to improve produtivity and labour should have a say in sharing gains from improvements in productivity with due regard to the repercussioin on the workforce, particularly on employment and related aspects.

A stable relationship between labour productivity and wage increase should by established. However, the determination of real wages is governed to a large extent by the general price level. So the

government should take necessary steps to control the general price level.

The bluk of payment of wages must be linked to the outcome of work and this implies the notion of the right payment for standard performance. This will call for an appropriate work cluture, work attitude, commitment and behaviour.

Multiplilcity of Trade unions should by avoided by effective legal measures so as to avoid rivalry among the unions. Moreever, the collective bargaining should by conducted with in the parameters of guidelines, to be laid down by a permanent National Standing Commitee on wages, comprising experts on wage Economics.

Wage awards have followed Trade union Pressures resulting in the haphazard growtyh of the wage structure. Especially wages should not go up to the extent of compelling employers to replace labour by capital machinery, as India is labour- abundant and suffeers from unemployment and undter employment.

In the existing situation of labour unrest in the stares, the militancy of labour is found to be a specific feature of Trade unionism which has resulted in pushing up wages and wage shares unrelated to productivity. This tendency is to be changed by imparting work culture, appropriate training for skill development to improve priductivity.

Research Institutions in India conduct several reasearch studies on Technology, Employment, Cost effectiveness and productivity in the cotton Textile Industry. But the results of such studies have not been discussed int eh employers forum of the cotton Textile Mills for effective Implementation.

A successful and socially significant wage polycy can by built up only ona strong foundation of correct and meaningful data on various aspects of the probelm, such as payments in Indian Industries. These are essential as the process of wage determination and wage revision in India is at present decentralised.