AN ANALYSIS OF WAGE TRENDS IN MANUFACTURING INDUSTRIES IN INDIA

THESIS FOR THE DEGREE OF PH. D.
MICHIGAN STATE UNIVERSITY

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1967

AN ANALYSIS OF WAGE TRENDS IN MANUFACTURING INDUSTRIES IN IN[illegible], 1950-1960

by

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SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

at the

MICHIGAN STATE UNIVERSITY

September [illegible]

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Chapter I

Introduction

The period 1950-1960 has been one of general economic expansion for the Indian economy in which incomes rose and industry expanded. There was an increase in the wages of workers in mining and manufacturing industries. The government's earlier pronouncements on wage policy showed a deep concern for upgrading the economic position of the factory worker in the interest of social justice. Later, the claims for economic development led to a revision of this attitude in the interests of promoting saving, capital formation, and growth. A wage policy to facilitate growth had its economic and social implications. There was a call for wage restraint to prevent wages from exerting an inflationary pressure on the economy. From the social point of view, wage policy had to move in the direction of securing a reduction of inequality in income distribution.

This study is based on the belief that during the period 1950-1960, considerable changes in wage trends and differentials had taken place, and the nature of these changes and the economic factors influencing them had not been clearly understood. The study chiefly concerns itself with these aspects of wages as they relate to manufacturing industries for the above period.

In the literature on economic development, a familiar theory holds that the level of wages in the industrial sector is constant during the early stages of industrialization of a developing economy, which is endowed with a surplus of labor.[1] The existence of this surplus is believed to give rise to a perfectly elastic supply curve of labor to industries which would hold industrial wage rates at a constant level. This theory raises interesting possibilities for the study of wage trends in India and for considering the issues raised in the formulation of a wage policy. These follow from the fact, that though there may be factors tending to depress the level of wages in Indian industries, it is possible even at an early stage of industrialization, for wages to rise in particular industries or regions, or reveal considerable differentials between industries or regions, or to do both on a more disaggregated level. This makes it necessary to distinguish between the level of wages and wage differentials in order to consider the influence of

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[1] John Fei and Gustav Ranis, Development of the Labor Surplus Economy: Theory and Policy, the Economic Growth Center, Yale University, 1964, pp. 260 ff. For earlier references see, W. A. Lewis, "Economic Development with Unlimited Supplies of Labour", The Manchester School of Economic and Social Studies, Vol. XXII, May 1954, pp. 139-91; also his "Unlimited Labour: Further Notes", same journal, Vol. XXVI, No. 1, Jan. 1958, pp.1-31.

the various economic factors, some of which would influence the level, while others would affect the shaping of differentials. From a policy standpoint, the role of wage differentials assumes importance in focussing on relative supply scarcities for various categories of labor at an early stage of development.

This chapter will be devoted to a review of the literature specifically relating to studies on wage trends and differentials in Indian industries. The various approaches adopted in previous studies will be emphasized and this will serve to show the need for undertaking the present study. I shall comment on the work of seven writers. Three of these works are doctoral dissertations in American universities and belong to a separate category of academic research. Two others are the work of researchers in government institutions. One is the outcome of research at the industry level in the private sector and one more that of an individual researcher. Of the works reviewed, two may be regarded as long term studies dealing specifically with the cotton textile industry, and the rest as focussing relatively on shorter periods. Each study is referred in a chronological order except the two long term studies which are referred to in the end, as they emphasize the historical aspects of development in a specific industry.

S. A. Palekar investigated[1] the trends in real wages in India for the period 1939-1950. The main purpose of his study was to "investigate as objectively as possible such important facts about the impoverishment of industrial workers in India."[2] He considers industry and state series of indexes on real wages, money wages, employment and cost of living for the period 1939-1950. He shows that in engineering, minerals and metals, government local fund factories, paper and printing, cement, skins and hides and miscellaneous groups of industries, real wages had declined relative to the position held by them in the base year. The period from 1942 to 1947 stands out rather prominently as one in which real wages were below the base year level in all the industries, whereas textiles and the chemical and dyes group stand out prominently amongst those industries which recorded real wage gains in the post war period.[3] Among the states, Bihar, Bombay, Orissa and Punjab showed a decline in real wages compared to their base year position. He observes that

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[1] S. A. Palekar, Real Wages in India, International Book House (Private) Ltd., Bombay, 1962. The book forms the author's dissertation for the Ph.D degree at Harvard University.

[2] Ibid. p. 2.

[3] Ibid. p. 157

the movement of real wages in the various states disclosed generally a pattern of continuous decline between 1939 and 1943 and of a steady rise thereafter till the end of the period.[1] Though his study deals mainly with real wages, he also draws some conclusions on the movement of money wages. He finds that money wages rose in all the industrial groups throughout the entire period.[2] In the states, the picture, according to him, was one of continuous rise with minor recessions. "Broadly speaking, money wages by 1950 reached a level of between three and four times the 1939 level in almost all the states."[3]

The value of Palekar's work lies in the prodigious amount of statistical material presented by him in this relatively neglected field of enquiry in Indian economics. In the maze of data one finds it difficult to pin point his main conclusions. One broad conclusion he reaches is summed up when he says, "An examination of the all-India real wage series revealed that by 1950, the workers had just managed to regain their base-year level of real wages.."[4] He stresses chiefly two factors for this, namely the failure of

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[1] Ibid. p. 111.

[2] Ibid. p. 158.

[3] Ibid. p. 112.

[4] Ibid. p. 175.

earnings to keep pace with the steep rise in working class cost of living on the one hand and the chronic gap up to 1947 between the earnings of the workers and the profits of the industry on the other.[1] His main concern throughout has been to establish the fact of the impoverishment of the industrial worker in India. He also shows that, while money wages have gone up, real wages have not increased but have just managed to reach their base year position. However, the study of real wage trends in India is beset by the limitations surrounding the use of the existing data on consumer price index numbers, and in the face of this, the rather emphatic conclusions reached by him must be questioned. Later in this study we will show these limitations in examining the developments in real wages after 1950.

Philip Kotler has studied the course of industrial wages and industrial wage policy in the post 1939 period.[2] He has examined the structure as well as the level of wages. In the former, he deals with wage differentials and in the latter, has presented an index of real wages of his own for the period 1950-1954.

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[1] Ibid. p. 107.

[2] Philip Kotler, Problems of Industrial Wage Policy in India, unpublished Ph.D. Thesis, Massachusetts Institute of Technology, Cambridge, Aug. 1956.

In dealing with inter-regional wage differentials, he chooses the years 1939, 1947, 1950, and 1954 as the years to consider the changes in the ranks of nine states and the size of the differential between the high paying and the low paying states, choosing two in each case. He concludes that wide differences existed among the regions and that these differentials had shown a tendency to narrow since 1939.[1] He does not, however, draw a comparison between absolute and percentage differences. All his conclusions are based on percentage differences. He then deals with inter-industrial differences, and ranks eleven industries for the years 1939 and 1949, according to their average annual earnings, in order to examine the rankings of the major industries in these two years. Next he ranks several other industries based on the post 1950 industrial classification for the year 1954, and has merely listed them for 1950, 1951, 1952, and 1953. He observes that between 1939 and 1949 no change at all was observed in the position of the lower paying industries. His conclusion on wage differentials is that "the substantial wage differential between the

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[1] Ibid. p. 260.

highest and lowest paying industries have not shown any tendency towards compression".[1] He also concludes that skill differentials in India remain substantially larger when compared to some of the advanced western countries, even though they show a tendency for narrowing.[2] But the examination of wage differentials is not the main part of his study and he has not undertaken any detailed ranking of industries or states nor has he addressed himself to both percentage and absolute changes.

Kotler's approach to the study of industrial wages goes one step further than that adopted by Palekar. While Palekar concentrates his attention on the level of wages, Kotler has attempted to analyse wage differentials. He further suggests certain factors for the existence of differentials between the high paying and the low paying industries. In this sense he has opened the way for further research in this direction. However, neither of them have investigated the factors responsible for influencing the level of wages or its differentials by keeping these two aspects of the question separate. For instance, in explaining the narrowing of skill

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[1] Ibid. p. 272.

[2] Ibid. p. 292.

differentials, Kotler cites increased acquisition of skill, growth of unions, uniform wage fixation and government intervention as factors that would unfold and develop as industrialization progresses, contributing to a narrowing of extreme differences in income and the securing of equal pay for equal work.[1] The question may be asked whether some of these factors may influence only the level of wages while others may affect wage differentials. Or again it may be asked whether we have enough empirical evidence to draw such conclusions so that the question becomes one of examining more carefully the existing data on trade union strength, government intervention in wage fixing and on increased acquisition of skills.

Before we leave the review of these two attempts to study the course of industrial wages, a word must be said about the kind of data utilized in the studies. Both studies are based on earnings data reported under the Payment of Wages Act of 1936. Kotler has clearly pointed out the limitations surrounding the use of this data.[2] He shows that for undertaking a study of wage

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[1] Ibid. pp. 273-74.

[2] Ibid. p. 297 ff. Under the Act, returns are published only for those employees earning below Rs 200 per month. This limit on reporting earnings tends to understate the extent of increase when workers move to a higher wage bracket from one year to the next.

trends, this source tends to understate the extent of increase in wages.[1] However, for the earlier period which Palekar has studied, data reported under this Act was the only comprehensible source available. But in 1946 the Census of Manufactures came into existence and this source has been utilized in the present study. In reporting the data the Census does not make a distinction on the basis of a worker's earnings and does not include, on this basis, categories of workers. But it provides separate data for workers and other salaried employees. Besides, the earnings reported under the Census include the money value of various benefits or concessions received by the workers. These in many cases could be substantial amounts, and in a period of industrial expansion, could increase considerably. A reference to this has not been made in the data reported under the Payment of Wages Act. Owing to these differences in the Census data, it is hoped that a clearer picture of wage trends can be presented in this study than has been possible before. Though at the time of his writing Kotler could have used the Census data, he has not done so because he

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[1] To the extent we have this downward bias in the use of this source, Palekar's findings on real wages must be taken with some reservations.

believed that an index of earnings based on either source would not be very different.[1]

The next reference is to a paper prepared by A. K. Chatterjee[2] for the Indian Statistical Institute, in which the author examines wage trends of persons employed in twelve manufacturing industries for the period 1946-1952. He uses the data provided by the Census of Manufactures. According to him, the cement industry has shown the highest rise in earnings by an increase of 172. 25 per cent.[3] Further, he says that in six other industries the rate of increase in earnings is above 100 per cent and in five industries it is below that. The author has not made a comprehensive study of the other industries included in the Census of Manufactures, but has made rather dubious comparison of real earnings in two periods - one based on 1939 relying on the earlier data reported under the Payment of Wages Act and the other on 1946 based on Census figures. From this type of comparison he says that we could "assume" that in "some of the industries under

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[1] Kotler, op. cit. p. 301, footnote.

[2] A. K. Chatterjee, "Trends in Labour Productivity and Wages in Twelve Selected Industries, 1946-1952", working paper of the Indian Statistical Institute, Planning Division, Dec. 4, 1956.

[3] Ibid. p. 17.

our study" (obviously referring to the C.M.I. industries) per capita real earnings in 1952 is even less than the pre-war level.[1] On the whole, the analysis in the paper is brief.

Palekar's second book was completed in 1959[2]. He says "It was begun in 1955 with the somewhat limited objective of ascertaining the impact of India's First Five Year Plan, which was then in its last year of execution, on the real wages of factory workers in India."[3] Once again Palekar stresses the point that the lot of the factory worker at the end of the First Five Year Plan had not improved and that they did not even receive a living wage. Since most of his calculations in this book are meant to up date the data of his previous work which we have already considered, we will not examine them in detail. He finds that in both industries and states there has been an increase in money and real wages in a majority of cases, but in spite of this, the real wage position of the worker had

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[1] Ibid. p. 19.

[2] S. A. Palekar, Problems of Wage Policy for Economic Development, Asia Publishing House, Bombay, 1962.

[3] Ibid. Acknowledgment.

not improved. He is extremely critical of the wage policy followed by the government, and the concluding chapters of the book are devoted to an almost emotional plea for wage policy to be directed towards providing the worker with the physical means for attaining a minimum of health and comfort.

Recently a member of the research staff of the Reserve Bank of India has studied the trends in money and real wages in India for the period 1951-1961.[1] He has not computed figures of his own but presents the data taken from the Labour Bureau publication, viz. the Indian Labour Statistics. The study has not drawn any significant conclusions, but merely summarizes the data. The object of the writer seems to be to provide a factual background for a critical examination of the current wage policy.[2] He finally says "though the average annual money wages per industrial worker have shown more or less a continuous rise since 1951, real wages per factory worker have fluctuated from year to year. Secondly, there was a decline in real wages per worker

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[1] H. B. Shivamaggi, "Trends in Money and Real Wages in India, 1951-1961, Reserve Bank of India - Bulletin, April 1964, pp. 421-39.

[2] Ibid. p. 421.

during the Second Plan period .....Thirdly, as many as 43 per cent of the factory workers were earning Rs 3 or less per day in 1958-59. These point up the need for an integrated approach to wages policy."[1]

A study of the inter-industry wage structure has been made recently by C. K. Johri and N. C. Agarwal[2], based on the Census of Manufacturing data for the period 1950-1961. The authors claim that they have analysed the inter-industry wage structure from the demand side. The reason they give for this (over)

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1 Ibid. p. 432.

2 C. K. Johri and N. C. Agarwal, "Inter-industry Wage Structure in India, 1950-1961 - An Analysis", Indian Journal of Industrial Relations, Vol. 1, No. 4, April 1966, pp. 377-414.

is "partly because we wanted to compare results for two highly dissimilar economies, Viz. , the United States and India, and partly due to the non-availability of data on the supply side."[1] In describing the main theme of the paper they point out, "The focus of the paper is on the structure of money wage earnings in different industries, and on the analysis of the factors operating upon it from the demand side of the market. From this analysis we also draw a few pertinent conclusions for policy purpose."[2] A general hypothesis is suggested by them as follows. "In an economy, such as India, which is going through the early phases of development, the labour market is generally unorganised and fluid. This characteristic of the market permits relatively free movement of labour, in different skill categories, in response to changes in demand. It follows that relative changes in money wage rates are determined by the relative excess demand for labour."[3] They do not explicitely test the hypothesis, but draw support for it from their finding that during the period 1950-1960, the average industrial wage rate has been steadily rising and accompanied by significant shifts in the relative positions of different industries.[4] These

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[1] Ibid. p. 378.

[2] Ibid. p. 379.

[3] Ibid. p. 390. This hypothesis is taken from Bent Hansen's essay on "Full Employment and Wage Stability", in John T. Dunlop's edited essays, Theory of Wage Determination. The authors acknowledge this in a foot note and say that this is sufficiently general to be of use in a particular case that is analysed by them.

[4] Ibid. p. 386.

two findings are based on a study of the movement of the average daily earnings in the industries. On the basis of these findings they argue that there has been a widening of the inter-industry wage structure due to the fact that the rapidly growing industries will pay more to their workers while the stagnant and declining industries will take advantage "of imperfections in the labour market" to deliberately lag behind the pace of earnings. Theoretically, if the labor market permits relatively free movement of labor as suggested under their hypothesis, then earnings differentials ought to show a tendency towards narrowing instead of widening. This would follow from the fact that labor would move from industry to industry in search of higher rewards thus minimizing the differences between them. However, the authors also refer to "imperfections in the labor market" when dealing with the wages in stagnant or declining industries. In fact, it is not clear how they ever come to support the hypothesis they have adopted. For instance, it is difficult to agree with their conclusions that there has been a significant shift in the relative position of different industries, for they give no detailed ranking of the industries by wage changes for each year.

The chief value of the work lies in the authors' attempt at an analysis of the inter-industrial wage structure in which they have tried to relate differentials to specific economic variables affecting them. But the study is not solely directed towards explaining the position in India, for their desire to compare India with the United States as the starting point of their study has resulted in their neglecting to analyse the data more carefully in the case of the former.

Finally we come to some long term studies on the cotton textile industry in India, a major industry employing nearly half of the factory labor force. K. Mukherhi, studying wage trends in this industry, has shown that the real wage for the average fully employed operative had increased by about 2.7 times between 1900 and 1951.[1] In another study relating to the industry in western India, he observes that the internal relations of the cotton textile industry seem to have been dominated by external demand and price relationship in the textile market. Downward revision of wage cost seem to be difficult, except in relation to small adjustments.[2] In his study of the industry in Ahmedabad, he finds that the level of real wages by the fifties of this century increased 2.53 times the wage level of the first years of the century.[3]

These studies mainly show the increase in the level of wages for long periods extending to fifty years. They are useful as historical references and are included here for this reason. There also seems to be a difference of opinion among the two writers cited in this review. The increase in wages to which Mukherji alludes is contrary to a different finding by M. D. Morris who says "The evidence suggests that during the critical period, the half century before 1920, mills were able to obtain new recruits without any significant upward pressure on wage rates at which novice mill hands were employed."[4] He argues that there was no

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[1]K. Mukherji, "Trends in Textile Mill Wages 1900-1951," Arthavijana, Vol. 1. 1959, p. 95

[2]K. Mukherji, "Trends in Textile Mill Wages in Western India; 1900-1951," Arthavijana, Vol. 4, 1962, p. 164.

[3]K. Mukherji, "Trends in Real Wages in Cotton Textile Industry in Ahmedabad," Arthavijana, Vol. 3, No. 2, June 1961, p. 134.

[4]M. D. Morris, The Emergence of an Industrial Labor Force in India, A Study of the Bombay Cotton Mills, 1854-1947, University of California Press, Berkeley, 1965, p. 223

upward trend in wages [redacted] in the cotton textile mills in Bombay before 1920.

The historical approach has thus not been fully explored, and it should be stressed that in the absence of more studies on this, a full appreciation of the causes that influence wage trends as well as differentials at the present time would be greatly hindered. But undertaking studies based on this approach is extremely difficult in India, in the absence of wage data extending backward through time.

The above review has served to show the different approaches adopted in studying industrial wage trends in India. The major concern among the writers has been to assess the economic position of the industrial worker. Most of the studies have concentrated on the level of wages. As pointed out at the begining, it is necessary to make a distinction between the level of wages and wage differentials for considering separately the influence of the various economic factors affecting them. This study has maintained this distinction and deals first with the level of wages and then considers inter-industry and inter-state differentials, in manufacturing industries for the period 1950-60. In each case, the nature of the changes in wage trends are measured with special attention to the statistical problems relating to these measurements. The attempt to consider separately the economic factors influencing the level of wages and shaping their differential has been made. In this connection, special attention has been paid in emphasizing the limitations surrounding the use of the existing data on wages in India, which has led to pinpoint areas for undertaking further research.

An empirical investigation is only one aspect of a wage study. The aim of constructing the indexes and subjecting them to a statistical analysis has been to examine the issues raised in formulating an appropriate wage policy for economic development. These issues relate to government wage policy and its influence on the level of wages and wage differentials; the role of wage differentials in focussing on relative supply scarcities for various categories of labor at an early stage of development; and finally, the need for further research to be undertaken in the specific areas opened up by this study.

Chapter 2 deals with the wage structure in manufacturing industries, chapter 3 examines the inter-industry wage structure and chapter 4 the inter-state wage structure. Finally chapter 5 discusses the issues relating to the formulation of an appropriate wage policy for economic development. The appendix discusses the methods involved in constructing the indexes, and the adjustments made in the data for the years 1959 and 1960, since these were drawn from a different statistical series. The tables computed in this study are included in the end.

CHAPTER 2

The Wage Structure in Manufacturing Industries

It was pointed out in the introduction that we are mainly concerned with analyzing the changes in the wage structure of manufacturing industries in India. This chapter undertakes such an analysis of the overall wage structure for the period 1950-1960.[1] Two aggregate series of average annual wages have been compared. One of the series has been computed from the data on average annual wages for twenty-six manufacturing industries, and the other, from the average annual earnings figures of manufacturing industries in twelve states. An analysis of money wages, real wages, and employment will be made in an attempt to (a) show the changes as revealed by the data utilized in this study and (b) provide explanations for the changes observed.

I. Change in Money Wages

For the whole period of this study there has been an increase in money wages in both absolute as well as in relative terms. The following table shows the changes.

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[1]Throughout the study, the absolute measure relates to 1950-1960. The relative change is based on 1950.

Table 1

Average Annual Wages in Manufacturing Industries All India, 1950-1960

	(1) By Industries	(2) Index: 1950=100	(3) By States	(4) Index: 1950=100
1950	Rs. 927	100	933	100
1951	1041	110	1043	111
1952	1095	115	1094	116
1953	1129	119	1127	120
1954	1117	119	1134	121
1955	1102	119	1119	120
1956	1148	124	1161	126
1957	1187	126	1202	131
1958	1208	129	1233	134
1959	1298	135	1237	138
1960	1461	152	1426	159
1950-60	534	52%	493	59%

Source: Computed from, India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures, and the Annual Survey of Industries

Note

Column 1 The average annual wage for each year has been obtained by dividing the aggregate average annual wages of all the twenty-six industries by their aggregate average annual employment for that year.

Column 2 The money wage index for each year is derived by taking the weighted average of money wage indexes for the twenty-six industries for that year, the current average annual employment in each industry being used as weight.

$$AI = \frac{\sum_{j=1}^{26} I_j E_j}{\sum_{j=1}^{26} E_j}$$

where AI is the money wage index for all India
I_j is the money wage index for industry j
E_j is the annual employment for industry j

(over)

Column 3 The average annual wage for each year has been obtained by dividing the aggregate average annual wages of all the twelve states by their aggregate average annual employment for that year. The employment figure for 1959 and 1960 is the original figure reported, and not the adjusted one, used later in the study. See Appendix, pp. 168-69.

Column 4 The money wage index for each year is derived by taking the weighted average of money wage indexes for the twelve states for that year, the current average annual employment in each state being used as weight.

$$AI = \frac{\sum_{j=1}^{12} I_j E_j}{\sum_{j=1}^{12} E_j}$$

where AI is the money wage index for all India
I_j is the money wage index for state j
E_j is the annual employment for state j

We may now compare both series with respect to the absolute and relative changes in average annual earnings. In the industry series, there is a decline of Rs. 12 between 1953 and 1954 and of Rs. 15 between 1954 and 1955. The index of money wages is constant for the years 1953, 1954 and 1955. In the case of the state series, there is similarly a decline of Rs. 15 between 1954 and 1955 and an increase of Rs. 31 between 1957 and 1958, followed by an increase of Rs. 4 for the following year. For the industry series, there has been a steady increase in the index of money wages throughout the period, the index never once showing a decline. The state series, however, shows that there has been a sharp increase during 1950 to 1953, a slight decline in 1955, followed by a steady increase up to the end of the period. Also, one gets the impression that the index has moved in discrete jumps, e.g. sharp increase between 1950-53 followed by a

leveling off, then again a jump from 1955-1956, then again a very sharp jump from 1959-1960. The index for 1959 and 1960 must be interpreted in the light of the change in the coverage of factories introduced by the-Annual Survey of Industries which replaced the Census of Manufactures in 1959. The increase in the index after 1958 could be due to the wider coverage of the Annual Survey. But, even if we take the period 1950-1958 the general increase in the index is clear, as it is seen that in both series, never once has it shown a decline below the value for the base year.

We may now examine the change for the whole period by seeing which industries and states have shown the greatest increase in money wages. The following table shows the ranking of industries according to the highest increase in absolute as well as in percentage terms for the period 1950-1960.

Table 2

Industry Ranking by Change in Average Annual Money Wages- All India 1950-1960

(1) Industry	(2) 1950 Money Wage	(3) Absolute Change ± Rs. (1950-1960)	(4) Rank	(5) % Change 1951=100 (Col 3/Col 2)×100	(6) Rank
Sewing Machine	1589	1986	1	125	3
Electric Fans	846	1447	2	171	2
Starch	411	973	3	237	1

(1) Industry	(2) 1950 Money Wage	(3) Absolute Change Rs.(1960-1960)	(4) Rank	(5) % Change 1950=100	(6) Rank
Soap	1130	841	4	75	7
Iron & Steel	1492	831	5	54	12
Chemicals	927	806	6	87	5
Paints & Varnishes	980	674	7	69	8
Biscuit Making	706	597	8	85	6
Sugar	508	557	9	110	4
Cement	906	510	10	56	11
Cotton	1113	492	11	44	16
Electric Lamps	904	427	12	47	14
Tanning	692	415	13	60	9
Jute Textiles	773	355	14	46	15
Glass	586	339	15	58	10
Wheat Flour	854	333	16	39	18
Dist. & Breweries	787	303	17	39	18
Paper	902	300	18	33	19
Bicycles	1281	299	19	23	23
Matches	987	268	20	27	22
Woollen Textiles	919	254	21	28	21
Plywood and Tea Chests	586	232	22	40	17
Vegetable Oil	541	165	23	31	20
Rice Milling	266	141	24	53	13
Fruits & Veg. Canning	629	21	25	3	24
Ceramics	760	-50	26	-6	25

Source Computed from, India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures, and the Annual Survey of Industries.

Note Wheat Flour and Distilleries have the same percentage ranks. Ranking is done numerically with #1 denoting the highest rank, in Col. 3 and 5.

We shall also rank the states similarly as follows.

Table 3

State Ranking by Change in Average Annual Money wages - All India
1950-1960

(1) State	(2) 1950 Money Wages	(3) Absolute Change Rs. (1950-1960)	(4) Rank	(5) % Change 1950=100 Col. 3 X 100 / Col. 2	(6) Rank
Bihar	1133	1104	1	97	2
Delhi	1134	624	2	55	7
Bombay	1160	599	3	52	8
Madras	794	536	4	67	4
Madhya Pradesh	760	464	5	61	5
Andhra	425	451	6	106	1
West Bengal	812	425	7	52	8
Punjab	714	405	8	57	6
Orissa	523	397	9	76	3
Uttar Pradesh	765	389	10	51	9
Rajasthan	670	341	11	51	9
Assam	841	-12	12	- 1	10

Source: Computed from, India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures and the Annual Survey of Industries.

Note: Bombay and West Bengal have the same percentage ranks. Similarly Uttar Pradesh and Rajasthan also have the same percentage ranks. Ranking is done numerically with #1 denoting the highest rank, in col. 3 & 5.

It is necessary to consider both the absolute and percentage changes in analyzing the rankings. This is so because some industries and states which show lo absolute increases reveal higher rates of growth in money wages. Among the top five industries, Sewing Machine ranks first in the whole group of 26 industries having the largest absolute increase and Starch ranks first showing the highest percentage increase. On the other hand, Sewing Machine is placed third in percentage ~~increase~~ (over)

increase. There is no change in the ranking of Electric Fans either in absolute or percentage terms. Thus, the first three industries show a great similarity in their rates of growth of money wages.

Three industries, Chemicals, Biscuit Making and Sugar show a higher relative growth in money wages than Soap which comes within the top five. Likewise, Chemicals, Paints and Varnishes, Biscuit Making, Sugar, Cement, Tanning and Glass show a higher rate of growth in percentage terms than Iron and Steel which finds a place among the top five in absolute increase in money wages.

Among the last five industries, Ceramics has shown a decline in wages. It is the only industry among the twenty-six industries showing a decline. There have been changes in the ranks of the other four in this group with respect to percentage increases. Fruit and Vegetable Canning occupies the lowest rank among all industries showing an increase in wages. Rice Milling has shown a higher percentage increase than twelve other industries, even though it is in the low five group. It has shown a higher rate of growth than Cotton Textiles, Electric Lamps, Jute Textiles, Wheat Flour, and Distilleries and Breweries (same rank), Fruits and Vegetable Canning, Paper, Bicycles, Matches, Woollen Textiles, and Ceramics. Vegetable Oil shows a relatively greater percentage increase in wages than Bicyles, Fruits and Vegetable Canning, Matches, Woollen Textiles, and Ceramics. Plywood and Tea Chests

also exceed seven other industries as Wheat Flour, Fruits and Vegetable Canning, Distilleries and Breweries, Paper, Bicycles, Matches, and Woollen Textiles.

With respect to the states, Bihar shows the largest increase in absolute, and Andhra the highest in percentage terms. Assam ranks last in both cases with actually a decline in money wages. The most interesting feature of the table is the identical ranks in the rates of growth in wages in the two states - Bombay and West Bengal - considered to be the leading industrial states. They have shown a lower percentage increase than Andhra, Bihar, Delhi, Madhya Pradesh, Punjab, and Orissa. (over)

A major conclusion that emerges from the above tables is that the average annual earnings of workers in manufacturing industries have increased for the period 1950-1960. When the industries and states are ranked according to the increase in their wages, we find that with the exception of one industry (ceramics) and one state (Assam) average annual money wages have increased in all other cases. It is also important to bear in mind that the rather sharp increase for the terminal years 1959 and 1960 should be interpreted in the light of the wider coverage of the Annual Survey of Industries. There may be some upward bias in the figures, the exact extent of which is difficult to determine. However if we focus on the period up to 1958, both the industry series and the state series show an increase in the overall index.

We may now consider the factors that have influenced the upward movement in the level of wages.

1 General Economic Expansion and Increase in Incomes

Under the stimulus provided by development planning, the period 1950-1960 was marked by a considerable

increase of investment.[1] A study made by the United Nations notes:

> "The rate of gross investment rose from an estimated 13.6 per cent of gross national product in the first plan to 18.5 per cent in the second plan. The rate of developmental outlays and private investment to national income came to 16 per cent in the first plan, and to 23 per cent in the second plan. At current prices, developmental expenditure increased from Rs 30 billion in the first plan to Rs 71 billion in the second plan. The outlay thus must have more than doubled even in real terms."[2]

If we are to rely on the above findings, we should expect to find an increase in national income with an increase in the various sectors in which it originates.

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[1] Indian statistics on investment do not provide detailed breakdowns of estimates of net investment by sectors. It would be highly desirable to have some estimates of net investment distribution with detailed breakdowns within the industrial sector so that we may trace the effect of increased investment activity on the growth of incomes within this sector. But in the absence of such estimates, we have to rely on the breakdown of national income figures by industrial origin.

[2] United Nations, Economic Survey of Asia and the Far East, 1961, Bangkok, 1962, p. 84.

origin. The following table shows the growth in national income by industrial origin. The percentage of the total national income originating in the various sectors is also given.

Table 4

National Income by Industrial Origin - All India
1951-52 to 1961-62
In Rs.Abja which means 100 crores, 10^9 (at current prices).

Year	Mining	Factory Establishments	Small Enterprises	Total of Col. 1,2,3	Communication (P & T)	Railways	Organized Banking & Insurance	Other Commerce & Transport	Total of Col. 4,5,6	Grand Total	Total N.I
	1	2	3	8	4	5	6	7	9	10	11
IN RUPEES, ABJA: 100 CRORES, 10^9.											
1951-52	0.9	6.4	9.5	16.8	0.4	2.1	0.8	14.6	17.9	34.7	99.7
1952-53	0.9	6.4	9.7	17.0	0.4	2.0	0.7	14.7	17.8	34.8	98.2
1953-54	1.0	6.9	9.8	17.7	0.4	2.0	0.8	14.8	18.0	35.7	104.8
1954-55	0.9	7.5	9.6	18.0	0.4	2.2	0.8	14.7	18.1	36.1	96.1
1955-56	1.0	7.8	9.7	18.5	0.5	2.5	0.9	14.9	18.8	37.3	99.8
1956-57	1.2	9.0	9.8	20.0	0.5	2.8	1.1	15.2	19.6	39.6	113.1
1957-58	1.4	9.8	10.0	21.2	0.5	3.2	1.2	15.8	20.7	41.9	113.9
1958-59	1.4	10.0	10.3	21.7	0.6	3.3	1.3	16.3	21.5	43.2	126.0
1959-60	1.4	11.1	10.7	23.2	0.6	3.3	1.4	17.0	22.3	45.5	129.5
1960-61	1.6	13.2	11.2	26.0	0.6	3.6	1.6	17.6	23.4	49.4	141.4
1961-62	1.7	15.4	11.7	28.8	0.7	3.8	1.9	18.4	24.8	53.6	148.0
IN PERCENTAGE OF THE TOTAL NATIONAL INCOME.											
1951-52	0.9	6.4	9.6	16.9	0.4	2.1	0.8	14.6	17.9	34.8	100
1952-53	0.9	6.5	9.9	17.3	0.4	2.0	0.7	15.0	18.1	35.4	100
1953-54	1.0	6.6	9.3	16.9	0.4	1.9	0.8	14.1	17.2	34.1	100
1954-55	0.9	7.8	10.0	18.7	0.4	2.3	0.8	15.3	18.8	37.5	100
1955-56	1.0	7.8	9.7	18.5	0.5	2.5	0.9	15.0	18.9	37.4	100
1956-57	1.1	7.9	8.7	17.7	0.4	2.5	1.0	13.4	17.3	35.0	100
1957-58	1.2	8.6	8.7	18.6	0.4	2.8	1.1	13.9	18.2	36.8	100
1958-59	1.1	7.9	8.2	17.2	0.5	2.6	1.0	13.0	17.1	34.3	100
1959-60	1.1	8.6	8.2	17.9	0.5	2.5	1.1	13.1	17.2	35.1	100
1960-61	1.1	9.4	7.0	18.4	0.4	2.6	1.1	12.5	16.6	35.0	100
1961-62	1.2	10.4	7.9	19.5	0.5	2.6	1.3	12.4	16.8	36.3	100

Source: P-T-O

(Over)

Source Government of India, Cabinet Secretariat, Central Statistical Organization, Department of Statistics, Estimates of National Income 1948-49 to 1962-63, New Delhi, Feb. 1964, Table 2 and 2.1, pp. 2-3.

We may first refer to column 10 which gives the grand total of columns 1 through 9 which seem to represent the modern wage earning sector. The percentage of the total national income originating in this sector shows a slow increase from 34.8 in 1951-52 to 36.3 in 1961-62. Column 9 shows a decline from 17.9 per cent in 1951-52 to 16.8 in 1961-62. But, there is an increase in the percentage of the total national income in the sector comprised of mining, factory establishments and small enterprises, as revealed in column 8. Specifically, the percentage increase in factory establishments and mining is higher than that of small enterprises.

The increase in the national income originating from factory establishments gives us a clue as to the general economic expansion that has taken place in manufacturing industries. Under the impetus of the First and Second Five Year Plans, the net investment in manufacturing has increased, thereby leading to the expansion of existing firms and the birth of new firms in the case of existing industries and the establishment of new industries. This has had the effect of raising the level of the average annual wages of the factory worker.

A comparison of the rate of growth in per capita income with the rate of growth in the earnings of different categories of employees reveals that for the period 1950-51 to 1960-61, the percentage increase in the earnings of workers in mining and factories has exceeded that of other classes of workers as shown in the following table.

Table 5

Per Capita Income and Index Numbers of Earnings by Category of Employment - All India, 1950-51 - 1960-61

Year	1 Per Capita Income 48-49 Prices	1 Per Capita Income 58-59 Prices	2 Factory Employees	3 Mines	4 Rail-ways	5 Central Govt.	6 Rural Skilled Worker
	Rs.		Index Numbers at current Prices(1950-51=100)				
	A	B					
1950-51	247	280	100	100	100	100	100
1951-52	250	283	108	105	106	103	106
1952-53	255	289	116	111	109	104	107
1953-54	266	301	115	111	110	108	104
1954-55	267	303	115	113	117	108	103
1955-56	267	300	122	115	113	108	108
1956-57	275	307	123	151	116	108	109
1957-58	267	297	128	168	122	113	114
1958-59	280	312	130	179	125	116	117
1959-60	279	310	134	192	128	120	123
1960-61	293	322	143	199	137	126	...

Source Col. 1A, 2-6, Government of India, Planning Commission, Report of the Committee on Distribution of Income and Levels of Living, Part I, Distribution of Income and Wealth and Concentration of Economic Power, New Delhi, 1964, pp. 59,80.
Col. 1B, U.N. Economic Survey of Asia and Far East 1961, Bangkok, 1962, p. 82.
Col. 5 includes railways.

(Over)

NB. The earnings of factory employees reported above is not strictly comparable to the data computed in this study relating to workers in manufacturing, the source used in this table being different.

The table shows that per capita income has increased by 15 per cent between 1950-51 and 1960-61. Earnings in mining and factories have shown an increase of 99 and 43 per cent respectively.

Concentrating our attention on the manufacturing sector, it can be argued that, with the growth in income, there has been an increase in demand for goods produced in this sector. In the absence of data it is difficult to ascertain, to what extent there has been an increase in the income elasticity of demand for manufactured goods[1] but , if we distinguish the period 1950-1960 as one of general economic expansion as against the period prior to 1950 as one of catching up with war time backlogs, it is reasonable to suppose that this income elasticity of demand has increased considerably. In the face of this increase, industries have enjoyed relatively more favorable product market conditions compared to the previous period. This factor has favorably influenced the profit position of industries enabling them to grant increases in wages.

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[1]Two types of elasticities have been stressed. These are, elasticity of demand for goods and services as a function of personal disposable income, and the more general elasticity with respect to changes in national income. See, Subbiah Kannappan, "Wage Policy in Economic Development-Some Critical Issues", Economic Weekly, Annual Number, Vol. XVI, Nos. 5,6,7, Feb. 1964.

2. The Role of Government Policy

The government appointed a committee on profit sharing in May, 1948, to devise a system in which labor's share of profit could be determined. The committee observed that labor's share should be 50% of the surplus profits after allowance for depreciation, reserves, and fair return on capital employed.[1] Thus in principle, government policy has recognized the idea of profit sharing in industry. If it can be shown that there exists a surplus of profit after allowing for depreciation and reserves, labor could legitimately claim a share of this surplus. In practice, the claim has been related to the payment of bonus which is now a component of the total wages received by the worker. The question whether the payment of bonus should be linked with productivity or profits has recently been reviewed by the Bonus Commission which submitted its report in 1964. The Commission favoring a profit sharing bonus, points out:

> "In view of the objections to the proposal by large sections of employers as well as by almost all the unions, and the practical difficulties inherent in any such proposal, we are unable to recommend that the concept of bonus based on profits should be replaced by an annual bonus linked with production or productivity. It is doubtless true that properly devised incentive systems

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[1]The reference to the committee on profit sharing has been taken from the following report. Government of India, Ministry of Labour and Employment, Report of the Bonus Commission, New Delhi, 1964, pp. 6-7.

> in manufacturing concerns form a useful part of the wage structure and would help to increase production, but they cannot be suggested as a substitute to replace the annual profit sharing bonus."[1]

The wage data in our study includes bonus, and hence we can establish a relation between profit and wages. The payment of bonus has become an issue before the courts and under pressure of judicial awards, many employers have been forced to adopt a permissive attitude towards wage increases.

The findings made in this study suggest that the newer industries have shown a higher relative increase in wages compared to the older established industries. This can be seen by comparing industries like Sewing Machines, Electric Fans, and Chemicals, with Cotton and Jute textiles. It is likely that profits in these industries have increased owing to the growing and unfulfilled demand during the period of our study and that these industries have found it relatively easy to pay higher wages.[2] Profitability in this way

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[1] The reference to the committee on profit sharing has been taken from the following report. Government of India, Ministry of Labour and Employment, Report of the Bonus Commission, New Delhi, 1964, p. 27

[2] The bicycle industry seems to be an exception in so far as it is one of the newer industries. It may be that it has expanded in the direction of providing more employment than in offering higher wages.

can definitely be related to wages. In the United States Slichter found that "wages within a considerable range, reflect managerial discretion, that where managements can easily pay high wages they tend to do so, and that where managements are breaking even, they tend to keep wages down."[1] In India, managements may be willing to pay higher wages out of increased profits to acquire more efficient and experienced workers, to reduce absenteeism[2] and to maintain better discipline within the factory.

(over)

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[1] S. H. Slichter, "Notes on the Structure of Wages," Review of Economics and Statistics, Vol. XXXII, Feb. 1950, p.88.

[2] Absenteeism rates are high in Indian industries. For an exhaustive and historical reference on absenteeism see, Subbiah Kannappan, Labor Force Commitment in Early Stages of Industrialization, unpublished manuscript, Department of Economics and School of Labor and Industrial Relations, Michigan State University, East Lansing, Appendix IV, pp. 58-61.

The establishment of wage boards in different industries is another feature of government wage policy that must be considered as influencing the increase in the level of wages. So far, eleven industries, namely, cotton textiles, sugar, cement, jute, tea, coffee, and rubber planatations, iron and steel, coal mining, iron ore mining, lime stone and dolomite mines have been covered by wage boards. The cotton textile and sugar industries were covered in 1957, cement in 1958; jute industry and tea planatations in 1960; coffee and rubber planatations in 1961; iron and steel and coal mining in 1962; iron ore and limestone and dolomite mines in 1963.[1] The following table shows the range of percentage increase over existing wages in three industries as a result of wage board recommendations.

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[1] The information in this paragraph has been obtained from the following source: R. K. Malviya, "Reflections on Wage Board", Indian Labour Journal, Vol. V, No. 9, Sept. 1964, p. 728. The author, when writing this was the Deputy Minister, for Labour and Employment in the central government.

Table 6

Range of Increase over Existing Wages and Number of Workers Benefited by Recommendations of Wage Boards

1 Industry	2 Date covered by Wage Board	3 Range of wage increase	4 Percentage increase over existing wages	5 Percentage of workers benefited to total No. of Workers
1. Cotton Textiles	1957	Rs. 8 to Rs. 10 per mensem	8.6 to 21	99.8
2. Sugar	1957	Rs. 21 to Rs. 47 per mensem	38 to 117	96.2
3. Cement	1958	Rs. 5. 84 to Rs. 45. 50 per mensem	7 to 100	100.0

Source Compiled from R. K. Malviya, "Reflections on Wage Boards", Indian Labour Journal, Vol. V, No. 9, Sept. 1964, pp. 728-30.

The table shows that the range of increase over existing wages is very large in cement and sugar compared to cotton textiles. It is also seen that the percentage of workers benefited is quite high in all the three industries. We may now consider the recommendation of the wage board for the jute industry as it is another major industry which provides employment to a large number of workers. The board was appointed in 1960. At the time when it investigated into the wages of workers, the basic wage of the lowest category of workers was Rs.34. 67 and with a dearness allowance of Rs.32. 50, the total came to Rs.70. 02 per month. The board recommended a basic wage of Rs 40. 17, a dearness allowance of Rs 32. 50 and an increment of Rs 8. 33.[1]

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[1]Government of India, Report of the Central Wage Board for Jute Industry 1963, Manager of Publications, Delhi, 1964, p. 40, 68.

The board also gave similar recommendations for other categories of workers.

Thus, the role of government policy in raising wages can be traced to these developments. These have secured significant wage premiums for the industrial worker compared to other wage earners in urban services and those in rural occupations.

Trade Unionism and the Level of Wages

In the west, opinion is divided on the question of union influence on wages and there are those who stress the importance of market forces, and those that point out that unions have significantly raised wages. The usual technique of the latter school of thought is to compare union and nonunion wages in a particular setting. If wages are higher in the union setting, it might signify that unionism was responsible for the increase in the wage of the average unionized worker.[1] Thus power force advocates stress the strength of unions in raising wages, while market force supporters minimize its role, if they find, that the union-nonunion wage differential could be explained on economic grounds.

In India, there has not been any attempt to study the effect of unionism by comparing union and nonunion wages in a particular setting. Dr. A. J. Fonseca,

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[1] Richard Perlman(Ed), Wage Determination-Market or Power Forces?, D. C. Heath and Co., Boston, 1964, p. 77.

however, attempted to relate indices of the degree of unionization, (Percentage of the total industrially employed working force who are members of trade unions) with cost of living, money earnings, real earnings, employment, production, and productivity.[1] His work does not answer questions regarding union-nonunion wage differentials. Nevertheless, his findings have provoked further thought in this neglected area of enquiry. Dr. Fonseca points out,

> "A 1 per cent increase in the degree of unionization will lead to a rise of .18 per cent in the wage rate. Similarly, an increase of 1 per cent in the cost of living will bring about a rise in wages of .91 per cent. And lastly, an increase of productivity by 1 per cent will cause a rise in wages of 2. 09 per cent."[2]

In conclusion he says, "It is clear that there is a very close correlation between the cost of living and money wages, while that between money wages and the degree of unionization is considerably lower.[3]

In a following article the same writer cites the use of the well known Cobb-Douglas production function for assessing the share of labor in the domestic product and argues a case for enlarging the scope of the variables

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[1] A. J. Fonseca, Wage Determination and Organized Labor in India, Oxford University Press, 1964, pp. 194-95.

[2] Ibid. p. 199.

[3] Ibid.

included in the function.[1] He says,

> "One of these variables would have to represent union effectiveness in promoting economic growth by raising the total output. For this purpose, a further set of variables to represent increase in union membership, its financial stability, its age, its representativeness in the industry, and similar aspects would have to be chosen."[2]

He stresses that the function of sound trade unionism "would be to improve the quality of labour and thereby contribute handsomely to an increase in production."[3] He then ties this argument up by asserting that in the organized sector of Indian industry, where trade unions have their largest following, great strides in production have been made.[4]

Dr. Fonseca places considerable faith in the power of unions to raise the level of wages. But it is difficult to agree completely with his view, especially when his own calculations lead him to conclude that the correlation between money wages and the degree of unionization is considerably lower than that between money wages and the cost of living. In evaluating the role of unions in India the characteristics of Indian

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[1] A. J. Fonseca, "Contribution of Trade Unions to Development", Indian Journal of Industrial Relations, Vol. 1, No. 2, Oct. 1965, p. 179-80.

[2] Ibid. p. 180.

[3] Ibid.

[4] Ibid. p. 181. He also says that this is due to the efforts of both labour and capital and it would be difficult to argue that the impact of trade unions has been entirely negative.

unions are not fully grasped. Reminding that this factor is important, Dr. S. Kannappan points out,

> "The typical union is small, and lacks stable leadership. The labour movement as a whole is ridden by political factions. "Rational" union behavior, in the context of this acute rival unionism need not be the same as the goal of a "rational" militant leader maximizing any single or complex of objectives pertinent to the union or its members. It most certainly does not follow that a carefully calculated attitude to wage, employment and productivity relationships will be dominant."[1]

The above passage clearly shows that one cannot place too much emphasis on union power to raise wages. It is also pointed out that environmental conditions and government policy have discouraged the development of strong, job-centered unionism and co-equal working relationships between worker and management.[2]

The point regarding the size of the unions is particularly relevant because of the uncertain nature of the data on union membership. The former Deputy Chief Labor Commissioner to the government of India, S. B. Kale, who was concerned with the development and execution of verification procedure of trade union membership has furnished verified figures for 1952-53

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[1] S. Kannappan, "Union Adjudication and Wages", The Economic Weekly, Annual Number, Feb. 1962, pp. 223-24.

[2] Van Dusen Kennedy, "The Role of the Union in the Plant in India", Industrial Relations Research Association Proceedings, Eight Annual Meeting, New York, Dec. 28-30, 1955, Publication 16, 1956, p. 263.

to 1962-63.[1] For instance, membership claimed by the Indian National Trade Union Congress in 1952-53 was 1,347,320 whereas verified figures are 919,258. In 1962-63, claimed membership was 1,828,783 where as when verified it stood at 1,268,339. Similarly, he provdes figures for the other major unions. But even he has not been able to verify the figures for all the years. This was either because, the list of members was not submitted, or verification was not done at the request of the union. It follows that we cannot place too much reliance on the index of unionization, which is likely to overstate the degree of unionization. (Oren)

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[1] S. B. Kale, "Verification of Membership of Trade Unions", Indian Journal of Industrial Relations, Vol. 2, No. 1, July 1966, pp. 64-65.

II. Change in Real Wages

Next we will examine the change in Real Wages for all India. A comparison of Real Wage indexes computed from the Industry Series and the State Series will be made. However, it should be noted that real wage estimates for all India are at best a rough approximation as there are wide variations in the comsumption habits of workers in different regions. At present these estimates are made by deflating money wages by the consumer price index applicable to factory workers. Price relatives of fixed baskets of goods and services said to be consumed by workers are weighted according to consumption expenditure on different items to yield a set of working class consumer price index numbers. However, the existing series of index numbers are far from satisfactory. The Labour Bureau which publishes them says,

> "The index does not measure the absolute level of prices but only the average percentage change in the prices of fixed basket of goods and services at different periods of time. The index does not also measure changes in the total expenditure of the population-group or, in other words, their actual cost of living."[1]

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[1] Government of India, Labour Bureau, A Guide to Consumer Price Index Numbers, 1960, Simla, p. 4.

Besides the above drawback the index numbers available at present ----> are based on family budget surveys carried out during World War II. The Labour Bureau itself admits that these surveys carried out 20 to 25 years ago are not a true reflection of the present spending habits of workers.[1]

A more detailed examination of real wages would be undertaken in the chapter on inter-state wage differences. This is more likely to give a clearer indication of the extent of real wage change in each state.

The most exhaustive study on real wages has been undertaken by Dr. S. A. Palekar whose main findings may be first considered. ---> He points out that for the period 1939-1950 an examination of the all-India real wage series revealed that by 1950, the workers had just managed to regain their base year level of real wages. Real wages attained a peak in 1940 and declined

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[1] Ibid. Introductory Note. In 1958 fresh family budget surveys were made on the basis of which new working class consumer price index numbers are now under preparation. Dr. A. J. Fonseca citing a government report on readjusting the index numbers for industrial workers in Bombay writes, "In the latest survey of family budgets undertaken by the Labour Department of the Government of Maharashtra, in the year 1958-59, the number of items for which information was collected was 119, while in 1932-33 when the previous family budgets were collected the number of items was only 47." See A. J. Fonseca, "Contribution of Trade Unions to Development", Indian Journal of Industrial Relations, Vol. 1, No. 2, Oct. 1965, p. 183.

thereafter, to register a low level in 1943. During the war there were real wage losses in all the States except the Punjab. Real wage losses were sustained in all industries except Gins and Presses. He, however, finds that the post war period brought with it "some additions to real wages" of workers in all the States except the Punjab which enabled the workers in most States to regain their 1939 wage position.[1]

Philip Kotler, presenting data on a Statewise series of real wages shows that real earnings rose by 21 per cent between 1950 and 1954. Calculating on base 1950 he says that the rise was greatest between 1950-52 whereas the period 1952-54 was marked by comparative stability.[2]

The index of real wages computed in this study cannot be strictly compared to the previous studies owing to basic differences in data and coverage. The studies previously made show that, after the war, real wage gains have been made by the workers. That this trend seems to have continued since 1950 is shown by the indexes computed below.

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[1] S. A. Palekar, Real Wages in India, International Book House Ltd. Bombay, 1962, p. 175-76.

[2] Philip Kotler, "Problems of Industrial Wage Policy in India", unpublished Ph.D, thesis, Massachusetts Institute of Technology, Cambridge, 1956, p. 336, 349.

Table 7

Indexes of Real Wages by Industries and States - All India 1951-1960 Base 1950 = 100

Year	Industries	States
1950	100	100
1951	105	106
1952	113	114
1953	112	115
1954	117	121
1955	124	128
1956	118	122
1957	114	120
1958	111	118
1959	113	119
1960	124	134

Source Computed from, India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures, and the Annual Survey of Industries.

Indian Labour Journal, Vol. II, No. 12, Dec. 1961, pp. 1290-91

Government of India, Central Statistical Organization, Statistical Abstract of the Indian Union, 1957-58, p. 365 and 1961, p. 241

Column 2

$$AI = \frac{\sum_{j=1}^{26} I_j \cdot E_j}{\sum_{j=1}^{26} E_j}$$

where AI is the Real Wage Index for all India
I_j is the Real Wage Index for industry j
E_j is the annual employment for industry j

The all India working class consumer price index numbers, reduced to base 1950 were used to deflate the index of money wages for the industries.

Column 3

$$AI = \frac{\sum_{j=1}^{12} I_j E_j}{\sum_{j=1}^{12} E_j}$$

where AI is the Real Wage Index for all India
I_j is the Real Wage Index for state j
E_j is the annual employment for state j

For each state, the consumer price index numbers relating to the centers were combined using the 1951 population of the center as weights to arrive at a weighted index for the state as a whole. This weighted index was used to deflate the index of money wages for that state.

In the case of the industry series there is drop by one point in 1953, by six points in 1956, by a further drop of four points in 1957 followed by a decline of three points for 1958. In the case of the states series the index declines by six points in 1956 after a steady rise up to 1955. For 1957 and 1958 there seems to be a slight decline by two points in each case.

The ranking by real wages by industries will follow the same ranks as in the case of the index of money wages given previously. It may be recalled that the real wages are derived in each case by deflating the money wage by the consumer price index. But in the case of the states they would differ according as the price index differs from state to state. We may present these as follows. Bihar showed the highest increase for the whole period (1951-1960) with an increase of 91 points, followed by Andhra 63 points, Punjab 55 points, Orissa 54 points, Madhya Pradesh 49 points, Rajasthan 47 points, Uttar Pradesh 39 points, West Bengal 36 points, Delhi 29 points, Madras 18 points, and Bombay 14 points. There was a decline in the case of Assam by 6 points for the whole period. No doubt there were fluctuations in each case which may be explained on the basis of the fluctuations in the working class consumer price indexes. As mentioned above, it would be more appropriate to consider the

changes in each state in a subsequent chapter dealing with inter-state differences in wages.

The main conclusion to be drawn from our real wage indexes is that there has been an increase in real wages if we take the whole period into account. The figure for money wages includes besides the basic wage, cash allowances including dearness allowance, bonus, and the money value of various benefits received by the workers. In recent years the government has made various attempts to link the payment of dearness allowance to the consumer price index in order to safeguard the real wage position of the worker. Three main agencies can be distinguished which lay down the principles governing the linking of the dearness allowance with the consumer price index. These are Adjudicators and Tribunals, Wage Boards and the state governments acting independently under the provisions of the Minimum Wages Act of 1948. There are variations in the manner in which the linking is done, but the fact is, the factory worker is partially compensated for price increases of the essential commodities he consumes. Further it can be said that such compensation has improved his real wage position. The dearness allowance forms a substantial part of total wages and it has risen in recent years. In 1957, out of an average annual per capita earning of Rs 1,216 (in the case of

factory employees earning below Rs 200 per month) in ——→ thirteen states Rs 668 formed basic wages, Rs 496 cash allowance including dearness allowance, Rs 21 money value of concessions, Rs 70 bonus and Rs 4 arrears. Thus, the other components besides basic wage formed Rs 591 which is roughly half of the total. Among the other "components", cash allowance including dearness allowance formed more than 82 per cent. During 1959 in the case of twelve states the figure on per capita earning turned out to be Rs 1329 of which basic wage formed Rs 727, cash allowance including dearness allowance Rs 540, bonus Rs 49, money value of concession Rs 6 and arrears Rs 5. Thus the "other components" besides basic wage amounted to Rs 600 in which cash allowances including dearness allowance came to 90 per cent.[1]

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[1] The figures for both the years were taken from The Indian Labour Year Book 1958, p. 65 and The Indian Labour Year Book 1960, p. 42, published by the Labour Bureau.

III. Change in Employment and its Effect on Wages

The Ministry of Labour and Employment in a recent study on employment and unemployment in India[1] points out that there are huge surpluses of man power in certain occupations while at the same time there are acute shortages in other occupations. The study also takes the stand that unemployment has increased in urban areas though it does not deal with this problem in any detail. The following reference shows that not much is known about the extent of unemployment. It is clear from the following passage in the study. "In the absence of unemployment surveys conducted at regular intervals, there is as yet no reliable information as to whether unemployment increased or decreased during the Second Plan period".[2] Analysing the position with respect to factories, and computing indexes of employment in factories for the period 1950-1955, Palekar says "The plan(he refers to the First Five Year Plan) does not seem to have stimulated factory employment. On the other hand, employment in factories declined continuously almost during the first four years of the Plan. It was only in 1955 that the volume of factory employment was restored to its 1950 position".[3]

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[1] Government of India, Ministry of Labour and Employment Service (D.G.R.E.), Employment and Unemployment Study No. 4, March 1959, p. 10.

[2] Ibid. p. 16.

[3] S. A. Palekar, Problems of Wage Policy for Economic Development, Asia Publishing House, Bombay, 1962, p. 73.

The above observations do not refer to a detailed breakdown of either industries or states. Though Palekar has presented indexes of employment for nine states and twenty-five industries[1] he has not undertaken any detailed examination of the trend of employment in each of them. We will be mainly concerned with this type of analysis. Also, we will analyse the changes in employment and its effect on wages. Changes in employment, whether in absolute or relative terms, cannot be meaningfully discussed merely by a reference to its increase or decline. What is more important is an analysis of the differential rates of growth in employment whether in absolute or relative terms with respect to particular industries or states. Why have certain industries shown greater increase in employment than others? We shall deal with the overall trend in employment as well as the changes in employment in individual industries and states for the entire period. This will be followed by an attempt to ascertain the effect of changing employment on the overall wage structure.

Before examining the data computed in our study, we may refer to the employment statistics furnished by

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[1] The indexes are based on figures reported under the Payment Wages Act of 1936 which relate to employees earning less than Rs 200 per month and also covers some establishments besides factories.

the Labour Bureau which is given below.

Table 8

Index of Employment - All India 1951-60 (1950=100)

Yr.	50	51	52	53	54	55	56	57	58	59	60
Emp.*	30	32	31	31	31	32	34	35	36	36	39
Indx.	100	104	103	102	102	106	111	115	116	118	122

*In Lakhs ie. 100,000. Employment figures have been reported with decimals not shown here.

Source Indian Labour Journal, Vol. V, No. 8, Aug. 1964. The data relates to only factory employment reported under the Factory Act of 1948.

The table shows that employment has declined between 1952 and 1954 and thereafter shown an increase. For the entire period there is an increase of 22 points in the index. The increase is not significant up to 1954 and we may say that during the First Five Year Plan period (1951-55) there has been a slow change in employment. This probably is in accord with the finding of Palekar quoted above.

We may now consider the change in employment in the case of manufacturing industries considered in this study. The overall trend in employment is shown below.

Table 9

Overall Trend in Employment (1950-1960) by Industries & States

Year	By Industries Employment	Index 1950=100	By States Employment	Index 1950=100
1950	1,320,405	100	1,447,289	100
1951	1,318,128	101	1,442,187	100
1952	1,341,586	103	1,461,568	101

1953	1,322,250	102	1,436,495	100
1954	1,376,650	106	1,451,547	101
1955	1,418,236	110	1,496,328	104
1956	1,490,139	117	1,601,767	115
1957	1,477,226	117	1,598,444	114
1958	1,399,286	112	1,517,645	108
1959	1,370,512	122	1,349,583	108
1960	1,359,863	124	1,336,503	105

Source Computed from, India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures and the Annual Survey of Industries

The table shows that there has been a slow growth in employment. The index of employment up to 1954 in both cases has hardly increased at all. There is a drop in the case of industries in 1958 and in the case of the states in 1957. But, as mentioned earlier, very little can be ascertained from the trend in the overall figures.

We may consider the ranking of the individual industries for the entire period showing the change in employment both in absolute and percentage terms. In the following table, we have ranked the industries according to the highest ablosute increase in employment. The percentage change and rank according to per cent increase is also shown for each industry.

Table 10

Industry Ranking by Change in Employment (1950-1960)

1 Industry	2 1950 Emp.	3 Change in Emp.* (1950-60)	4 Rank	5 % Change (1950-60) Col. 3/Col. 2 x 100	6 Rank
Cotton Textile	602,731	242,546	1	40	16
Chemicals	26,411	30,765	2	116	5
Iron and Steel	62,102	25,641	3	40	16
Glass	20,315	17,213	4	85	7
Bicycles	2,478	13,882	5	560	1
Cement	14,388	12,147	6	84	8
Woollen Textiles	13,851	7,455	7	54	10
Matches	11,400	5,659	8	50	12
Plywood	2,998	4,863	9	162	2
Electric Fans	4,929	4,340	10	88	6
Tanning	7,548	3,696	11	49	13
Sewing Machines	1,780	2,698	12	152	3
Sugar	107,895	2,689	13	2	19
Soap	5,310	2,495	14	47	14
Wheat Flour	4,521	2,322	15	51	11
Electric Lamps	1,340	1,898	16	142	4
Paints & Varnishes	3,739	1,652	17	44	15
Starch	1,211	1,105	18	84	9
Distillaries	4,112	508	19	12	18
Fruits & Veg. Can.	1,516	230	20	15	17
Ceramics	16,345	-455	21	-3	22
Biscuit Making	5,610	-1,055	22	-19	20

Source: Computed from India (republic), Directorate of Industrial Statistics, Report on the Census of Manufactures and the Annual Survey of Industries.

*The 1960 employment figure is adjusted by multiplying the reported data by 1.19. (see appendix).

Paper	19,776	-10,454	23	-52	25
Rice Milling	40,441	-13,864	24	-34	23
Vegetable Oil	46,950	-22,139	25	-48	24
Jute Mills	290,508	-37,535	26	-13	21

Source: Computed from India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures and the Annual Survey of Industries.

We shall also rank the states similarly.

Table 11

State Ranking by Change in Employment (1950-1960)

1	2	3	4	5	6
State	1950 Emp.	Change in Emp.* (1950-60)	Rank	% Change (1950-60) Col 3 / Col 2 x 100	Rank
Uttar Pradesh	145,909	18,636	1	13	7
Madras	126,297	16,671	2	13	7
Madhya Pradesh	45,868	16,412	3	36	3
Punjab	24,054	9,060	4	38	2
Rajasthan	8,713	8,115	5	93	1
Andhra	34,591	6,735	6	19	6
Orissa	9,203	2,033	7	22	5
Assam	5,285	1,688	8	32	4
Delhi	21,629	-6,027	9	-28	11
Bihar	87,758	-10,039	10	-11	8
W. Bengal	447,281	-97,100	11	-22	9
Bombay	490,701	-133,339	12	-27	10

Source: Computed from India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufatures and the Annual Survey of Industries.

*The 1960 employment figure is adjusted by multiplying the reported data by 1.19 (see appendix).

Paper	19,976	-10,454	23	-52	25
Rice Milling	40,441	-13,864	24	-34	23
Vegetable Oil	46,950	-22,139	25	-48	24
Jute Mills	290,508	-37,535	26	-13	21

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Punjab	24,054	9,060	4	38	2
Rajasthan	8,713	8,115	5	93	1
Andhra	34,591	6,735	6	19	6
Orissa	9,203	2,033	7	22	5
Assam	5,285	1,688	8	32	4
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Source: Computed from India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufatures and the Annual Survey of Industries.

*The 1960 employment figure is adjusted by multiplying the reported data by 1.19 (see appendix).

Among the top five industries cotton textile ranks first in absolute increase and bicycles in percentage increase. The first five industries to have shown the highest relative rates of growth in employment are Bicycles, Plywood, Sewing Machines, Electric Lamps, and Chemicals. Of these Bicycles and Chemicals are also ranked within the first five in absolute increase in employment. In 1950 Cotton Textile and jute textile together employed [illegible], 67.65 per cent of the total employment among the twenty-six industries. In 1960 this went up to 70.35 per cent. Cotton Textile has been exceeded in relative terms by 15 other industries, namely, the above top five in percentage terms plus Electric Fans, Cement, Starch, Woollen Textile, Wheat Flour, Matches, Tanning, Soap, Paints and Varnishes and Iron & Steel. This shows that as in the case of money wages, Cotton Textiles has lagged behind in employment growth also. Jute Textile presents an even more drastic picture. Employment has actually declined in this industry for the entire period. It ranks 21, with a 13 per cent decline. Thus, it is clear that the two major industries have lost ground to the other industries with respect to employment growth.

With respect to the States the most striking feature of the table is the decline in employment in West Bengal and Bombay once again the two leading industrial states in the country. Actually four out of the twelve states have shown a decline in employment.

Thus, there has clearly been a diversification of employment in that the rate of growth in employment has been greater in the case of the newer industries in relation to the older and established industries. This is seen by comparing the percentage rate of growth between Bicycles, Plywood, Sewing Machines, Electric Lamps, and Chemicals on the one hand, with Cotton and Jute textiles on the other. Even though in absolute terms Cotton and Jute textiles employ a larger number of workers their employment has not increased compared to some of the smaller industries. The picture with respect to the states is even more convincing in this respect. Bombay and West Bengal, the leading industrial states, show a decline in employment. Rajasthan shows the highest rate of growth in employment followed by Punjab, Madhya Pradesh, Assam, Orissa and Andhra.

We have to emphasize the importance of the general economic expansion and the increase in incomes that mark this period. This has further taken the form of a diversified form of growth in wages and employment resulting in differential rates of growth between industries and states. For instance, Bombay and West Bengal, the leading industrial states, which ranked low in wage increases have also conceded their position with respect to employment growth. We will

analyse these differences in greater detail while dealing with the inter-industry and the inter-state wage structure.

The effect of changes in employment on the overall level of wages will now be considered. It may be recalled that our indexes of money and real wages are weighted by current year employment. If workers move from low wage to high wage industries, the effect of such a movement can be shown by weighting the indexes by current year employment. If movement had taken place i.e. if there had been a change in the composition of employment in favor of the high wage industries the increase in the overall index may be attributed to the increased weighting of the high wage industries.[1]

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[1] Clarence Long, using different employment weights on earnings indexes for manufacturing industries in the United States suggests that about one-fifth of the rise in average annual earnings between 1860 and 1890, was due to the shift of employment from low wage to high wage industries. The following data is given by him.

Census: Annual earnings 17 industries, weighted by industrial composition of ~~employment~~ Employment in:

	1860	1870	1880	1890
Current year	100	131	117	149
1860	100	128	110	139
Effect of changing employment	---	+ 3	+ 7	+10

By using daily wages he gets negative values of -11 for 1870, -12 for both 1880 and 1890 for 13 industries in the Aldrich Report and negative values of -2 and -3 for 1870 and 1880 respectively for 18 industries drawn from Weeks Report.

Clarence Long, Wages and Earnings in the United States 1860-1890, National Bureau of Economic Research, Princeton University Press, 1960, pp. 77-78.

To find out whether the movement of workers from low wage to high wage industries had raised the overall level of wages, the indexes of money and real wages for the twenty-six industries were weighted by the composition of employment in 1950 and compared to the indexes based on current employment weight already computed in this study. The results of the comparison are shown below.

Table 12

Effect of Fixed Versus Current Employment Weights on the Indexes of Money and Real Wages, 1950-1960 (Industries)

	1950	51	52	53	54	55	56	57	58	59	60
Average annual money wages, 26 industries, weighted by industrial composition of employment in:											
Current year	100	110	115	119	119	119	124	126	129	135	152
1950	100	110	115	118	119	120	124	127	129	134	152
Effect of changing employment	--	0	0	+1	0	-1	0	-1	0	+1	0
Average annual real wages, 26 industries, weighted by industrial composition of employment in:											
Current year	100	105	113	112	117	124	118	114	111	113	124
1950	100	105	113	111	117	125	118	114	111	112	123
Effect of changing employment	--	0	0	+1	0	-1	0	0	0	+1	+1

The effect of changing employment both for money and real wages is negligible as can be seen from the slight differences for the years in which they show themselves. This would imply that the overall wage increases shown

earlier has not been influenced by a movement of workers from low wage to high wage industries.

We may now take the state series of money and real wages and subject it to the same treatment as above. In this case the crucial difference is that we do not refer to industries on an all India basis but to the industries in each state and consider the movement of workers from low wage to high wage states. The following table shows the comparison as before.

Table 13

Effect of Fixed Versus Current Employment Weights on the Indexes of Money and Real Wages, 1950-1960 (State)

	1950	51	52	53	54	55	56	57	58	59	60
Average annual money wages, 12 states, weighted by industrial composition of employment in:											
Current year	100	111	116	120	121	120	126	131	134	138	159
1950	100	111	116	120	121	120	125	131	134	137	158
Effect of changing employment	-	0	0	0	0	0	+ 1	0	0	+ 1	+ 1
Average annual real wages, 12 states, weighted by industrial composition of employment in:											
Current year	100	106	114	115	121	128	122	120	118	119	134
1950	100	106	115	115	121	128	122	120	117	117	132
Effect of changing employment	-	0	- 1	0	0	0	0	0	+ 1	+ 2	+ 2

For the years 1956, 1959, and 1960 there is a slight increase in money wages as the effect of changing employment. There are no negative signs for any of the years.

For real wages there is a slight decline in the difference in 1952. The last two years shows an increase, but this is not very significant. The position with respect to the states is not very different from that of the industries. Overall wage increases has not been influenced by a movement of workers from low wage to high wage states.

Earlier it was shown that Ceramics and Sewing Machines were the lowest and the highest wage industries for the period 1950-1960, when the absolute change in money wages is considered. In percentage change, Ceramics and Starch were the lowest and the highest wage industries respectively. In order to see whether there had been a change in employment in Ceramics, Sewing Machines and Starch, employment in all the 26 industries were ranked for each of the years from 1950 to 1960. The following table shows the ranking of the three industries among the other 26 industries.

Table 14

*Ranking of Ceramics, Sewing Machines and Starch by Employment Among the 26 Industries, 1950-1960

	1950	51	52	53	54	55	56	57	58	59	60
1. Bicycles	5	5	5	9	12	12	12	13	13	14	15
2. Biscuit	12	12	12	11	9	7	7	7	7	5	5
3. Cement	16	17	17	15	16	15	17	17	18	19	19
4. CERAMICS	17	16	16	17	17	17	16	16	16	15	14
5. Chemicals	20	20	20	20	20	20	21	21	21	22	22
6. Cotton Textiles	26	26	26	26	26	26	26	26	26	26	26
7. Distillaries	8	8	9	7	6	5	5	5	6	6	6
8. Electric Fans	10	9	7	6	5	6	4	4	5	9	12
9. Electric Lamps	2	2	2	3	3	3	3	3	3	3	3
10. Fruits and Vegetables	3	1	1	1	1	1	1	1	1	1	1
11. Glass	19	19	19	19	19	19	18	18	17	21	21
12. Iron and Steel	23	23	23	23	23	23	23	23	23	23	23
13. Jute Textiles	25	25	25	25	25	25	25	25	25	25	25
14. Matches	14	14	14	14	14	16	15	14	14	16	16

	1950	51	52	53	54	55	56	57	58	59	60
Paints and Varnishes	7	7	6	8	8	8	8	6	4	8	7
Paper	18	18	18	18	18	18	19	19	19	4	9
. Plywood	6	6	8	5	7	11	11	10	10	12	11
. Rice Milling	21	21	21	22	22	22	22	22	22	20	20
. SEWING MACHINES	4	3	3	4	4	4	6	8	9	7	4
. Soap	11	11	11	12	11	9	9	9	8	11	10
. Sugar	24	24	24	24	24	24	24	24	24	24	24
. STARCH	1	4	4	2	2	2	2	2	2	2	2
. Tanning	13	13	13	13	13	13	13	12	12	13	13
. Vegetable Oils	22	22	22	21	21	21	20	20	20	18	18
. Wheat Flour	9	10	10	10	10	10	10	11	11	10	8
. Woollen textiles	15	15	15	16	15	14	14	15	15	17	17

Source: Computed from India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures and Annual Survey of Industries.

* No 1. shows the lowest rank and No. 96 the highest rank.

Ceramics shows a fluctuation of one rank for most of the years except a change in two ranks for 1959 and three ranks for 1960. Sewing Machines shows a change of two ranks for 1956, 4 for 1957, and 5 for 1958. This industry appears to have shown some change in employment as the highest wage industry. In percentage change, Starch was the highest wage industry for the whole period, and the ranking for this is almost constant showing minor change in employment. If there has been a movement between lowest and highest wage industries, it does not seem to be very significant.

The ranking of states on the same lines was done and the lowest wage state in absolute terms was Assam and the highest, Bihar. In percentage terms these were Assam and Andhra respectively. The following table shows the ranking by employment of the three states among the other 12 states.

Table 15

*Ranking of Assam, Bihar and Andhra by Employment Among the 12 States 1950-1960

	1950	51	52	53	54	55	56	57	58	59	60
1. Andhra	6	6	6	6	6	6	7	7	7	6	6
2. Assam	1	1	1	1	1	1	1	1	1	1	1
3. Bihar	8	8	8	8	8	8	8	8	8	8	8
4. Bombay	12	12	12	12	12	12	12	12	12	11	12
5. Delhi	4	4	4	4	4	5	5	4	4	4	3
6. Madhja Pradesh	7	7	7	7	7	7	3	6	5	7	7
7. Madras	9	9	9	9	9	9	9	9	9	9	9
8. Orissa	3	3	3	3	3	2	2	2	2	2	2
9. Punjab	5	5	5	5	5	4	6	5	6	5	5
10. Rajasthan	2	2	2	2	2	3	4	3	3	3	4
11. Uttar Pradesh	10	10	10	10	10	10	10	10	10	10	10
12. West Bengal	11	11	11	11	11	11	11	11	11	12	11

Source: **Computed from India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures and the Annual Survey of Industries.**

* No 1 shows the lowest rank and No. 12 the highest rank.

The table shows very little change in ranks. It is striking to see that Bihar and Assam have not changed in ranks for any of the years.

Thus, the overall wage level has not been influenced by the change in the composition of employment. The tables show the very slow change in employment for most of the industries and states.

Summary

This chapter was concerned with an analysis of the changes in the overall wage structure relations to manufacturing industries for the period 1950-1960. Two aggregate series of average annual wages were compared. One of them has been computed from the data on average annual wages for 26 industries, and the other from the average annual wages of industries in 12 states.

A major conclusion that emerged from the analysis was that both money and real wages had increased for the period 1950-1960. Two factors were cited for the increase in wages. First the period was marked by a general economic expansion and increase in incomes. Under the stimulus provided by development planning there was an increase in investment accompanied by an increase in the percentage of national income originating in the modern wage earning sector. In this process, the average income of the factory and the mine worker exceeded that of other classes of workers. Secondly, government wage policy in industries, played an important role in influencing the increase in the level of wages. Also, government wage policy, by attempting to link the payment of dearness allowance to the consumer price index was instrumental for an increase in the dearness allowance and other components besides basic wages in the worker's total earnings, which might have partially safeguarded his real wage position in the face of price increases of the commodities that he buys.

It was contended that the size and characteristics of unions, as well as the unverified nature of its membership figures must be considered before too much reliance can be placed on any index of unionisation which would show the influence of unions in raising the level of wages.

There has been a diversification in the rate of growth of employment in so far as the newer industries have shown a greater percentage growth in employment compared to the older and established industries. Also Bombay and West Bengal which ranked low in wage increases had conceded their position to the other states with respect to employment growth. Finally it was shown that the overall wage level had not been influenced by the change in the composition of employment resulting from workers moving from low wage industries to high wage industries.

CHAPTER 3

The Inter-Industry Wage Structure

In this chapter we will analyse the trend in wage differential in manufacturing industries for all of India for the period 1950-60. This has been undertaken on the basis of our present understanding of the methods[1] of measuring wage differential changes. A detailed ranking of industries for each year on the basis of their average annual earnings will be considered. Then an investigation into the movement of wage differential will be taken up in an effort to ascertain whether the differential has narrowed or widened. Explanations would then be provided for the observed trend in the differential. Finally we will consider how employment and average annual money earnings have varied in each industry as shown by the coefficient of variation.

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[1] The following works among several others too numerous to mention are particularly relevant to the methods adopted here. Donald E. Cullen, 'The Interindustry Wage Structure', American Economic Review, Vol. 46, Pt. 1, June 1956, pp. 354-55. David R. Roberts, 'The Meaning of Recent Wage Changes', in R.A. Lester and J. Shister (ed) Insights into Labor Issues, MacMillan, 1948, p. 228. G. Bottier, 'The Evolution of Wage Differentials: The Study of British Data', in John T. Dunlop (ed) The Theory of Wage Determination, MacMillan, 1957, p. 241. A. M. Ross and W. Goldner, 'Forces Affecting Interindustry Wage Structure', Quarterly Journal of Economics, Vol. LXIV, No. 2, May 1950, p. 263.

I. Change in the Ranking of Industries in the Wage Hierarchy

The following table shows the detailed ranking of the 26 manufacturing industries on the basis of their average annual wages paid to the workers each year, for the period 1950-1960.

Number 1 refers to the lowest rank and number 26 to the highest rank and hence numbers assigned in an ascending order.

Table 16

Ranking of Industries According to Change in Average Annual Earnings (Rs.) - All India - 1950-1960

Industries	Rank										
	50	51	52	53	54	55	56	57	58	59	60
Bicycles	24	24	22	17	19	18	19	21	21	21	19
Biscuits	9	9	9	10	9	9	9	8	8	16	15
Cement	17	14	17	22	22	22	16	17	17	17	18
Ceramics	10	10	10	11	10	12	11	13	12	6	5
Chemicals	19	17	18	18	20	21	20	20	20	22	22
Cotton Textiles	22	23	23	23	23	23	23	23	19	19	20
Distillaries	12	12	11	9	11	11	8	9	11	10	8
Electric Fans	13	16	14	19	17	19	18	19	23	24	24
Electric Lamps	16	15	15	16	18	17	22	18	18	18	16
Fruits & Veg. Can	7	7	5	3	3	3	3	3	3	2	2
Glass	5	5	6	6	5	4	6	6	7	7	6
Iron & Steel	25	26	26	26	25	25	25	25	25	25	25
Jute Textile	11	11	13	12	14	14	14	11	10	9	10

	50	51	52	53	54	55	56	57	58	59	60
Matches	21	21	21	21	13	8	10	10	16	14	14
Paints & Varnish	20	20	20	20	21	20	21	22	22	20	21
Paper	15	18	19	14	15	15	17	15	15	8	13
Plywood	6	4	4	5	4	5	4	4	4	5	4
Rice Milling	1	1	1	1	1	1	1	1	1	1	1
Sewing Machine	26	25	25	25	26	26	26	26	26	26	26
Soap	23	22	24	24	24	24	24	24	24	23	23
Sugar	3	6	7	4	6	7	5	5	5	4	7
Starch	2	2	2	8	8	10	13	16	13	12	17
Tanning	8	8	8	7	7	6	7	7	6	11	9
Veg. Oils	4	3	3	2	2	2	2	2	2	3	3
Wheat Flour	14	13	12	13	12	13	12	12	9	15	12
Woollen Textiles	18	19	16	15	16	16	15	14	14	13	11

Source: Computed from, India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures and the Annual Survey of Industries.

The most striking feature of the rankings is the minor change in rank that is shown by each industry. Rice Milling has the same rank for all the ten years, as the lowest paying industry. The tie for the highest paying industry has always been between Sewing Machine and Iron and Steel in all the years. In the case of the other industries, the ranks have not altered very much year by year. A closer scrutiny of the table will reveal the following. The maximum number of rank changes is seen to be 15[1] and is shown by Starch.

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[1] The rank changes are calculated as the difference between the lowest and the highest rank attained by the industry for the whole ten year period.

We may start from this, and examine the number of rank changes for each industry. Matches changed by 13 ranks, Electric Fans and Paper by 11 ranks, Biscuit making, Cement, Ceramics, and Woollen Textiles by 8 ranks, Bicycles and Electric Lamps by 7 ranks, Wheat Flour by 6 ranks, Chemicals, Fruits and Vegetable Canning, Jute Textile, and Tanning by 5 ranks, Cotton Textiles, Distillaries and Breweries, Sugar by 4 ranks, Glass by 3 ranks, Paints and Varnishes, Plywood and Tea Chests, Soap, and Vegetable Oils, by 2 ranks, Iron and Steel and Sewing Machines by 1 rank. Rice Milling has shown no change in its rank at all.

Another striking feature of the ranking is the change in ranks of the highest and the lowest paying industries at the beginning of the period. Sewing Machines and Rice Milling show that they have remained high and low respectively throughout the period, with practically no change in their rankings. The latter has not changed in rank at all. The former registers a change of one rank, for the whole period. Finally, it is interesting to note that the leading industries, Cotton and Jute textiles have not shown a significant change in their ranking. In order to verify our analysis of rank changes, rank correlation coefficients were calculated for each year in the case of the 26 industries. The coefficients turned out to be as follows:

Table 11

Spearman Rank Correlation Coefficient for Average Annual Money Wages, 26 Industries, All India - 1950-1960

Year	Rank Correlation Coefficient
1951	.98222
1952	.97743
1953	.93230
1954	.92273
1955	.86393
1956	.86119
1957	.84888
1958	.87760
1959	.83247
1960	.78871

Source: Compiled from India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures and the Annual Survey of Industries

Note:

The ranking of the average annual money wages for the 26 industries for each of the years 1951 to 1960 have been correlated with the ranking for 1950. The formula for Spearman Rank Correlation Coefficient is as follows:

$$\rho = 1 - \frac{6 \sum_{i=1}^{N} d_i^2}{N(N^2-1)}$$

where ρ is the Spearman Rank Correlation Coefficient
d_i is the difference in rank between paired items
N is the number of pairs of observations

The high coefficients confirm our previous finding concerning the stability in the rankings. Does this mean that wage differentials have neither narrowed nor widened over the years? On the basis of our rankings we may support this conclusion. If we are not careful we may even be tempted to conclude our investigation here. But a detailed survey of the existing methods of measuring wage differential changes showed that rank order coefficients do not tell the whole story. Slichter has shown that groups of industries can show a diverse pattern of change in workers' earnings over a period of years and nevertheless retain substantially their ranking throughout that period.[1] Even though he does not discuss this possibility in detail, it is clear that the rank order coefficient measure only differentiates industries, which, at any given time, rank highest or lowest in the wage structure. It does not differentiate industries in which wages increase more or less rapidly. To find this, both absolute and relative changes have to be considered in analysing the movement of differentials.

II. The relative change in money earnings compared to its original level

To focus attention on both the absolute measure

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[1] S. H. Slichter, 'Notes on the Structure of Wages', Review of Economics and Statistics, Vol. XXXII, Feb. 1950, p. 88.

and the relative change in wages, the original level (absolute terms) of wages in each industry as of 1950 has been related to the relative change in wages as shown by the index of money wages in 1960 in each of the 26 industries.

Table 13

Ranking of Money Wages in 1950 and Percent Change in Money Wages, 1950-1960 for 26 Industries, All India

1 Industry	2 Rank of Av. Annual Wages* (Rs.) in 1950	3 Industry	4 Rank of % Increase in 1960 (1950=100)
Sewing Machine	1	Starch	1
Iron & Steel	2	Electric Fans	2
Bicycles	3	Sewing Machine	3
Soap	4	Sugar	4
Cotton Textile	5	Chemicals	5
Matches	6	Biscuit Making	6
Paints & Varnishes	7	Soap	7
Chemicals	8	Paints & Varnishes	8
Woollen Textile	9	Tanning	9
Cement	10	Glass	10
Electric Lamps	11	Cement	11
Paper & Paper Products	12	Iron & Steel	12
Wheat Flour	13	Rice Milling	13
Electric Fans	14	Electric Lamps	14
Distilleries	15	Jute Textile	15
Jute Textile	16	Cotton Textile	16
Ceramics	17	Plywood	17
Biscuit Making	18	Distilleries & Breweries**	18

1	2	3	4
Tanning	19	Wheat Flour**	18
Fruits & Veg. Canning	20	Paper & Paper Products	19
Plywood	21	Vegetable Oil	20
Glass	22	Woollen Textile	21
Vegetable Oil	23	Matches	22
Sugar	24	Bicycles	23
Starch	25	Fruits & Veg. Canning	24
Rice Milling	26	Ceramics	25

*Number 1 shows the highest rank, number 26 the lowest rank.

**Wheat Flour and Breweries, same rank in Column 4.

Source: India (Republic) Directorate of Industrial Statistics, Report on the Census of Manufactures, and Annual Survey of Industries.

Can we say that the percentage increase[1] in wages show an inverse relationship to the original level? If so, then it can be said that the structure has been pulled together and its dispersion around a central tendency such as the median has been reduced.[2] Following the procedure adopted by Cullen[3], we can choose the top five industries and the low five industries for comparison. Sewing Machine, Iron and Steel, Bicycles, Soap and Cotton Textile are the high wage industries in 1950 according to our distinction. Rice Milling, Starch, Sugar, Vegetable Oil and Glass are

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[1] Ceramics is the only industry to show a decline in wages.

[2] David R. Roberts, 'The Meaning of Recent Wage Changes', Op. Cit.

[3] Donald E. Cullen, 'The Interindustry Wage Structure', Op. Cit.

the low wage industries in that year. We have to see whether the high wage industries show an inverse relationship with respect to the relative change in wages by the end of the period as indicated by a ranking of the index of money wage in 1960. Similarly, we have to also see whether the low wage industries have shown such a tendency. Bicycles have shown a clear inverse relationship, as it is ranked among the low five in 1960. Sewing Machine has retained its position among the high wage group. Iron and Steel, Soap, and Cotton Textile have slipped in ranks. Coming to the low wage industries, Starch has clearly shown an inverse relationshp as it ranks first in 1960. Sugar also ranks among the high group in 1960. Glass, Rice Milling and Vegetable Oil do not find a place among the top five in 1960. Of these, Vegetable Oil has not shown much of a relative change and remains very near the low five industries.

What can be said about the relative change in earnings when its original level is taken into account? There seems to be a tendency for a contraction of the wage structure in percentage terms. Cases such as Bicycles, Starch, and Sugar clearly show an inverse relationship. But how significant is this contraction? The initial and the terminal years alone have been considered in the case of the high wage and the low wage industries. It seems desirable that we must compare

both the absolute and the relative change of the high wage and the low wage industries, along with the concommitant changes in the general level of wages for each year.[1] If the dispersion in the structure was around a central tendency, then it can be said that the structure as a whole may not have shown considerable expansion or contraction. This leads us to consider some measure of the dispersion of the wage structure, side by side with the movement of wage differential.

III. The relative and absolute change in money earnings compared to the dispersion of the wage structure

Following Cullen's[2] method of measuring the dispersion, the interquartile range, the median, and the absolute and percentage measures were chosen in a detailed ranking of the 26 industries for each year. These are presented below.

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[1] Commenting on the emphasis laid on absolute measures by Ross and Goldner (Op. Cit.) Edwin Mansfield cautions against drawing conclusions on this basis alone. He says there would still be the need to take account of the concommitant changes in the general level of wages. See Edwin Mansfield, 'The Measurement of Wage Differentials', Journal of Political Economy, Vol. LXII, Aug. 1954, No. 4, p. 347.

[2] Donald E. Cullen, 'Interindustry Wage Structure', Op. Cit. p. 355.

Table 19

Inter-quartile Range and Median of Average Annual Money Wages with Absolute and Percentage Differential, 26 Industries, 1950-1960

1	2	3	4	5	6	7
Year	In. Qr. Md. $\frac{\text{Col 3}}{\text{Col 4}} \times 100$	In. Qr. Range (Rs)	Median (Rs)	$\frac{\text{Top}}{\text{Low}} \times 100$	$\frac{\text{Low}}{\text{Top}} \times 100$	High - Low (Rs)
1950	46	376	816	208	48	589
1951	53	455	859	221	45	676
1952	58	520	904	225	44	713
1953	50	472	951	222	45	731
1954	48	451	946	205	49	666
1955	46	434	941	196	51	608
1956	45	456	1015	195	51	639
1957	49	507	1040	190	53	645
1958	52	565	1091	195	51	719
1959	58	636	1104	255	39	1186
1960	53	634	1200	241	41	1153

Note: In columns 5, 6, and 7, the median of the average annual earnings in those industries forming the top quarter of the earnings structure for each year, and the median of the average annual earnings in those industries forming the lowest quarter for each year, were taken to arrive at the percentage and the absolute figures.

Source: Computed from India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures and the Annual Survey of Industries

We may now analyse the table as follows. The interquartile range divided by the median shows no doubt a fluctuation. But notice that the fluctuation is within a narrow range which is around 50.[1] This

[1] Cullen concluded that the fluctuation is within a narrow range of 25 when the deviations are five percentages above and six percentages below this figure. Cullen. Op. Cit. p. 361.

narrow range gives a low dispersion in wages. In the light of this, what can we say about the movement of differentials? The absolute differentials have clearly widened as shown in column 7. Percentage differentials seem to have narrowed in so far as this tendency can be noticed in five out of the ten years. For the whole period, however, there is a widening of this differentials too.

We may be able to see more clearly the trend in wage differentials if we note the concomitant changes in the general level of wages. Columns 3 and 4 of the table have been shown for this purpose. The inter-quartile range has shown an increase up to 1953 and declined for the next two years. Thereafter it steadily increases up to 1959 and shows a slight decline in 1960. But, the range has widened if we take the whole period into account. With regard to the median, except for the two years 1954 and 1955, there is an increase for all the other years. These two tendencies strengthen our conclusion regarding the increase in the absolute differential in wages. The question is how significant is the narrowing of the percentage differential in wages noticed in columns 5 and 6. In view of the fact that the structure has been stable, its dispersion within narrow limits, we may say that the narrowing of percentage differentials for the years noticed cannot be said to be very significant. The conclusion is that

there has been a widening of wage differential. The explanations for the stability in the rankings and the widening of wage differentials are as follows.

1. The Stability in Ranking Considerable interest has been shown in studying the changes in the industrial wage structure of several countries and in undertaking international comparisons.[1] The impression gained from these studies suggests that there has been a strong similarity in the changes.

Rank correlation coefficients between the 'beginning- and end-period' industry earnings structures are presented for Sweden, U.S.A., U.K. and Canada in a study by the Organization for Economic Co-operation and Development[2] for periods varying from 8 to 51 years. It is reported that "Stability in ranking is found whether average earnings of all workers or of specific groups of workers, are studied. A separate study of Denmark,

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[1] Dunlop and Rothbaum, "International Comparisons of Wage Structures", International Labour Review, April, 1955.

Organization for Economic Co-operation and Development, Wages and Labour Mobility, a Report by a Group of Independent Experts on the Relation between Changes in Wage Differentials and the Pattern of Employment, Paris, July 1965, esp. pp. 22-23.

[2] The relationship between changes in wage differential and the pattern of employment was studied by comparing the changes in employment and variability of earnings.

Sweden, the United States, and the United Kingdom covered approximately 10-year periods in the 1950's which was made for the Group, confirms these findings. The stability noticed in our ranking suggests that the period 1950-1960 in India was marked by the same type of changes in the wage structure found in the O.E.C.D. studies. Though a direct comparison between the findings relevant for countries like Sweden, U.S.A., U.K. and Canada, and the findings relevant for India is not possible owing to the wide differences in industrial structure and general economic backgroud, the stability in ranking in the case of India does raise the question of examining whether a developing economy should have a different type of change in its industrial wage structure under an accelerated pace of industrial development. It is clear that whether a country is highly developed or not, changes in its industrial wages are very likely to be influenced by the same set of factors which influence them in more advanced countries. These factors would relate to product market conditions, capital intensity, profitability, trade union pressure, managerial objectives, changes in the skill composition of the labor force and the role of government policy in issues relating to the fixation of wages. An attempt to relate the changes in the wage structure noticed in our study to these factors is undertaken below.

2. Product Market Conditions There is reason to believe that the high paying industries in India enjoy favourable product market conditions in that they show relatively a higher degree of producer concentration compared to the low paying industries.

Information on producer concentration is scanty and until recently, was virtually nonexistent in India. The following table is based on the information supplied by the National Council of Applied Economic Research to the Planning Commission, in the course of the latter's investigation on the distribution of income and levels of living.

Table 20

Producer Concentration in Selected Industries

Industry	Year	% share of top-most unit/group in total production capacity@	% share of top-few units/groups in total production capacity@	No. of units/groups under column (4)
(1)	(2)	(3)	(4)	(5)
1. Finished steel	1958	63.70	93.36	2 groups
2. Pig iron	1958	54.63	90.08	2 groups
3. Electric Lamps	1960	40.00	88.70	14 units
4. Sewing machines	1960	88.00	88.00	1 unit
5. Soda ash	1958	52.25	84.68	2 groups
6. Electric fans	1961	51.00	82.00	4 units
7. Paper and paper board	1958	23.50	77.90	5 groups
8. Bicycles	1959	20.20	72.72	4 units
9. Cement	1960	45.00	71.90	3 groups
10. Soap	1957	30.75	69.11	4 groups
11. Matches	1960	60.00	60.00	1 group with 5 units
12. Superphosphate	1958	14.76	53.04	5 groups
13. Hydrogenated oil	1958	14.01	47.09	6 units
14. Paints and varnish	1957	11.40	45.90	6 units
15. Ceramics	1957	17.29	39.72	4 groups
16. Jute textiles*	1958	12.29	37.61	4 groups
17. Caustic soda	1958	14.76	28.51	2 groups

(over)

(1)	(2)	(3)	(4)	(5)
18. Coal	1958	11.09	24.70	3 groups
19. Sulphuric acid	1958	16.89	23.72	2 groups
20. Cotton textiles	1958	4.10	11.49	3 groups
21. Sugar	1958	-----	-----	--------
	1959	2.36	4.56	2 units

*Percentage of looms installed.

Source: Government of India, Planning Commission, Report of the Committee on Distribution and Levels of Living, Part I, New Delhi, Feb. 1964, p. 36.

Note: Top most unit or group refers to one unit or group and top few refers to more than one.

It is seen that the percentage share of the top-few units/groups in total production capacity as revealed by column 5 is the highest in the case of finished steel and lowest in the case of sugar. In our previous ranking of these industries, iron and steel was placed in the high paying group, and sugar in the low paying group, for all the years, in the year by year ranking shown in table 16 . There is a slight gain of rank for sugar but it never qualifies to be placed as a high paying industry in terms of its absolute earnings for its workers. Sewing Machines with 88 per cent of productive capacity concentrated in the hands of one unit has been the highest paying industry for all the years, except between 1951 and 1953, when it was the second highest paying industry, conceding its position to iron and steel. There is little doubt that this industry enjoys a virtual monopoly and thus possesses very favourable product market advantages.

The table does not provide information on producer concentration for all the industries considered in this study. But it clearly shows that the high paying industries enjoy considerable product market advantages. They are controlling the bulk of what is produced and have few or no competitors in their field. Given the condition that demand for both consumption and capital goods has gone up during this period, industries like sewing machines, iron and steel, chemicals, bicycles and electric fans and lamps, starch and soap have been in a position to raise their prices and hence pay higher wages to their workers. On the other hand, industries which face relatively a greater amount of competition like those in the food group, eg. sugar, wheat flour, vegetable oils and rice milling have not been able to enjoy similar product market advantages. Their price advantage lies in the general inflationary price increase which is characteristic of the period, and it is likely that the benefits of this type of price advantage have not resulted in wage increases. Where increased demand has been associated with smallness in the number of groups or units dealing with the product, workers engaged in such groups or units have been able to get the benefit of the favorable product market condition. The continued enjoyment of this advantage has kept the high paying industries at the higher ranks, compared to the lower ranks maintained by the low paying industries.

This has served as one of the reasons for the wage differential to be maintained between the two.

Another factor which has influenced to create favorable product market conditions is the import control policy followed by the government. Controls were introduced as a war time measure in 1940. After 1947, import control policy entered a new phase when it came to be linked up with foreign exchange control. Importers have been divided into three categories, namely actual users, established shippers and new comers, and there is restriction on imports to the extent that goods cannot be imported without a license. This has come in the wake of increased demand for both capital and consumption goods, creating more scarcity and thereby adding to the favourable market conditions enjoyed by the industries.

3. Capital Intensity Can it be said that industries that are more capital intensive have been experiencing greater productivity and hence finding it possible to pay higher wages? In other words can an increasing trend in fixed capital per worker be associated with increasing wages? In order to ascertain this the index of fixed capital per worker for each of the twenty-six industries was constructed and compared to the index of money wages already calculated for the period 1950-1960. The five industries showing the highest percentage rates of growth in fixed capital per worker were compared to the five industries showing the highest rates of growth in

money wages. The same type of comparison was made in the case of the five industries showing the lowest rates of growth in fixed capital per worker. The following table gives the result of the comparison.

Table 21

Comparison of Fixed Capital Per Worker and Money Wages for Industries 1951-1960 Base 1950=100

High capital intensity		High money wage	
Iron and Steel	[1]	Starch	[1]
Starch	[2]	Electric Fans	[2]
Sugar	[3]	Sewing Machines	[3]
Cement	[4]	Sugar	[4]
Chemicals	[5]	Chemicals	[5]
Low Capital intensity		**Low Money Wages**	
Vegetable Oils	[1]	Ceramics	[1]
Fruit Canning	[2]	Fruit Canning	[2]
Electric Lamps	[3]	Bicycles	[3]
Rice Milling	[4]	Matches	[4]
Soap	[5]	Woollen Textiles	[5]

N.B. Figures in bracket indicate rank.

In the Indian context there has been a trend for increasing capital intensity in manufacturing industries. This was revealed by the calculation made in this study and also by others.[1]

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[1] See J. C. H. Fei and Gustav Ranis, Development of the Labor Surplus Economy: Theory and Policy, The Economic Growth Center, Yale University, 1964.

The table shows that in the case of the high capital intensity group, starch, sugar, and chemicals provide a comparison. Whereas in the case of the low capital intensity group only fruits and vegetable canning provides a comparison. Iron and steel in the former group showing the highest rate of growth in fixed capital per worker ranked, twelfth in its rate of growth in money wages. Though the association between increased fixed capital per worker and money wages is stronger in the high capital intensive group than the low, the relationship cannot be too strongly emphasized and is by no means definite. An examination of the rest of the industries only confirmed this view. The mere increase in fixed capital does not necessarily imply that workers in such industries earn a higher wage compared to those in other industries having a lower ratio of fixed capital per worker.

4. Profitability

The economic rationale for linking profits with wages lies in the capacity and willingness of managements in industries having higher profits to grant wage increases. Reviewing studies made in the United States on the relation between profit and wages, and related variables like concentration, degree of unionization and product price, Reder feels that if a distinction between the "market power" sector and the "competitive" sector of industries can be made, an explanation can be suggested for the payment of relative increases in wages in the former sector.[1] Arguing that at the end of World War II both sectors were confronted with situations of strong demand and high profits, he suggests,

> "The competitive sector acted to eliminate its excess demand faster than the market-power sector where long gestation periods of capital goods combined with a cautious outlook to hold back the investment program. This made the market-power sector's period of high profits, full capacity operation, and "strength" in product prices last longer than the competitive sector's period did. This,

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[1] M. W. Reder, "Wage Differentials: Theory and Measurement," Aspects of Labor Economics, A Report of the National Bureau of Economic Research, Princeton University Press, 1962, p. 293.

The distinction has been made by W. G. Bowen in his book Wage-Price Issue: A Theoritical Analysis, Princeton University Press, 1960. The "market power" sector consists of industries that are both highly concentrated and highly unionized, and the "competitive" sector of industries having the reverse characteristics.

> in turn, facilitated the payment of relative increases in earnings (in the market-power sector) during most of the 1950's.[1]

Further, he also emphasizes the crucial role of product prices, that is when "firms believe that cost increases can be passed on to buyers, they are more inclined to grant wage increases than when the reverse is the case."[2]

Thus, the capacity and willingness of managements to grant wage increases depends on the period of high profits, full capacity operation and "strength" of product prices. If these are prolonged the management would be inclined to pay their workers more.

In India, we have already seen that the payment of bonus is based on profitability. The quantum of bonus is determined by what is know as the Full bench Formula[3] by which depreciation, taxes, reserves for rehabilitation, interest on paid up capital and return on reserves employed are deducted from gross profit to arrive at the available surplus for distribution as bonus. But what is not clear is the procedure for set off if the management incurred a loss. Much depends on how the management can carry over the surplus for a succeeding year if loss is incurred. Since it is necessary to relate profitability

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[1] Ibid. p. 294

[2] Ibid.

[3] The formula was laid down by the Full Bench of the Labour Appellate Tribunal, Bombay, in Mill Owners Association verses Rashtriya Mill Mazdoor Sangh in 1950, and subsequently the parties entered into a bonus pact for the years 1952-1956.

and wages for each year to study their trend, we need to know when the bonus is paid and how adjustments are made to carry over the surplus in case of loss. In the absence of data on this it is difficult, in the Indian context, to correlate profitability and wages in an attempt to find their relationship. One study, the only one known to this writer, correlates average daily wages with the gross profitability ratio for the period 1950-52, 1953-55, 1956-58 and 1959-61 in the case of manufacturing industries in India, and finds that barring the second period wage and profitability are significantly related.[1] Though this study does not analyse wages and profitability with the view to explain wage differences among the industries, this finding is of value in showing that profitability does have a relation to wages in the Indian context. Given this, it can be argued that the widening of wage differentials between the high wage and the low wage industries must be due to the profit position of the former compared to the latter.

5. Government Intervention in Wage Fixation

In this part of our study we are primarily interested in explaining the observed widening of the wage differ-

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[1] C. K. Johri and N. C. Agarwal, "Inter-Industry Wage Structure in India 1950-61 - An Analysis, Indian Journal of Industrial Relations, Vol. 1, No. 4, April, 1966, pp. 395-96.

ential between the high and the low wage industries. In assessing the influence of the role of government in wage fixation on wage differentials we may consider the official policy which has emphasized two things.

1. The process of standardization of wages should be accelerated and extended to as large a field as possible. This essentially meant the narrowing of differentials.

2. Differentials for various jobs should be maintained at the minimum levels justified by the degree of skill required, the strain and fatigue involved, the training and experience required, the responsibility to be undertaken, the mental and physical requirements for doing the work, the disagreeableness of the task and the attendent hazards.[1] This essentially meant the recognition of wage differentials. There appears to be a contradiction between the desire to narrow differentials and the desire to recognize their incentive value. The equity and the economic points of view are both stressed and their combined impact on differentials is difficult to determine.

In May 1956, the Ministry of Labour and Employment set up an official 'Study Group on Wages' for the preparation of the wage material which would be needed by the Wage Boards and also by the government. In 1957 the group was reconstituted and representatives of state governments, employers and workers' organizations and an economist were associated with it.[2] Its views constitute a

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[1] Government of India, Planning Commission, First Five Year Plan, Ch. XXXIV, para 47.

[2] Government of India, Labour Bureau, Consultative Machinery in the Labour Field, Labour Bureau Pamphlet Series, I, 1959

reliable source for understanding the policy of the government on matters relating to wage differentials.[1] The Study Group points out that it is necessary to bear in mind that in any attempt to redraw wage differentials, employees everywhere attach great importance to prevailing differentials, be they scientific or not, and often exercise pressure to maintain those differentials.[2] This view goes to show the underlying approach for the formulation of a policy with respect to wage differentials. If employees attach importance to differentials it would imply opposition to any type of suggestion for the reduction of differentials based on a scientific evaluation of job content.[3]

So far there has been no clear cut pronouncement of government policy with respect to job evaluation and its relationship to wage differentials. Recommendations

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[1] Government of India, Ministry of Labour and Employment, Some Papers on Wage Policy, New Delhi, 1957. See also "Some General Principles in the Determination of Industrial Wages in India", Indian Labour Gazette, Vol. XV, No. 6, Dec. 1957, and "Principles of Wage Fixation", Indian Labour Gazette, Vol. XV, No. 8, Feb. 1958. These two articles have been published by the Labour Bureau in a series for giving information on the work of the Study Group on Wages.

[2] Some Papers on Wage Policy, Op. Cit. p. 3.

[3] Both scientific considerations and employer-employee cooperation are stressed for implementing a wage differential scheme. Ibid. p. 3.

for job evaluation and for evolving a standard occupational classification exists, but these have not figured prominently in cases where the government has intervened in the fixation of wages. Some adjudicators have merely fixed the minimum basic wage and left the determination of wage differentials to the parties themselves. Others have made a distinction between unskilled, semi-skilled and skilled and fixed separate rates for each group.

Government policy towards fixing dearness allowance has been cited as a factor in raising the minimum wage payable and thereby compress the differentials between different classes of workers.[1] This is more so if the dearness allowance is awarded as a flat rate regardless of the income group. The flat rate will tend to pull up the wages of workers in the lower category and the wage differential between the higher and lower categories of workers will be narrowed. The following table shows the estimated percentage of workers getting dearness allowance according to the system of payment.

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[1] Philip Kotler, Problems of Industrial Wage Policy in India, Unpublished Ph.D. thesis, Massachusetts Institute of Technology, 1956, p. 281.

Table 22

Percentage of Units Paying and Workers Receiving Dearness Allowance According to System of Payment, 1958-1959

Industry	Units paying D.A.	Workers Receiving D.A.	Percentage of Workers getting D.A. according to			
			Consumer price index	Flat rate	Income Groups	Others
	1	2	3	4	5	6
1. Factory industries	38.1	76.5	40.9	27.3	30.7	1.1
1.2 Other factory industries	33.0	40.4	32.1	21.7	41.6	4.6
1.3 Engineering	41.8	85.4	11.0	2.1	85.8	1.1
2. Plantation industries	76.5	60.8	0.3	7.9	0.2	91.6
3. Mining industries	73.7	84.7	81.5	2.7	10.4	5.4

Source: India(Republic) Ministry of Labour and Employment, Occupational Wage Survey, General Report, 1958-1959, Simla, 1963, pp. 42-46.

Note: Factory industries refer to textile, (cotton, jute, silk and woollen); other factory industries are, cement, paper, sugar, chemicals, and printing presses. Engineering, refers to electrical machinery, metal extracting and refining, ship building, railway workshops, tramway workshops, motor vehicles, aircraft and bicycles. Plantation industries includes, tea, coffee and rubber. Mining relates to coal and manganese. The occupational wage survey was launched in July 1958 and completed by the end of August 1959.

Column 2 of the table shows that more than three fourths of the workers get dearness allowance in the textile group of industries, engineering and mining. About 60 per cent in plantations and 40 per cent in other industries receive it. Except in the case of plantations, workers getting dearness allowance linked to the consumer price index form a larger percentage than those receiving it at a flat rate. In view of this it is doubtful whether the granting of a flat rate allowance would have very

much compressed wage differentials.[1]

6. Skill Composition of the Labor Force in Manufacturing

During periods of rapid economic growth one would expect short run inelasticity in the supply of skilled labor in underdeveloped countries which would lead to an increase in its wage rate. A widening of the differential between skilled and unskilled labor would result and this process would continue for some time. When training gets underway and the general level of education is raised and as economic development takes place, the difference in the wages of unskilled and skilled labor will begin to narrow. Such narrowing can be attributed to a diminution in the number of unskilled labor and a gradual change in the skill composition of the labor force. By this is meant an increase in the proportion of skilled labor relative to unskilled labor when the total supply of labor is

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[1] In cotton textiles 22. 5 per cent of the workers got the flat rate while 66 per cent had their allowance linked to the price index. Only in the case of jute textiles 95. 5 per cent of the worker had a flat rate allowance. Occupational Wage Survey, Op. Cit. Probably the compression of wage differentials would be more in the case of West Bengal, which is the center of this industry.

considered. Turner, for instance, points out that differentials for manual and intellectual skills required by industrial development will be wide.[1] He further points out that some of these differentials can be attributed to wider skill differential, and that racial differentials are important in some countries. At the same time, Turner also finds some non-skill differential to exist in apparent defiance of labor market circumstances. "It is hard to see," he says, "why differentials should go on widening - as it probably has in both Africa and Latin America - in face of substantial and growing unemployment."[2] There has even been some doubts cast on the inevitability of a particular natural history of wages in the course of development. For instance, a tendency toward a 'wage drift' is suggested in the light of wage rates being individually re-negotiated.[3]

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[1] H. A. Turner, Wage Trends, Wage Policies, and Collective Bargaining: The Problems for Under-developed Countries, University of Cambridge, 1965, p. 11.

[2] Ibid. p. 16-17.

[3] Subbiah Kannappan, A Study of Wage Differentials in India, unpublished manuscript, University of Washington, July 13, 1960, pp. 33-34. See also Walter Galenson (ed) Labor in Developing Economics, Institute of Industrial Relations, University of California, Berkeley, 1963. (Galenson says that the essays in this volume that deal with the theory of a narrowing of wage differentials as development proceeds, raise considerable doubt on the validity of the theory. p. 8.)

The above observations call for a detailed investigation of the types of skills used in each industry. This should be followed by a more detailed assessment of the changes in the requirement of different types of skills in the different industries, over an extended period of time. The effect of these changes on the trend in wage differentials between the different skills has to be studied. A search in this direction in the case of India revealed that at the present time, the undertaking of such a study is badly handicapped by the lack of data on skill requirement by industries. It is further hindered by a lack of data on wages by occupations (skills). Let us pursue this point at some length.

The first wage Census after independence was taken in July, 1958, and completed in August, 1959.[1] It is the main source of information on occupational wages. Meanwhile, in 1956 the Scientific and Technical Manpower and Perspective Division of the Planning Commission had made a study on the skill coefficients in different industries.[2] But, neither of these reports help us in estimating the changes in the requirement of skilled labor in different industries.

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[1] Occupational Wage Survey, Op. Cit.

[2] Government of India, Planning Commission, Scientific and Technical Manpower and Perspective Division, Occupational Pattern in Manufacturing Industries, India, 1956, New Delhi, 1959.

There is some reason to suspect that there has been a decline in the proportion of unskilled labor relative to skilled labor in some of the industries. The changes in the proportion of unskilled and skilled workers, in manufacturing industries in the private sector, between 1956 and 1961, is shown in very general terms in a study put out by the Directorate General of Employment and Training.[1] It shows that at least in nine industries (food and kindred products; textile mill products; chemicals; rubber, petroleum and coal; stone, clay and glasses; Basic Metal products; machinery and electrical equipment; transport equipment; and others) the overall position with respect to the change in the proportion of unskilled to skilled labor revealed that between 1956 and 1961 the proportion of unskilled labor declined from 47% to 24%, whereas that of skilled labor rose from 42% to 63%. This study attempts to make a comparison between the earlier one referred to above by the Planning Commission in 1956, and its own finding in 1961 with respect to the changes. As emphasized at the beginning of this para, we can only suspect that there has been a change in the proportion of skilled workers relative to unskilled workers. But, in part, this change is

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[1] India, Ministry of Labor and Employment, Directorate General of Employment and Training, Occupational Pattern in Private Sector, India, 1961 (mimeographed), No date, no place.

clearly spurious. This is because the study itself points out "Certain occupations which have been classified as unskilled in the Planning Commission's Study in 1956 have presumably been classified as unskilled or semi-skilled and included in the category of craftsmen and production process workers in the present study. This may be one of the reasons for variations in the proportion of craftsmen and production process workers in manufacturing industries in 1956 and 1961."[1]

Unfortunately, the study has not presented any data on wages which would have enabled us to make an assessment of the changes for the purpose of comparing it with our own finding as to the widening of wage differentials. If skilled labor has increased, its effect would be felt on both the level of wages as well as on its differential between the skilled and the unskilled. In the light of this, the following explanation for the widening of wage differentials can be offered. In the context of a planned growth of industrialization, skilled labor would be in short supply, and wages would rise in industries requiring a higher proportion of skilled labor. In our study, iron and

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[1] Ibid. p. 14. The data on skilled workers whose change is discussed here relate to craftsmen and production process workers, as next to unskilled labor they constituted the largest element of the labor force in the figures furnished in the report.

steel and sewing machine have been the high wage industries compared to rice milling which has throughout been the lowest wage industry. The proportion of skilled labor is likely to be higher in iron and steel and sewing machine compared to that in rice milling. The differences in their wages may be attributed to the differences in the skill composition of their labor force.

IV. Variation in Wages and Employment

The Organization for Economic Co-operation and Development studied the relation between changes in wage differentials and the pattern of employment. The economic rationale of their study of workers in manufacturing industries was to see whether there was an association between changes in the number of blue collar workers employed and changes in their relative earnings. In stating the rationale of the relationship, the group of independent experts who made the study for the O.E.C.D. point out:

> "The fact that a sectors variation in employment is typically much greater than its variation in earnings increase may be felt to carry the implication that changes in relative earnings have not been an important cause of changes in the structure of employment. But it is also consistent with the interpretation that the employment structure is highly sensitive to changes in relative wages (i.e. that intersectoral elasticities of substitution are significantly greater, in

> absolute value, than unity). In general, the Expert Group inclines towards the wage-insensitive interpretation of these data, because it believes that it is more strongly supported by additional evidence than the wage-sensitive hypothesis."[1]

The above passage raises two questions. Is change in earnings a cause for change in employment? It is said that a greater variation in employment than earnings may imply a negative answer to it. Also, is employment highly sensitive to wage changes? Here the group leans towards the wage-insensitive interpretation, though a greater variation in employment may be consistent with the wage-sensitive interpretation. This leaning is in part due to their finding that changes in earnings are influenced by other variables besides labor requirement (employment change) such as, profit rates and charges in profit, degree of concentration, rate of production growth, the ratio of labor to total cost, and employment experience in a previous period.

The coefficient of variation with respect to employment is shown to be greater than earnings in

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[1] Organization for Economic Co-Operation and Development, Wages and Labour Mobility, Paris, July, 1965, p. 45. The coefficient of variation is calculated for wages and employment for different time spans of 1, 3, 5, and over 7 years for North America and Europe separately by 'General Industrial breakdowns'. 'Industry breakdowns with restricted coverage' for special occupational groups for Germany and Canada and the Canadian general breakdowns for Montreal and Toronto is also given. See p. 44.

the O.E.C.D. study. The group points out:

> "Whatever the period length considered, the deviation of an industry's (or region's or occupation's) employment change from the average change in employment over the relevant group is usually not less than three times the deviation of that industry's rate of wage advance from the general rate of wage increase; and in certain countries and periods, the factor has been as much as 10 to 1."[1]

They have taken the range of variability in wages and employment. In the case of 'industry breakdowns with restricted coverage', the coefficient has ranged from 0. 5 to 1. 0 for wages, whereas for employment from 1. 5 to 2.8. They also present certain percentage changes in employment and wages. To quote them:

> "In the United States, between 1953 and 1960, employment in manufacturing in Arizona rose by 77 per cent and in Michigan it fell by 18 per cent, but the annual rates of increase in average earnings were respectively 4. 1 and 4. 0 per cent. In United Kingdom manufacturing, employment in radio manufacture rose by 12 per cent in 7 years (earnings increase:- 5. 7 per cent per annum); in textile machinery it fell by 20 per cent (earnings increase:- 5. 8 per cent)."[2]

Thus, if the variation in employment is greater than that of wages, they were inclined to support the view that the wage-insensitive hypothesis is probably correct.

Depending on whether one considers sectoral, industrial or geographical variations in employment and wages, and the period for which the coefficient of

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[1] Ibid.

[2] Ibid., p. 45.

variation is calculated one could arrive at differenct results. [~~Relying on the method of using the coefficient of variation as a statistic to relate changes in wages and employment, the coefficient is presented for the 26 industries considered in this study.~~]

Relying on the method of using the coefficient of variation as a statistic to interpret the changes in wages and employment, the coefficient was calculated for the 26 industries considered in this study. We will consider both the range of variability as well as the magnitude of the coefficient, ie., is one coefficient much greater or only somewhat greater or less than the other coefficient of variation.

Table 23

Wages and Employment Variability
About Average Rate of Change - 26 Industries
1950-1960

1 Money Wages	2 Coefficient of Variation	3 Employment	4 Coefficient of Variation
1. Starch	37.80	1. Bicycles	49.26
2. Electric Fans	32.14	2. Paper	41.29
3. Sewing Machines	28.85	3. Sewing Machines	29.76
4. Biscuit Making	19.63	4. Electric Fans	27.47
5. Chemicals	19.20	5. Plywood	26.84
6. Sugar	18.96	6. Rice Milling	26.59
7. Soap	17.97	7. Starch	24.24
8. Glass	16.92	8. Vegetable Oil	23.26
9. Tanning	16.12	9. Electric Lamps	20.76
10. Paints & Varnish	15.13	10. Ceramics	18.79
11. Vegetable Oil	14.20	11. Cement	18.66
12. Rice Milling	13.93	12. Chemicals	18.46
13. Cement	12.91	13. Biscuit Making	15.70
14. Plywood	12.89	14. Glass	15.49
15. Electric Lamps	12.10	15. Matches	14.00
16. Matches	11.66	16. Wheat Flour	12.41
17. Bicycles	11.29	17. Fruits and Veg. Canning	11.51
18. Iron and Steel	11.02	18. Woollen Textiles	11.06
19. Wheat Flour	10.84	19. Soap	10.03

1	2	3	4
20. Distilleries	10.37	20. Tanning	9.85
21. Jute Textiles	10.02	21. Jute Textiles	8.45
22. Ceramics	9.92	22. Sugar	6.87
23. Cotton Textiles	9.04	23. Paints & Varnish	6.69
24. Paper	9.01	24. Iron and Steel	6.27
25. Fruits & Veg. Canning	8.22	25. Cotton Textiles	5.79
26. Woollen Textiles	6.09	26. Distilleries	5.52
All India	41.08	All India	253.42

Source: India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures and the Annual Survey of Industries.

Coeff. of Variation[1] = $\frac{\sigma}{\bar{x}}$ where σ is the stadard deviation and $\bar{x}$ is the arithmetic mean.

The data reveals a fairly wide range in the value of the coefficients. For money wages the range is from 6. 09 to 37. 80, while for employment it is still higher from 5. 52 to 49. 26. The overall coefficients for all the 26 industries show that the variation in employment is greater than the variation in wages. This means that changes in wages have not played an important part in influencing the changes in employment for the manufacturing industries as a whole.

The above conclusion is subject to an important qualification in the light of two types of findings relating to high wage and low wage industries which may be considered. Earlier it was shown that Sewing Machines

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[1] For calculating the coefficient of variation average annual earnings and employment figures have been used. The calculations are not based on the indexes of earnings and employment, as it was felt that the true base year figure would not be reflected in the variation in this case.

and Electric Fans were the high wage industries and Ceramics and Rice Milling were the low wage ones in absolute change in wages. The magnitude of the coefficient of variation in Sewing Machines for both employment and wages seem to be very close, with the former slightly higher. But, for Electric Fans the coefficient is higher for wages. For the low wage industries, we see that the magnitude of variation in Ceramics and Rice Milling is higher for employment.

In percentage terms, Starch and Electric Fans, were the high wage industries and Ceramics and Fruits and Vegetable Canning were the low wage ones. The magnitude of variation in wages is higher in Starch and Electric Fans compared to that of employment. On the other hand, for Ceramics and Fruits and Vegetable Canning, the coefficient of variation is higher for employment, compared to the coefficient for wages.

Thus, in considering the magnitude of variation for the low wage industries there has been a greater variation in employment, whether we consider absolute or percentage change in wages. For the high wage industries, if we take the absolute change in wages, Sewing Machines shows a slightly higher coefficient for employment. But when we consider percentage changes, the variation in wages in both these industries is higher than the variation in employment. It appears that changes in wages have played an important part in influencing changes in employment in the high wage industries, whereas such an influence is not apparent in the case of low wage industries.

Summary

This chapter focussed on the inter-industrial wage structure. A distinction between high wage and low wage industries was made and the wage differential between the two was considered in terms of both absolute and percentage changes.

We first tried to see whether industries had altered their rankings in the wage heirarchy. This showed that very little changes in the ranking had taken place and that the highest and the lowest wage industry had practically retained their ranks throughout the period. We then considered the trend in wage differential by taking into account the concomitant changes in the general level of wages. This led to the conclusion that wage differentials had widened both in absolute and percentage terms for the whole period.

By way of explanation, it was submitted that changes in the wage structure in a country like India, undergoing an accelerated tempo of industrialization, would be influenced by the same set of factors which influence wages in more advanced countries. These were product market conditions, capital intensity, profitability, government intervention in the regulation of wages, and changes in the skill composition of the labor force. These factors were in turn considered as explanations for the observed trend in wage differentials.

Favorable product market conditions were cited for the difference in wages between the high wage and the low wage industries, and for the widening of such differences. The widening of differential between the high wage and low wage industries cannot be attributed to any definite relationship between fixed capital per worker (capital intensity) and average annual earnings.

The widening of differential could be attributed to relative

profitability between the industries. But more information on profits relative to individual units is required to further substantiate this point.

With respect to government intervention in the regulation of wages in India, it was shown that government policy on differentials emphasised narrowing of differentials on equity grounds, and the maintenance of it to provide incentive for better performance on the part of labor. But no attempt has been made to enforce a policy on differentials, based on job evaluation and by evolving a standard occupational classification. In the face of this the influence of government policy on differentials has been neutral. It has contributed neither to its narrowing nor to its widening. It was also shown that workers who received a flat rate on dearness allowance which would compress differentials constituted a lower percentage, than those who received it as linked to the consumer price index. In view of this it was doubtful whether this had actually led to compression of wage differentials.

In considering the differentials in wages, it was suggested that wages may have increased in industries requiring a higher proportion of skilled labor. Due to inadequate training facilities, there might be a shortage of skilled labour relative to its demand. This might result in an increase in wages in industries like iron and steel and sewing machine requiring a higher proportion of skilled labour as against rice milling and vegetable oil where such requirement is relatively less.

Finally an attempt was make to find out whether changes in wages played an important role in influencing changes in employment. For this the variation in wages and employment was considered. It

was found that changes in wages have played an important role in influencing the changes in employment in the high wage industries compared to the low wage ones.

CHAPTER 4

Inter-State Wage Structure

Let us now consider the inter-state wage structure and examine the nature of its wage differential. It was pointed out that the overall increase in wages with respect to the states for the period 1950-1960 was 59 per cent. In this, Bihar showed the largest increase in absolute, and Andhra the highest increase in percentage terms. Assam showed a decline in money wages while the leading states of Bombay and West Bengal showed a lower percentage increase in wages than several other states. We will investigate these changes in greater detail and examine the nature of the wage differential by taking the aggregate of the manufacturing industries in each state.

1 Ranking of Average Annual Money Wages by States

A year by year ranking of the average annual money wages by states is shown below. Number 1 refers to the lowest rank and number 12 to the highest rank and hence the numbers assigned in an ascending order.

Table 4.1

State Ranking of Average Annual Money Wages for Each Year 1950 - 1960

	50	51	52	53	54	55	56	57	58	59	60
Andhra	1	1	1	1	1	1	1	1	1	2	2
Assam	9	6	8	8	7	8	8	8	8	1	1
Bihar	10	12	12	10	11	12	12	11	11	12	12

	50	51	52	53	54	55	56	57	58	59	60
Bombay	12	10	11	12	12	11	11	12	12	10	11
Delhi	11	11	10	11	10	10	10	10	10	11	10
Madhya Pradesh	5	4	4	4	5	5	4	7	7	9	7
Madras	7	7	6	7	8	6	7	6	6	6	9
Orissa	2	2	2	2	2	2	2	2	2	3	3
Punjab	4	5	5	6	6	7	6	5	5	7	5
Rajasthan	3	3	3	3	3	3	3	3	3	5	4
Uttar Pradesh	6	9	7	5	4	4	5	4	4	4	6
West Bengal	8	8	9	9	9	9	9	9	9	8	8

Source India (Republic) Directorate of Industrial Statistics, Report on the Census of Manufactures, and Annual Survey of Industries

Once again we see that there has been very little change in the ranks. Four out of twelve states show a change of only one rank. The position of the high paying and the low paying states undergo very little change. This is clearly seen in the ranking of Bombay and Bihar as the high paying states and Andhra and Orissa as the low paying states. The rank correlation coefficients for each year turned out to be as follows.

Table [illegible]

Spearman Rank Order Correlation for Average Annual Wages by States 1950 - 1960

Year	Rank Correlation Coefficients
1951	.90209
1952	.95804
1953	.97202
1954	.94405

Year	Rank Correlation Coefficients
1955	.92307
1956	.95104
1957	.95104
1958	.95104
1959	.62237
1960	.71328

Source Computed from, India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures, and Annual Survey of Industries

Note **The ranking of the average annual money wages for the 12 states for each of the years 1951 to 1960 have been correlated with the ranking for 1950. The formula used is as follows:**

$$\rho = 1 - \frac{6 \sum_{i=1}^{N} d_i^2}{N(N^2-1)}$$

where ρ is the Spearman Rank Correlation Coefficient
d_i is the difference in rank between paired items
N is the number of pairs of observations

The high values of the coefficient show the slow change in the ranking by states. Up to 1958 the values are fairly close to .95. But there is a sharp discontinuity in the value for 1959 and 1960, which may be due to the difference in statistical coverage. For the period up to 1958, a comparison of the coefficient with the actual ranking in the previous table shows, that there has been very little change in the ranks in each state. For 1959, Assam alone shows a very sharp change in its rank while the change in the case of the other states appears to be rather small. Nevertheless, in interpreting the change for the whole period by comparing the base and terminal year, the discontinuity

in the data after 1958 must be borne in mind.

Next we will analyse the trend in wage differntials in absolute as well as percentage terms. The following table presents the difference in wages between the highest and the lowest paying state for each year from 1950-1960.

Table [illegible]

Wage Differential Between the Highest and the Lowest Paying State 1950 - 1960

Year	Highest - Lowest Rs.	$\frac{\text{Lowest}}{\text{Highest}} \times 100$
1950	734	36.68
1951	924	32.96
1952	981	31.04
1953	952	34.06
1954	931	35.37
1955	929	35.99
1956	793	44.26
1957	830	44.41
1958	823	45.56
1959	1215	38.83
1960	1407	37.08

Source Computed from India (Republic) Directorate of Industrial Statistics, Report on the Census of Manufactures, and Annual Survey of Industries.

For the period 1950-1958 there has been a widening of absolute differentials. The sharp rise for 1959 and 1960 in this column must once again be due to the statistical discrepancy in the sources. Percentage differentials

appear to narrow up to 1955 and thereafter widens up to 1958, before narrowing. To some extent, the discontinuity in the data for 1959 and 1960, may be the reason for the rather sharp change in the values. However, we are not stopping at this point to draw conclusions on the nature of the change in the differential, for we will also consider the concommittant changes in the general level of wages. For this, the overall average annual wages of all the 12 states is taken as a point of reference and the change in this overall average is related to the change in the average annual wage of the highest and the lowest paying state by taking their deviations for each year.

Table 27

Deviation in Average Annual Wage of the Highest Paying State and the Lowest Paying State from the Average of all States - 1950-1960

Year	Highest Paying State(Rs)	Highest - Average (Rs)	% Deviation from Average Col. 3 / Col. 5 x 100	Overall Average All 12 States(Rs)	Lowest Paying State(Rs)	Average - Lowest(Rs)	% Deviation from Average Col. 7 / Col. 5 x 100
1	2	3	4	5	6	7	8
1950	1159	226	24.29	933	426	507	54.41
1951	1379	336	32.29	1043	455	588	56.39
1952	1423	331	30.40	1092	443	649	59.52
1953	1444	317	28.19	1127	493	634	56.33
1954	1440	306	27.07	1134	510	624	55.05

1	2	3	4	5	6	7	8
1955	1451	332	29.73	1119	523	596	53.30
1956	1423	262	22.63	1161	631	530	45.72
1957	1494	228	18.02	1266	664	602	47.58
1958	1511	274	22.23	1237	689	548	44.31
1959	1836	603	48.98	1233	622	611	49.60
1960	2236	810	56.84	1426	830	596	41.83

Source Computed from, India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures, and Annual Survey of Industries.

Note The highest paying state for 1950, 1953, 1954, 1957 and 1958 was Bombay, and for the remaining years, Bihar. The lowest paying state from 1950 to 1958 was Andhra, and for the remaining years, Assam.

Part of the statistical discrepancy caused by the difference in sources for 1959 and 1960 can be reduced by analyzing the period up to 1958 in the above table. If we exclude the last two years, we get a narrowing, rather than a widening or maintenance of percentage differentials between the highest and the lowest paying states. But, owing to the considerable fluctuations in Columns 4, 5, and 8, there is a clear case for investigating the rates of growth in money wages in each state. First, we can rank the average annual money wages in each state for the base year, 1950. Then the percentage change in wages between 1950 and 1955 can be ranked. Next the similar change between 1955 and 1960 can be ranked. Finally, the change in rank for the whole period 1950-1960 can be presented. The table below shows the rankings.

Table 23

State Ranking of Average Annual Money Wages for 1950, With Percentage Change in Ranks for 1955 and 1960

State	Av. An. Wages (Rs.)	Rank	Av. An. Wages 1955 (Rs.)	% Change over 1950 Col. 4 / Col. 2 x 100 =	Rank	Av. An. Wages 1960 (Rs.)	% Change over 1955 Col. 7 / Col. 4 x 100 =	Rank	% Change 1950-60 Col. 7 / Col. 1 x 100 =	Rank
1	2	3	4	5	6	7	8	9	10	11
Bombay	1160	[1]	1379	19	[6]	1759	27	[7]	52	[8]
Delhi	1134	[2]	1294	14	[7]	1757	35	[5]	55	[7]
Bihar	1133	[3]	1452	28	[3]	2237	54	[2]	97	[2]
Assam	841	[4]	961	14	[7]	829	-14	[10]	-1	[10]
West Bengal	812	[5]	1033	27	[4]	1237	19	[9]	52	[8]
Madras	794	[6]	904	14	[7]	1329	47	[3]	67	[4]
Uttar Pradesh	765	[7]	827	8	[9]	1154	39	[4]	51	[9]
Madhya Pradesh	760	[8]	828	9	[8]	1225	47	[3]	61	[5]
Punjab	714	[9]	930	30	[2]	1119	20	[8]	57	[6]
Rajasthan	670	[10]	766	14	[7]	1012	32	[6]	51	[9]
Orissa	523	[11]	722	38	[1]	920	27	[7]	76	[3]
Andhra	425	[12]	523	23	[5]	877	67	[1]	106	[1]
ALL INDIA	933		1119	20		1426	27		59	

Source: Computed from India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures, and Annual Survey of Industries.

In column 2 the states have been ranked according to their average annual money wages in 1950, highest to the lowest paying state. The percentage change in wages for 1955 over 1950 is given in column 5 and the change is ranked in the next column. Column 8 shows the percentage change in 1960 over 1955 and this is ranked in column 9. The last two columns show the percentage change and the ranking for the whole period.

Up to 1955

The leading states Bombay and West Bengal lose their ranking in percentage terms. Bihar and Madhya Pradesh show no change in their ranks. But Andhra and Orissa have gained in ranks with the former showing a spectacular rate of growth even while remaining one of the low paying states. The other states also show changes in ranks, especially Punjab which shows a rapid increase in percentage terms.

1955-1960

Bombay and West Bengal continue to lose their ranks, while Bihar and Madhya Pradesh gain it to take second and third place respectively. Assam shows a decline in wages. Orissa shows a loss in rank while Andhra goes to the top position among all the states.

1950-1960

For the whole period, Bombay and West Bengal have conceded to seven other states. Assam is the only state showing an actual decline while Andhra the highest in-

crease in wages.

We are now in a position to explain why there has been the differentials in absolute terms, and in the rates of growth. Let us consider the absolute differences noticed earlier in the individual rankings year by year. There Bombay and Bihar rank as the two high paying states in contrast to Andhra and Orissa as the low paying ones. This is due to the regional differences between them. Bombay and Bihar are industrial states. In the former we have the bulk of the industries in India concentrated and this accounts for higher wages in absolute terms. Bihar is the center of the iron and steel industry in India. Compared to this, Andhra is mainly a tobacco growing center with industrial development taking place only recently. Orissa's main industries are rice milling, paper mills, and glass factories. Thus, the industrial complexes in the different regions clearly account for the differential in wages.

Now we may consider the percentage rates of growth. The rapid growth in wages in the low wage states of Andhra and Orissa which rank high at the end of the period is due to the diversification of industrial development which is an important feature of the period. New industries have been started in almost all the states under a planned program of industrial development, resulting in many states showing differential rates of growth. This has had its impact on the growth in wages in the newly developing states. It is borne out by the fact that the leading states of Bombay and West Bengal have lagged be-

hind in their rates of growth in wages compared to several other less developed states. The states that have been ranked low in money wages in 1950 appear to have shown a rapid rise in their wages in percentage terms, due to a diversification of industrial development. This could explain to some extent the narrowing or the maintenance of percentage differentials observed in table 27.

As part of our study of the inter-state wage structure, we will next examine the trend in differentials in Bombay State for the period 1950-1960. This is a major industrial state employing roughly a third of the total workers in manufacturing industries in India.[1]

Wage Differentials in Bombay

The following table shows the trend in wage differentials between the highest and the lowest wage industry in Bombay for the years 1950-1960.

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[1] The percentage of employment in Bombay to the total employment in manufacturing was found to range from 26 to 35 per cent for the years 1950-1960.

Table

Wage differential between the highest and the lowest wage industries for Punjab State, 1950-1960.

1	2	3	4	5
Year	Av. Ann. Wages in Rs. Highest Wage Industry	Av. Ann. Wages in Rs. Lowest Wage Industry	Av. Ann. Wage Difference Rs. Col. 2-3	% Diff. between Lowest & Highest Wage Industry $\frac{\text{Col. } 3}{\text{Col. } 2} \times 100$
1950	1592 (Bicycles)	424 (Ceramics)	1168	26.44
1951	1832 (Bicycles)	661 (Veg. Oil)	1171	36.08
1952	2127 (Bicycles)	529 (Veg. Oil)	1598	24.87
1953	2132 (Bicycles)	524 (Veg. Oil)	1608	24.57
1954	2020 (Bicycles)	583 (Veg. Oil)	1437	28.86
1955	1939 (Bicycles)	676 (Ceramics)	1263	34.86
1956	1904 (Iron & Steel)	594 (Veg. Oil)	1310	31.21
1957	2099 (Soap)	627 (Veg. Oil)	1472	29.87
1958	2304 (Bicycles)	626 (Veg. Oil)	1678	27.17
1959	2315 (Bicycles)	491 (Ceramics)	1824	21.20
1960	2388 (Soap)	599 (Fruit & Veg. Can.)	1789	25.08

Source: India(Republic) Directorate of Industrial Statistics, Report on the Census of Manufactures, and Annual Survey of Industries.

The difference between the highest and the lowest wage state in absolute terms has widened as shown in column 4. Excluding the figures for the last two years considering the change in coverage, we get a widening of

this differential for the years 1950 to 1958. This conclusion may be drawn in spite of the fluctuations noticed in the figures. Percentage differentials show a marked widening as 1954, 1955 and 1956. For the period 1950 to 1958 they do not seem to have spread significantly. In conclusion we may say that wage differentials have widened, since no appreciabel narrowing has taken place even with respect to percentage differentials. As a final step in our investigation, we will consider the difference in wages for the same type of labor in different states.

Difference in Wages for the Same category of Labour in Different States

The following table shows the differences in wages in the various centers in different states for the same category of labor in the manufacturing industries of cotton, woollen and jute textiles, sugar and chemicals. The lowest and the highest paid category is taken in all cases.

Table 30

Wage Differences for Similar Classes of Workers In Different States, 1958-1959 (Average Earnings Per Day)

Cotton Textile		Woollen Textile	
West Bengal (Howrah)		Bombay (Bombay)	
Mazdoor	Rs. 2. 32.	Mazdoor	Rs. 3. 82.
Jobber	Rs. 4. 05.	Mistry	Rs. 6. 92.
Madras (Coimbatore)		Punjab (Amritsar)	
Mazdoor	Rs. 3. 41.	Mazdoor	Rs. 1. 59.
Jobber	Rs. 5. 08.	Mistry	Rs. 5. 23.

Cotton Textile

Mysore (Bangalore)

Mazdoor	Rs. 2. 15.
Jobber	Rs. 3. 29.

Gujarat (Ahmedabad)

Mazdoor	Rs. 3. 96.
Jobber	Rs. 7. 82.

Bombay (Bombay)

Mazdoor	Rs. 4. 45.
Jobber	Rs. 7. 95.

Bombay (Sholapur)

Mazdoor	Rs. 2. 89.
Jobber	Rs. 5. 43.

Delhi (Delhi)

Mazdoor	Rs. 3. 41.
Jobber	Rs. 7. 81.

Jute Textile

West Bengal[1]

Mazdoor	Rs. 2. 85
Carpenter	Rs. 4. 55.

Residual[2]

Mazdoor	Rs. 2. 72.
Carpenter	Rs. 3. 18.

Sugar

Bihar[1]

Mazdoor	Rs. 1. 84.
Pan Attendent	Rs. 5. 45.

Residual[2]

Mazdoor	Rs. 2. 28.
Pan Attendent	Rs. 6. 57.

Chemicals

West Bengal (Calcutta)

Chemist	Rs. 4. 94.
Unskilled	Rs. 2. 57.

Bombay (Bombay)

Chemist	Rs.10. 01.
Unskilled	Rs. 3. 55.

Residual[2]

Chemist	Rs. 7. 51.
Unskilled	Rs. 2. 62.

[1]No center given

[2]Refers to other states, no stratum breakdowns.

Source: India, Ministry of Labour and Employment, Occupational Wage Survey 1958-1959, Simla, 1963, pp. 151-63; 164-66, 192, 194-97, 198-201.

The difference in wage for the Mazdoor, the lowest paid worker in cotton textile, ranges from Rs. 2. 15 in Bangalore to Rs. 4. 45 in Bombay. In woollen textile the range is from Rs. 1. 59 in Amritsar to Rs. 3. 82 in

Bombay. In Jute it is from Rs. 2. 72 to Rs. 2. 85 and in Sugar from Rs. 1. 84 to 2. 28. In the chemical industry the wage for the unskilled worker ranges from Rs. 2. 57 in Calcutta to Rs. 3. 55 in Bombay. The range for the highest paid worker, namely the jobber in cotton textile, is from Rs. 3. 29 in Bangalore to Rs. 7. 95 in Bombay. In woollen textile the mistry gets Rs. 5. 23 in Amritsar whereas he gets Rs. 6. 92 in Bombay. Similarly there is a difference in the wage of the carpenter in jute for West Bengal and the residual states, and that for the pan attendent in Sugar for Bihar and the residual states. There is a wide range in the wage of the chemist in chemicals, from Rs. 4. 94 in Calcutta to Rs. 10. 01 in Bombay.

II Government Wage Policy and Inter-State Differentials

1. Influence of Wage Fixing on an All India Basis on Inter-State Differentials

We may now analyse the influence of all India wage fixing on inter-state differentials. In doing this we necessarily have to refer to wage fixing in specific industries on a national basis. If we could argue that these industries show some degree of standardization in wages, consequent to the action of the government in fixing wages on a national basis, then the tendency for the slight narrowing of percentage differentials noticed for the states could be partly explained.

Broadly, government wage fixing has been governed by two factors, namely the needs of the worker and the

capacity of the employer to pay.[1] Both of these have been variously interpreted by the different industrial tribunals and wage boards. There is some indication of how capacity to pay is to be considered when it is said:

> "It is difficult to define industry's "capacity to pay". As pointed out by the Fair Wages Committee, it would be wrong to determine this on the basis of the capacity of a particular unit or the capacity of all industries in the country. The relevant criterion should be the capacity of a particular industry in a specified region and, as far as possible, the same wages should be prescribed for all units of that industry in the region."[2]

Even though reference is made to all units of a particular industry in a given region, it is clear that the passage emphasizes the importance of taking into account regional differences. In actual practice tribunals have even gone one step further. They do fix wages so as to maintain a relationship between the wages of other industries in the same region, and the one for which the fixing is done. Thus, the Industrial

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[1] The Committee on Fair Wages outlined three stages in the process of wage evolution based upon the needs of the workers and the capacity of the employer. The three stages are the 'minimum wage', 'fair wage' and the 'living wage'. Tribunals and wage boards have mostly followed the recommendations of the committee. See, Government of India, Ministry of Labour and Employment, Some Papers on Wage Policy, 1957, pp. 1-2; p. 7.

[2] Ibid. p. 2-3.

Tribunal in West Bengal fixed minimum wages in cotton textile in 1958, keeping in view the pattern of wages in the jute industry. The jute industry being the premier industry of West Bengal has also influenced the wage structure in the engineering industry.[1] If this practice is more prevalent in other cases there would be a tendency for wage differentials to narrow within a particular region, at least for the classes of workers considered by wage fixing authorities. The compression of differentials within a region need not necessarily influence such a tendency between the regions.

2. Fixation of Minimum Wages by Tribunals

Wages have also been fixed on an all India basis. To quote one author:

> "In many industries or occupations the tribunals have operated on a regional or city-wide basis, but for others, like Banking, Defence, Oil, Railways and other industrial groups in the orbit of the Pay Commission or National Tribunals, wage rates appear to have been fixed on a national basis, although some regional variations have been specified."[2]

One factor that would influence wages to be standardized between regions is the fixation of minimum wages. Unlike the fixation of basic wage or the other wage

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[1] See, Report of the Central Wage Board for the Jute Industry, 1963, Manager of Publications, Delhi, 1964, p. 68. The board took into consideration the wage structure in cotton and engineering in recommending wages for jute.

[2] Subbiah Kannappan, A Study of Wage Differentials in India, unpublished monograph, University of Washington, July 13, 1960, pp. 6-7.

components, like dearness allowance or bonus, the fixing of minimum wages have not been completely based on the capacity of the industry to pay. In determining the actual quantum of minimum wages, the tribunal in the Buckingham Carnatic Mills case was guided by such matters as food, clothing, housing, fuel and light and miscellaneous items and the findings of family budget enquiries in the locality regarding the percentage allocation of expenditure on these items.[1] The paying capacity has been held irrelevant in fixing minimum wages in another case.[2] These attempts on an all India basis would bring about some uniformity in the wages of the lowest category of workers and is likely to have a tendency to compress differentials between the regions. The wage board for the sugar industry constituted by the government of India in 1957 fixed a minimum wage for the unskilled worker of Rs. 60 - 1 - 65 for the four regions - North, Central, Maharashtra and South.[3] The board,however, recommended different minimum wage

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[1] The Study Group on Wage, "Principles of Wage Fixation", Indian Labour Gazette, Vol. XV, No. 8 Feb. 1958, pp. 734-35.

[2] Ibid. p. 734. The case referred to is between Rajwani Transport Ltd. and their workmen.

[3] The information is obtained from the following article as the original report was not available. V. Agnihotri, "Evolution of Wage Policy in India", Indian Labour Journal, Vol. II, No. 2, Dec. 1961, p. 1162.

rates for different regions ranging from Rs. 66 in the central region to Rs. 87 in Maharashtra. In effect the fixing of the minimum meant that wages in any one region could not fall below Rs. 60. How effective is this in influencing differentials? If a minimum is set below which wages could not fall, and if it is laid down that this minimum is not the one that is necessarily applicable to all regions, then its effect in standardizing wages and reducing differentials is not likely to be very much.

3. Identifying Categories of Skill

There is another major problem encountered in the fixation of minimum wages by tribunals. This is to do with the identification of different types of skills in an industry. As a first step this requires the standardization of the more common of the occupational nomenclatures, enemuration of as many as the prevailing designations that are available, classifying operatives on the basis of skill and according to basic job factors. In practice the tribunals have not fixed wages on the basis of detailed job classification. It is said that the tribunals, as a matter of administrative convenience dealt :

> "only with broad industrial or industrial-cum-regional categories, and in so far as they were concerned with the problem of skill differentials, addressed themselves generally to such broad

categories as skilled, semi-skilled and unskilled labour."[1]

In the light of this observation and given the fact that tribunals are likely to be governed more by legal considerations, than by any economic appraisal of the significance of different kinds of skills, their minimum wage recommendations may not specifically be directed towards reducing skill differentials. For instance, we found different wages in different areas even for the same type of skill. It appears that the influence of all India wage fixing in reducing disparities even among the lower categories of workers has been rather weak.

4. Changes in the Wage Components

An attempt was made to compare the change in the basic wage and the dearness allowance of factory workers in different states with a view to examine the influence of all India wage fixing on inter-state differentials. In the Indian wage system the two major components of a worker's earnings are the basic wage and the dearness allowance. The later was introduced during the second World War to compensate for the increase in the cost of living.[2] The relation between basic wages and dearness

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1 Subbiah Kannappan, "Union, Adjudication and Wages", The Economic Weekly, Annual Number, Feb. 1962, p. 229.

[2] For details concerning the manner in which the dearness allowance is linked to the consumer price index see, Labour Bureau, "Note on the Linking of Dearness Allowance To the Consumer Price Index Number", Indian Journal of Labour Economics, Vol. VIII, No. 1, April, 1965, pp. 80-85.

allowance has been a subject of great interest to labor, management, and the tribunals. We earlier saw that in the case of industries, a greater percentage of workers had their dearness allowance linked to the consumer price index. If the consumer price index had risen in all states and if the dearness allowance is a compensatory rise, and ordered so by tribunals, it follows that there should be a greater increase in this component in states which show a greater rise in the consumer price index. We should expect some positive correlation between the movement of the consumer price index and that of the dearness allowance component. We will examine the change in the relative size of the basic wages and the dearness allowance for two years for the states for which information is available. The following table shows the percentage of basic wages and cash allowance including dearness allowance to total average annual earnings for 1957 and 1959. The consumer price index numbers are also shown for these two years. Though the average annual earnings are not strictly comparable to those computed in this study, as they are based on the Payment of Wages Act, the table does give an idea of the change in the two components, in relation to the change in the consumer price index.

Table 31

Percentages of Basic Wages and Cash Allowance Including Dearness Allowance to Total Per Capita Average Annual Earnings in Industries by States for 1957 and 1959

1957

1 State	2 Basic Wages	3 % Col.2/Col.6 x100	4 Allowance incl. D.A.	5 % Col.4/Col.6 x100	6 Av. An. Earnings	7 C.P.I.
1. Andhra	548.0	53.20	377.1	36.60	1,030.8	124
2. Assam	849.5	46.33	536.4	29.24	1,833.6	108.67
3. Bihar	775.3	59.66	286.8	22.01	1,299.2	105.25
4. Bombay	706.8	48.62	699.0	46.07	1,452.6	109.20
5. Orissa	652.5	68.20	235.4	24.58	956.8	109
6. Rajasthan	590.2	65.04	226.8	29.32	907.1	97
7. Uttar Pradesh	633.3	58.77	419.0	38.90	1,077.5	94
8. Delhi	889.1	59.54	515.0	34.49	1,493.4	114

1959

8 State	9 Basic Wages	10 % Col.9/Col.13 x100	11 Allowance incl. D.A.	12 % Col.11/Col.13 x 100	13 Av. An. Earnings	14 C.P.I.
1. Andhra	741.90	83.72	136.27	15.36	885.11	129
2. Assam	835.72	51.96	445.91	27.69	1,607.27	108
3. Bihar	922.39	67.89	342.89	25.18	1,358.61	107.50
4. Bombay	707.66	47.16	738.61	49.23	1,499.77	134
5. Orissa	826.74	76.76	214.66	19.88	1,076.36	121
6. Rajasthan	667.68	73.13	203.06	22.55	912.27	105.50
7. Uttar Pradesh	678.44	59.78	437.17	38.53	1,134.03	98
8. Delhi	828.94	61.56	465.35	34.57	1,345.43	120

Source: Government of India, Labour Bureau, The Indian Labour Year Book, 1958, p. 65, and The Indian Labour Year Book, 1960, p. 42, and Indian Labour Statistics, 1961, pp. 99-101.

Note: The figures in columns 7 and 13 are simple averages of the centers in each state for which consumer price index numbers are published by the Labour Bureau. The following is the breakdown. Andhra - Hyderabad; Assam - Gauhati, Silchar and Tinsukia; Bihar - Jamshedpur, Dehri-on-Sone, Monghyr, Jharia; Bombay - Bombay, Sholapur, Jalgoan, Nagpur, Akola; Orissa - Berhanpur, Cuttack; Rajasthan - Ajmer, Beawar; Uttar Pradesh - Kanpur; Delhi - Delhi.

The question to be considered is whether the influence of all-India wage fixing has given rise to a tendency for a narrowing of inter-state differentials. If we suppose that there has been an increase in the percentage of allowance including dearness allowance in the low wage states, related to the increase in their consumer price index, compared to the high wage states, then there would be a tendency for a narrowing of percentage differentials. Earlier it was seen that Andhra and Orissa had shown a greater percentage increase in money wages compared to Bombay, which ranked the highest wage state in 1950. In the above table, in Andhra, the percentage of allowance has declined from 24.58 to 19.88 for these two years. Interestingly enough, the percentage of basic wages have increased substantially in both cases. On the other hand, in Bombay, the percentage of allowance has increased from 46.07 in 1957 to 49.23 in 1959. The percentage of basic wage has declined in Bombay from 48.62 to 47.16. This means that the role of allowances including dearness allowance in compressing inter-state differentials has not been effective, especially when we consider the influence of all-India wage fixing by which the percentage of dearness allowance is regulated. Such regulations by tribunals may have taken place, but it does not seem to have increased the component of allowances including dearness allowance of the low wage states so as to bring about a narrowing of differentials between them and the high wage states.

The rest of the chapter will be devoted to a detailed examination of the indexes of real wages. Each state will be separately examined. In the end, an examination of the relationship between the working class consumer price index computed in this study and the index of money wages will be taken up with a view to drawing conclusions on changes in real wages.

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Changes in Real Wages in the States

Andhra Up to 1955 there can be seen fluctuations in both money wages and the consumer price index. Thereafter, both money wages and the price index increase, with the former showing a greater rate of increase. There has been an increase in real wages for the entire period.

Assam The main conclusion here is that real wages have declined if we take the whole period into consideration. This is the only state showing such a decline.

Bihar After some initial fluctuations in both money wages and the price index, the price index declines from 1953 while money wages do not change appreciably. From 1957 to 1960, there is a high rate of increase in money wages with the price index showing no appreciable change. Real wage has increased by 97 per cent or almost doubled for the whole period.

Delhi Up to 1955 money wages increase rather slowly while the price index seems to hover around 106 rather steadily. There is an increase in money wages from 1955, once again accompanied by an increase in the price index which becomes constant at the end of the period. The real wage goes up by 29 per cent for the whole period.

Bombay Money wages and the consumer price index increase up to 1953. Thereafter, both the money wage index and the price index decline for the next two years.

From 1956 onwards to the end of the period both the indexes once again steadily rise. In fact, in Bombay, the trends in both indexes show a striking similarity in the sense that as one of them rises the other also rises and when one of them declines, the other also declines. There has been an increase by 14 points in real wages for the entire period.

Madhya Pradesh There are considerable fluctuations throughout the period in both money wages and the price index. From 1956, however, there is an increase in money wages with a very slight drop of two points in 1959 while the price index shows very little change for this period from 1957. Real wages show an increase of 49 points for the entire period.

Madras Money wages show greater fluctuation than the price index, more so in the period after 1955. The price index shows a steady increase from 1955 while money wages fluctuate at the end of the period. The increase in real wages has been 18 per cent for the entire period.

Orissa There is a steady increase in money wages from 1954 after some initial fluctuations. The price index, after an initial rise, declines steadily up to 1955, and thereafter increases steadily. Real wages have gone up by 54 points for the entire period.

Punjab Money wages increase till 1954, level off till 1957, and thereafter steadily increase. On the other hand, the price index has shown only one percent increase

for the whole period. For most of the years it is below the base year index. Thus, while money wages have risen, the price index has shown no appreciable change. Real wages have increased by 55 per cent for the whole period.

Rajasthan Money wages show fluctuation up to 1957 and thereafter a steady increase. The price index on the other hand, shows an increase of only 3 points for the whole period. After an initial rise it begins to decline, and from 1954 to 1957 it is below the base year index. At the end of the period, it slightly regains the position and goes up a little. Real wages have gone up by 47 per cent for the whole period.

Uttar Pradesh Both the money wage and the price index show fluctuations. A steady decline is seen from 1952 to 1955 in money wages roughly associated with a similar decline in the price index. The price index is constant for 1958 and 1959 and goes up only by one point in 1960. Money wages, however, go up considerably between 1959 and 1960. Real wages show an increase of 39 points for the whole period.

West Bengal Money wages increase up to 1958 after being constant for 1952 and 1953. The price index on the other hand, after an initial rise, remains below the base year index up to 1955, and then begins to rise. As for the real wage, it goes up by 36 per cent for the whole period.

All India The index of money wages steadily increases up to 1954, shows a slight decline in 1955 at 120, and thereafter steadily rises for the rest of the period. The Consumer Price Index after some fluctuations initially, and a decline below the base year for 1955, begins to steadily rise for the rest of the period. Real wages have gone up by 34 per cent for the entire period.

The above account has shown in detail the changes in money wages and the consumer price index numbers which has enabled us to understand the changes in real wages. But, what general conclusion can we draw from the experience of the various states? For this we may consider the entire period in taking the changes for each state. The following table shows this with reference to the consumer price index, money wage and real wage.

Table 32

Change in the Consumer Price Index, Money Wages and Real Wages for the States, 1950-1960
Base 1950=100

1 State	2 C.P.I. % Change (1950-60)	3 Rank	4 Money Wage % Change (1950-60)	5 Rank	6 Real Wages % Change (1950-60)	7 Rank
Madras	42	[1]	67	[4]	18	[10]
Bombay	33	[2]	52	[8]	14	[11]
Andhra	26	[3]	106	[1]	63	[2]
Delhi	20	[4]	55	[7]	29	[9]
Orissa	14	[5]	76	[3]	54	[4]
West Bengal	12	[6]	52	[8]	36	[8]
Uttar Pradesh	9	[7]	51	[9]	39	[7]
Madhja Pradesh	8	[8]	61	[5]	49	[5]
Assam	5	[9]	-1	[10]	-6	[12]
Rajasthan	3	[10]	51	[9]	47	[6]
Bihar	3	[10]	97	[2]	91	[1]
Punjab	1	[11]	57	[6]	55	[3]
ALL INDIA	20		59		34	

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Source: India (Republic) Directorate of Industrial Statistics, Report on the Census of Manufactures and Annual Survey of Industries.

Government of India, Labour Brueau, Indian Labour Journal, Vol. II, June 1961, No. 6, p. 577.

Government of India, Central Statistical Organisation, Statistical Abstract of the Indian Union, 1957-58, p. 365 and 1961, p. 241.

Except in the case of Assam real wage has increased in all other states. Apart from this conclusion, we find it difficult to make any other meaningful generalization. There does not appear to be any definite relationship between the changes in consumer price index and money wages. Notice that Madras shows the highest increase in the price index and Punjab the least increase while in the case of the increase in money wages they rank very close. On the other hand, in Assam there is an increase in the price index (even though it is not very much it is higher than the Punjab) but actually a decline in money wages. In Bombay the price index has risen relatively greater than West Bengal but both states show equal increase in money wages. These differences should mean that there are considerable differences in the real wage position of the workers in the different states. While it is clear that real wages have gone up they do not seem to have gone up uniformily in all the states. But this finding is subject to our earlier observation

that the consumer price index numbers with which we have been working are based on family budget studies taken during World War II. At present, a new series is being prepared which when utilized in further studies could be subjected to more rigourous methods of statistical investigation to yield more meaningful conclusions.

Summary

This chapter investigated the changes in the inter-state wage structure and examined the nature of its differential. Our aim was to supplement the findings reached in the previous chapter which dealt with the inter-industry wage structure.

A year by year ranking of average annual money earnings revealed that there has been very little changes in the ranks. This was shown by the high values of the rank correlation coeficients for each year. Very little change in ranks is observed between the high paying states of Bombay and Bihar and the low paying states of Andra and Orissa when absolute earnings are considered. Further investigation reveals that absolute wage differences between the highest and the lowest paying states have widened for the entire period. It is difficult to draw any conclusion owing to the fluctuations in the figures. We reached the conclusion that there has been a widening of the inter-state differences in wages.

A comparison of the rates of growth in money wages in each state revealed that the low paying states of Andhra and Orissa showed rapid rates of growth. On the other hand the leading industrial states of Bombay and West Bengal revealed similar rates of growth and also conceded their position to many other states.

It is strongly suggested that the reason for the absolute differences in wages between the high paying and the low paying states is the differences in industrial composition of the states. While this is so, the fact that the low paying states show rapid rates of growth in wages is due to the diversified nature of the industrial expansion characteristic of the entire period.

As part of our study we examined the trend in wage differentials in Bombay state for the period 1950-1960. We found that wage differentials have widened in this state and no appreciable narrowing had taken place with respect to percentage differentials. Next it was shown that even for the same category of labor in the same industry, there existed a wide range of regional differences in the different states.

The influence of wage fixing on an all India basis on inter-state differentials can be considered in the case of specific industries. There appears to be a tendency to fix wages by taking into consideration the capacity of a particular industry in a specified region, and paying the same wage to all the units of the industry in that region. This might result in a compression of differentials within the region, but it need not necessarily influence such a tencency between regions. Moreover it was said that the tribunals had not clearly identified the various skilled categories in fixing wages, and thereby appeared to have failed to reduce wage disparities even among the lower categories of workers.

Next it was shown that the influence of all-India wage fixing by regulating the component of allowance including dearness allowance to total earnings, in reducing inter-state differentials had not been effective.

A detailed study of the change in real wages revealed that except in the case of Assam, real wages have increased in all the other eleven states. However, they do not appear to have increased uniformly in all the states, indicating considerable inter-state differential in real wages. But this finding is subject to the limitations surrounding the use of the existing information on consumer price index numbers and emphasises further studies in this direction.

CHAPTER 5

Issues Raised in the Formulation of a Wage Policy in India

This concluding chapter deals with the issues raised in the formulation of a wage policy in India. We will first recapitulate the main findings of this study. In the light of this a review of the existing state of wage policy will follow and the chapter will conclude with a discussion of the issues raised in connection with its formulation for the development of the country.

The period 1950 - 1960 was one of general economic expansion during which incomes rose and industry expanded. An increase in investment in the industrial sector, and the income originating from this, led to a rise in wages of the mine and factory workers relative to other classes of workers. In the case of factory workers, government wage policy played an important role in raising wages, by introducing the principle of profit sharing and the establishment of wage boards in the major industries.

Inter-industry wage differentials widened in both absolute and percentage terms. In the high wage industries, favorable product market conditions, profitability, and the requirement of a higher proportion of skilled workers were cited as factors which influenced the widening of wage differentials between these and the low wage industries. Inter-state wage differentials also widened in absolute terms, but seemed to be maintained in percentage terms. The regional difference in the composition of industries was cited as a factor for this widening. The

maintenance of percentage differentials could to some extent be explained by the diversification of industrial development which was an important feature of the period. Government wage policy had not had an appreciable influence in reducing inter-state wage differentials. A separate study of Bombay showed that wage differentials had widened in this leading industrial state. Considerable differences in wages, for the same category of labor in different regions were noticed by a reference to a cross section data on occupational wages.

Considerable stability in ranking by wages was noticed in the case of both the industries and the states. High wage industries and states remained high and low wage industries and states remained low throughout the period, with an imperceptibly slow change in the ranking of these in the wage heirarchy. This stability in ranking had a parallel in studies made in the west, indicating that wages changes may be influenced by similar factors in both cases, even though there may be differences as to the stages of economic growth and the relative economic position of agriculture and industry in the national economy.

The use of a different statistical series for presenting the data for the last two years resulted in a discontinuity in the figures, which was taken into account in our interpretations.

The unsatisfactory nature of the existing series of consumer price index numbers, and the regional differences in consumption habits, rendered a study of real wages at an all-India level difficult for drawing meaningful conclusions.

Subject to these limitations, it was found at the state level that real wages had increased in all the states for the entire period, except for Assam which showed a decline.

An attempt was made to study the relationship between changes in wages, by adopting two different approaches. One was to observe the effect of changes in the composition of employment on the overall wage level, and the other to examine the variation in wages and employment within each industry. In the former case, it was found that the overall level of wages had not been significantly influenced by a movement of workers from low wage industries or states to high wage ones. In the latter, changes in wages seemed to have influenced changes in employment in the high wage as against the low wage industries.

This study has distinguished between the level of wages and its differential, in analyzing wage trends in a developing economy. The various dimensions of the wage structure were measured to make clear this distinction. We saw that while the level of wages for workers in manufacturing might increase, there would be considerable wage differences between industries and states, with a tendency for the maintenance of these differentials. This distinction is useful in focusing on the achievements of existing wage policy, and in discussing the issues raised by it, in the context of economic development.

Government Wage Policy and the Level of Wages

The government's earlier pronouncements on wage policy

showed a deep concern for upgrading the economic position of the factory worker, by assuring him a raise in his money wages. The Industrial Truce Resolution[1] recommended the payment of fair wages to labor. The government accepted this recommendation in their statement on Industrial Policy issued on 6th April 1948. Later, a Committee on Fair Wages was set up, which outlined three stages in the process of wage evolution, based upon the needs of the worker and the employer's capacity to pay.[2] The committee viewed the "minimum wage" as an irreducible amount considered necessary for the sustenance of the worker and his family and for the preservation of his efficiency at work. The "Living Wage" was the ideal which would enable the earner to provide for himself and his family not merely the essentials of life, but also a measure of comfort. Between these two limits lay the "Fair Wage", the floor for which was set by the minimum wage, and the ceiling by the capacity of the industry to pay. The various committees and tribunals that subsequently intervened in wage disputes were governed largely

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[1] During the latter part of 1946 and through 1947 a series of strikes took place creating a severe crisis in labor management relations in industry. On the initiative of the government, a tripartite Industrial Conference was held between 15th and 18th December 1947 between labor, management and the government, which resulted in the truce resolution.

[2] The Report of the Fair Wages Committee was published in 1949.

by the concepts laid down by the Committee's report.

The question of setting up a statutory machinery for fixing minimum wages was discussed at the fifth and the sixth Labour Conferences held in 1943 and 1944, even before the attainment of independence. After some deliberations, the Minimum Wages Act was passed in 1948. Under this act, minimum wages were to be fixed by the states in the "scheduled" industries in which the condition of the worker was considered deplorably bad that they were regarded as "sweated trades". The actual implementation of the act has been beset with a number of problems. To begin with, there was no general agreement as to what constituted the minimum wage. After a long delay, in 1957 the Indian Labour Conference, at its 15th session recommended certain norms for revising the "minimum" concept upwards. The resolution adopted by the Conference required that the minimum wage should be "need based", and a formula to arrive at this was suggested.[1]

While the norms were being discussed, no effort had been taken to comply with another provision of the Act which required that minimum rates of wages should be fixed for all "scheduled" employments, wherein the employment in the state exceeded a thousand. In 1948, when the Act was passed, no

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[1]The standard working class family was taken as three consumption units for one earner. Minimum food requirement and clothing requirement were also calculated. Fuel, lighting and other miscellaneous items of expenditure was to constitute 20 per cent of the total minimum wage.

state governments had detailed information regarding the strength of working populations, the prevailing wage rates, conditions of work, etc., in the "scheduled" employment.[1] That the situation in 1960 was no better is revealed by the following reference from a report on the working of the Act furnished by the Labour Bureau.

> "information available in the Bureau indicates that none of the State Governments so far conducted any comprehensive employment census, because of the expenditure involved and other administrative difficulties. As regards collection of employment statistics under the Act, most of the State Governments reported that despite strenuous efforts on the part of the Inspecting staff, a majority of employers did not furnish returns in Form III prescribed for the purpose. . . . No fixed time limit for submission of returns existed in the State Rules made under the Act and this was responsible to a great extent for non-compliance by employers."[2]

The weakness in the administration of the Act cited suggests that most employers may be ignoring the Act, thereby continuing to keep wages in the so called "sweated trades" at a low level.

The developments in government wage policy relating to the level of wages in the organized manufacturing industries may now be considered. The genesis of this development goes

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[1] Government of India, Labour Bureau, Report on the Working of the Minimum Wages Act, 1948 During the year 1960, Simla, 1963, p. 5. It is to be noted that this report is for the year 1960 in which the problem of data on wages and employment is referred to while the act came into force twelve years earlier.

[2] Ibid., p. 5-6.

back to the Industrial Truce Resolution that we referred to, and the passing of the Industrial Disputes Act in 1947. Under this Act, Industrial Tribunals were set up, which had the power to render judgements on wage disputes. A number of awards have been given by these tribunals, and these mostly relate to the fixation of minimum wages.[1] Besides this, there were various committees, the Central Pay Commission (1946), the U. P. Labour Enquiry Committee (1949) and the Fair Wages Committee (1949) which we already mentioned. A feature of this development was that each body developed its own principles for the day to day fixation of wages which slowly became the thinking pattern of unionists, businessmen and government officials, on immediate questions of wage fixation. The concern of the government was mostly to minimize occurences of lockouts and strikes when these ensued as a consequence of a wage dispute. For about a decade, the content of wage policy could be described as a body of principles dealing with the immediate problems of securing a fair deal for the worker, and promoting harmony in industrial relations which was being greatly distrubed by the wage issue.

In recent years, the setting up of ad hoc wage boards for particular industries has been an important development in the field of wage regulation, as part of the labor policy pursued by the government. This system was prompted by

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[1]For a detailed analysis of the various awards see Labour Bureau, "Principles of Wage Fixation", Indian Labour Gazette, Vol. XV, No. 8, Feb. 1958, pp. 733-52. This analysis carries forward an earlier analysis made for the period 1939-50 by the Bureau's publication Industrial Awards in India - An Analysis published in 1952.

a desire for a more balanced decision in a wage dispute.

A tripartite wage board, it is said, is

> "likely to make more balanced decisions on matters of wage fixation and regulation than an industrial tribunal, as its recommendations are in the nacure of agreed decisions of the representatives of employers and workers reached with the help of an economist and a jurist who sift the data collected and analysed by the secretariat with meticulous care."[1]

In setting up wage boards, the emphasis is on settling wage disputes by mutual negotiations, mediation and voluntary arbitration. Failing this, recourse to adjudciation is recommended as a last resort. Clearly, the institutional framework for granting wage increases is being shaped by three instead of the two parties, labor and management. The third party is the government, which over the years has been playing an increasing role in granting wage increases, and which both labor and management have recognized as part of the industrial relations system. The introduction of the principle of profit sharing is yet another development of wage policy which has led to the regulation of the payment of bonus, now a growing component of the worker's total earnings. These developments, shaping the content and course of wage ploicy, logically focus on one main objective, that of raising the level of wages of the factory worker, where such a raise was felt necessary, in

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[1] R.K. Malviya, "Reflections on Wage Boards", Indian Labour Journal, Vol. V, No. 9, September 1964, p. 728. The writer, the Deputy Minister for Labour and Employment, reflects the official view.

the interest of social justice.

2. Wage Level and Wage Differential

During the early days after the attainment of independence, the immediate concern of the government was to prevent industrial unrest in the form of strikes or sometimes lock-outs, resulting from wage disputes which led to a halt in industrial production. Hence wage policy has been almost exclusively concerned with regulating wage rates in individual industries, by intervening in wage disputes and for the most part laying down some principles relating to the day to day fixation of wages. This has led to frequent revision of scales of pay, which is amply borne out by the various awards handed down by Industrial Tribunals all over the country. The level of wages has been influenced in an upward direction, with either the basic pay or the dearness allowance increasing over the years as was shown earlier in this study.

After 1950, when the government assumed a definite commitment for putting through a planned program of economic development, a policy of wage restraint began to engage its attention. The concern of the First Plan, as it related to wages, was mainly with inflation. There is a general call for wage restraint and the diversion of money from expenditure to saving. Along with this, it was felt desirable to control profits. As the Plan points out,

> "On the side of wages, any upward movement, at this juncture will further jeopardise the economic stability of the country if it is reflected

> in costs of production and consequently raises the price of the product. For workers too, such gains will prove illusory because in all likelihood they will soon be cancelled by a rise in the general price level, and in the long run the volume of employment may be adversely affected. Such an increase in wages should, therefore be avoided. Workers can be expected to agree to such a course only if restrictions are also placed on the distribution of profits."[1]

Thus, the earlier developments in wage policy was concerned with upgrading the economic position of the worker in the interest of social justice, and later, the claims for economic development led to a revision of this attitude in the interest of promoting savings, capital formation and growth. The official view has been stated as follows:

> "A wage policy to facilitate growth has both its economic and social implications. From the purely economic point of view, it has to avoid exerting inflationary pressures or pressures on balance of payments, promote productivity and facilitate savings and capital formation. On the social side, it must move in the direction of securing a reduction of inequalities in income and wealth and a more even distribution of the national product."[2]

The above statement shows a concern for both the level of wages and its differential. The former has to be restrained now in the interest of economic development, while the latter to be gradually reduced in the interest of social justice. The evaluation of this stand, from an economic point of view, is made complicated by a host of conflicting factors - economic, social, and political - which in turn are cited as claiming

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[1] Government of India, Planning Commission, The First Five Years Plan, New Delhi, Chapter XXXIV, paragraph 46.

[2] Government of India, Ministry of Labour and Employment, Some Papers on Wage Policy, 1957, p. 4.

the attention of wage policy. With regard to the level of wages, a careful reading of the provisions relating to wage control in the First Five Year Plan, reveals that they do not specify what wages have to be controlled. A general call for control of wages, without identifying what wages have to be controlled, or specifying the nature and scope of such control, or indicating the kind of machinery to enforce it, can hardly be taken seriously. But the setting up of industrial tribunals, wage boards, and the fixing of minimum wages have shown that the government's role in raising wages is more evident than its role in policing a policy of wage restraint.

The impact of government wage policy on wage differentials is even less clear. We saw earlier in this study that there existed considerable differences in wages, even for the same category of labor in the same industry. The failure on the part of wage fixing authorities to identify clearly the various skills involved when fixing wages, was pointed out as an important consideration influencing the effect of such fixing on differentials. The I. L. O. team of Productivity Experts who came to India in 1952-54 felt that 40 per cent of the pay roll in Indian plants had been established by awards of industrial courts without the aid of work measurement or job evaluation.[1]

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[1] Government of India, Ministry of Labor and Employment, Some Papers on Wage Policy, New Delhi, 1957, p. 3.

While there has been a policy on wage differentials to be worked out according to the degree of skill required, the strain involved, and the mental and physical requirements for doing the work, the enforcement of this policy has been weak to the extent that it has not been based on work measurement of job evaluation.

Wage Policy in Economic Development

Surplus Labor and the Wage Level

The level of wages has figured in discussions among development economists who have examined its position from a theoretical standpoint. There have been some interesting specualtions about the level of wages in the industrial sector, and of how it behaves as the economy begins to develop. The notion of unlimited supplies of labor in an overpopulated underdeveloped country, characterized by a large agricultural sector and a relatively small industrial sector, seems to be at the heart of the speculation in this respect.[1] The main contention of this approach is to stress the constancy of wage rates in the industrial sector, in the face of a perfectly elastic supply of labor to this sector during the early stages of development. The explanation does not however take into account the possibility of contrary trends

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1. John Fei and Gustav Ranis, Development of the Labor Surplus Economy, Op. Cit. p. 260 ff.

in wages in particular industries or regions, or on an even more disaggregated level. The problem of scarcity of skilled labor that many underdeveloped countries experience, and what effect this might have on wages, has not been fully dealt with in the explanation.

The theory mainly stresses the role played by an abundance of labor in keeping wages low in overpopulated countries like India, during the early stages of their development. Clearly, as the economy develops, there would be situations in which there would be an excess of labor supply in relation to demand in one area or for one industry, keeping wages low in that case, or scarcity of labor - particularly skilled labor - in another area or for another industry, leading to an increase in wages. These situations, influencing the forces of supply and demand for labor, will help both to keep wages down and also to push it up. Therefore, from the point of view of wage policy, a distinction must be made between

(a) factors that might contribute to a general depressing of the level of wages, and

(b) factors that might exert an upward pressure on the level of wages in particular industries and regions, and finally,

(c) both the above set of factors influencing wage differentials.[1]

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[1] See Subbiah Kannappan, "Wage Policy in Economic Development", Economic Weekly, Vol. XVI, No. 5,7,9, Annual Number, Feb. 1964, p. 291. This reference has served to develop the distinctions made here.

In India, the level of wages might be depressed in industries which primarily employ less skilled labor. This fact needs further investigation along the lines of the study undertaken here. A distinction can be made between industries which deal with food and kindered products like rice milling, vegetable oils and fruits and vegetable canning, where mostly semi-skilled and unskilled workers are employed, and the industries like iron and steel, sewing machines and electric fans, employing relatively more skilled workers. Besides these, in the case of the smaller industries employing fewer workers, not considered in this study, wages could be depressed in the face of an excess supply of labor.

The factors that might exert an upward pressure on the level of wages were considered earlier in this study. General economic expansion, characterized by increased investment, was cited in the case of factories and mines, as influencing in an upward direction the level ow wages in these sectors. The role of government policy in revising wages upward, was another independent power force cited as contributing to the increase in the level of wages in the case of factory workers. Favorable product market conditions, in the face of an increase in demand for various types of goods, in a period of general economic expansion, was suggested as a factor enabling managements to grant wage increases.

Skilled Labor and Wage Differential

From a theoretical standpoint, it may be argued that wage differentials between skilled and unskilled labor

would be wide, during the early stages of economic development. There would be an increasing demand for particular types of skills, and in the short run, skilled labor would be scarce and command a premium. Once development gets underway, and as training facilities are increased, there would be a gradual diminution of unskilled labor. As different types of skills are developed, and the training gap between the skilled and the unskilled are bridged, wage differentials between the two would tend to narrow. One writer argues that between 1907 and 1947, the percentage differential based on skill declined in the United States. Examining data on wage differentials between journeymen, labourers and helpers in the building trades, he gives the following reasons for this narrowing: rise of an educated working class; shift in emphasis from academic to vocational training; modern trends in vocational training, and educational equality in both sexes.[1] This study and others like it have related the narrowing of wage differentials to economic development.

There is an impression however, that wage differentials are wide in underdeveloped countries. The phenomenon merits

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[1]Earl E. Muntz, "the Decline of Wage Differentials based on Skill in the United States", International Labour Review, Vol. LXXI, No. 6, June 1955, pp. 577-580.

further study, which should attempt to relate wage differentials, particulary those with respect to skilled labor, with the stage of development in an underdeveloped country. For instance, Turner points out that the spread of wages in underdeveloped countries can be attributed to wider skill differentials of labor market circumstances. He has not studied the problem in sufficient depth to come up with an explanation, but points out, "It is hard to see why differentials should go on widening - as it probably has in both Africa and Latin America - in the face of substantial and growing unemployment?"[1]

The foregoing remarks on skilled labor and wage differentials bring us to another important point in connection with the formulation of a wage policy appropriate for development. Wage policy in India has not paid attention to the role of wage differentials in economic development. One way of stressing this role is shown as follows.

> "An examination of wage differentials in underdeveloped countries is one important way of focusing on relative supply scarcities for various categories of labor at an early stage of development...A critical evaluation of existing differentials could have several policy implications of an immediate and direct nature. They may serve as guides to government sponsored wage-fixing machinery.

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[1] H. A. Turner, Wage Trends, Wage Policies, and Collective Bargaining: The Problems for Underdeveloped Countries, University of Cambridge, Occasional Papers, No. 6, Cambridge University Press, 1965, p. 17.

> They could identify bottlenecks, or areas where labor market functions poorly, which public action could attempt to remedy. To the extent that money wage costs are important in allocating investment funds, sectoral or regional wage differentials for comparable labor categories may be an important determinant. If a particular labor mobility pattern is desired, it could help us to determine to what extent the "manipulation" of wage differentials is likely to be effective."[1]

The incorporation of these various policy implications within the scope of the existing wage policy in India would alter it substantially so that it would be geared to the development needs of the country. The success of some of the implications like the "manipulation" of wage differentials and remedying the poor functioning of labor market responses by public action, depend heavily on overcoming the various impediments to labor mobility. This brings us directly to the point concerning the relationship between wages and employment, which was investigated in this study.

C. Variation in Wages and Employment

We showed in this study that the overall level of wages had not increased significantly by the movement of labor from low wage to high wage industries. For such a movement to occur, we should presuppose a certain amount of labor mobility, and grant that the worker is fully aware of the alternative opportunities for higher earnings

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[1]Subbiah Kannappan, A Study of Wage Differentials in India, unpublished manuscript, University of Washington, 1960, p. 1.

that are available to him.[1] If imperfections exist in the smooth functioning of labor market responses, the task of manipulating wages to secure a desirable pattern of mobility is rendered difficult.

In India, it is fairly clear from available evidence that imperfections exist in the functioning of the labor market, in the sense that workers are not aware of the alternative job opportunities, given the fact that in a period of rapid industrial expansion, the relative superiority of industrial work opportunities over other types of work exists. There are also other imperfections that could be cited. The existence of non-competing groups, which emerge on the basis of language, provincial, caste and other barriers, and particularly personal influence, prevents labor mobility. However, these imperfections cannot really be distinguished and do not pertain specifically to different sectors of the economy. As one writer observes:

> "Mexico, India, and most other developing countries have their labor market imperfections interlaced in complex patterns, rather than as mere dual markets - one for small, low paying traditional workshops, the other for modern, high-wage factories. There is a whole rainbow of gradations, each hue distinct and yet merging with others. The constraints of paternalism, for example, vary in

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[1] See for instance, Koji Taira, "Wage Differentials in Developing Countries", International Labour Review, Vol. 93, No. 2, Feb. 1966, pp. 281-301. The author cites the lack of knowledge of alternative job opportunities as an imperfection in the labor market.

> strength with the size of the firm, the kind of community, and the ethnic origin and idiosyncrasies of the owners."[1]

The imperfections in the labor market and the difficulty of distinguishing them are major challenges in the formulation of a wage policy which attempts to take cognizance of the role of wage differentials in economic development.

The foregoing remarks on wage differentials have a bearing on one important contribution to the literature that particularly relates to developing economies. This has to do with efforts to secure a 'comitted supply of labor' during their early phase of industrialization. As yet, this concept of commitment is relatively new and has only been recently subjected to serious economic analysis.[2] Its bearing on the formulation of a wage policy appropriate for developing economies lies in its recognising the economic implication of structuring an industrial labor force. Where costs are involved in doing this, they will be reflected as labor costs, and will be relevant for wage policy. In a rigorous sense the supply of and demand for committed labor is considered when it is said

> "A structured labor force will be viewed as an economic good whose 'production' is determined by the interaction of the forces

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[1] Paul W. Strassmann, Labor Market Imperfections, mimeograph, Department of Economics, Michigan State University, pp. 10-11.

[2] Subbiah Kannappan, "The Economics of Structuring an Industrial Labour Force: Some Reflections on the Commitment Problem", British Journal of Industrial Relations, Nov. 1966, pp. 379-404.

underlying its supply and demand. In other words, a structured labor force will develop only to the extent that costs of this development are matched by the resultant benefits."[1]

The problem of structuring an industrial labor force has been given very little attention in wage policies in underdeveloped countries, and in India its economic significance has hardly been realized by those who are charged with the responsibility of formulating wage policy. For instance, it is reported that in certain parts of Africa, the migrant labor system is a wasteful way of using labor, and involves heavy social costs. It is said that the costs of stabilization at the place of employment, in order to build a more experienced and productive labor force, increases as the demand for migrants outpaces its supply. But the migrants look upon industrial employment only as a temporary outlet for earning some quick return, and this leads to an increase in the costs of stabilization.[2]

In India, wage policy has not attempted to work into the principles of wage fixation, the criteria for public action to share the costs of stabilization of the work forces. Such

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[1] Ibid., p. 380.

[2] "Inter-racial Wage Structure in Certain Parts of Africa", International Labour Review, Vol. LXXVIII, No. 1, Jul. 1958, pp. 54-55.

criteria should be explicitely defined in attempts to regulate wage differentials in the face of the high rates of absenteeism noted in industries.[1] Once we realize the idea that there is a cost involved in securing a committed work force, its bearing on wage policy with respect to differentials is fairly clear. We may examine this as follows. The securing of a committed work force involves other costs besides wage costs. These relate to costs of providing adequate housing, safe and healthy conditions within the work place, provision of transport facilities, recreation and canteen facilities. These contribute to the efficiency of the work force as well as to its stabilization at the place of employment. To the extent these costs are borne by the employer, they may be considered as costs of stabilization and must be taken into account in wage fixing decisions. The policy on wage differentials as outlined in the Second Five Year Plan was mainly based on the type of work performed, and did not provide for a consideration of the above non-wage costs as being incurred. This would tend to diminish considerably the incentive to incur such costs. The consequence of this in terms of structuring an industrial labor force can be easily seen.

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[1] That there is need to tackle this problem can be realized by the fact that absenteeism is very high in industries in India. For some figures in this respect see, Government of India, Labour Bureau, Indian Labour Statistics 1961, p. 151. For a more detailed account of the position of absenteeism in the pre-depression (1930) period compared to the position in 1962 see, Subbiah Kannappan, Labor Force Commitment in Early Stages of Industrialization, unpublished mimeographed manuscript, Dept. of Economics and the School of Labor and Industrial Relations, Michigan State University, Appendix IV, pp. 58-60.

We have dealt with the various issues raised by wage policy in India and distinguished between the level of wages and its differentials. The problem of relating their behavior to the stage of a country's economic development has a number of implications for wage policy, especially in the context of development planning. They would not only reflect the influence of government policy and market characteristics, but in an important way, reveal imperfections in the distribution of skilled labor between industries and regions. From a development standpoint, such distribution assumes importance in building a productive and stable work force in the interest of increasing production. Our study has shown the need to focus further on more specific research questions. The forces contributing to an increase in the level of wages even at an early stage of development, the widening of differentials, and the stability of the wage structure lead to a serious reconsideration of existing notions concerning the behaviour of wages in labor surplus economies. The specific research questions would deal with an examination of training facilities, the changes in the skill composition of the labor force and the supply of and the demand for skilled labor in specific industries and regions, with a view to study their combined impact on wage levels and differentials in the different occupations. An examination of labor market imperfections, and

specific case studies on migrant labor, and patterns of labor mobility would constitute additional enquiries helping to strengthen the empirical basis of such research.

Appendix

This study involved the construction of indexes of money and real wages and employment for factory workers in manufacturing industries. Indexes of fixed capital per worker had also to be constructed in the case of the inter-industry wage structure. For deriving the indexes of real wages, working class consumer price indexes were also computed.

Sources Data from the Census of Manufactures and the Annual Survey of Industries[1] were used to construct the indexes of money wages, employment and fixed capital per worker. Working class consumer price indexes which were used to deflate the index of money wages to derive the indexes of real wages, were computed on the basis of the figures reported in the Indian Labour Journal and the Statistical Abstract of the Indian Union.[2] For reasons of differences in classification and coverage between the Census and the Survey, to be explained below, 26 industries and twelve states were chosen in all in making the study.

The Census of Manufactures reported data for 29 industries. Out of this general engineering; Aluminum, brass and copper; and edible hydrogenated oils had to be omitted. The first two were omitted because the Survey did not report data under these headings, but introduced changes in their classification which could not be related to the Census. Data for edible hydrogenated oils were not available for the base year and hence they could not be included. This led to a total of

1. Government of India, Central Statistical Organization, Report on the Census of Manufactures, New Delhi. Vols. V to XIII.
2. Government of India, Central Statistical Organization, Annual Survey of Industries, 1959 & 1960. The Annual Survey of Industries 1959 was not available in the United States. A microfilm of the Survey was obtained through the International Documentation Centre at New Delhi.
2. Government of India, Labour Bureau, The Indian Labour Journal, Vol II, No. 12, Dec. 1961, pp. 1290-91.
Government of India, Labour Bureau, Indian Labour Journal, Vol II, June 1961, NO. 6, p. 577.
Government of India, Central Statistical Organization, Statistical Abstract of the Indian Union, 1957-58, p. 365 and 1961, p. 241.

26 industries as stated above. The choice of the twelve states was dictated by the fact that only in the case of these, both money wage data and the consumer price index numbers were available in the United States, for deriving the indexes of real wages.

The Choice of the Base Year. There were two reasons for choosing 1950 as the base year. The period 1950 - 1960 featured an accelerated rate of industrial expansion and was particularly unique for analyzing wage trends. Specifically, in the field of industrial development this period was characterized by (a) rapid expansion of firms in the existing industries, (b) growth of new firms in the existing industries and (c) growth of new industries. Secondly a change in the industrial classification was introduced in 1950 for the reporting of data on wages and employment thereafter.

Methods followed in constructing the indexes. The idea was to present an industry and a state series of indexes for the purpose of comparing the trends in the two cases. These were done as follows.

Index of Money Wages. The amount of annual salaries, wages and benefits reported as received by workers was divided by the average number of workers reported as employed to arrive at the average annual earnings. The resulting figure for each year was indexed with base 1950.

Index of Real Wages. Working class consumer price index numbers relating to different centers in twelve states were available as follows: Andhra, Assam, Bihar, Bombay, Delhi, Madhya Pradesh, Madras, Orissa, Punjab, Rajasthan, Uttar Pradesh and West Bengal. For each state, the centerwise indexes were combined using the population of the center, as reported in the 1951 Census, as weights to arrive at a weighted index for the state as a whole. This was used to deflate the index of money wages for deriving the index of real wages for each state.

In the case of the industries, the above procedure could not be

followed for the following reason. The CMI and ASI in reporting the data from year to year, bracket two or more states for any one industry. A detailed examination of them revealed that in the case of all industries except cotton textile, chemicals, and iron and steel, the practice of bracketing had frequently been adopted. Therefore all India working class consumer price index numbers had to be used to deflate the index of money wages to derive the index of real wages for the industry series.

Index of Employment. The sources report the number of persons employed for each year as follows. The average number of workers employed by each factory, on days on which manufacturing operations were carried on in the factory, is computed by adding the number of persons employed on all these days and dividing by the number of days. These averages are aggregated for all factories in the state or industry as the case may be, and the aggregate is taken as the number of persons employed in the state or industry, respectively. This figure was indexed with base 1950.

Index of Fixed Capital per Worker. The amount of annual fixed capital employed reported was divided by the number of workers employed to arrive at an average of fixed capital per worker. This figure was indexed with base 1950.

Weighting for the Overall Indexes. The overall indexes of money wages, real wages, employment and fixed capital per worker in the case of the industries, as well as in the case of the states, have been weighted by the reported number of workers employed.

Adjustment for 1959 and 1960. In 1959 the Census of Manufactures was replaced by the Annual Survey of Industries. This resulted in differences with respect to coverage of industries and states; and differences with respect to coverage of factories. We may deal with the adjustments posed by these differences in that order.

Industry Series. The Annual Survey for 1959 contained 250 industries, and for 1960, 227 industries, compared to the 29 industries reported in the Census. The industries in the Survey included those covered by the Census, with certain changes in their classification. From the Survey, the 26 industries which corresponded with those of the Census were alone taken. In the case of glass and glassware, iron and steel - smelting (including furnace operations), rolling and re-rolling, ceramics, paper and paper board (including straw board), and chemicals (including drugs and pharmaceuticals), the Survey introduced certain changes in their classification. For glass, the data related to sheet and plate glass, hollow ware, miscellaneous ware, laboratory ware and optical glass. For iron and steel, the classifications were iron and steel, castings and forging, structurals, ferro alloys, and iron and steel pipes. For ceramics, it related to china ware and pottery, sanitary ware, white ware, and insulators. The classifications for paper were writing paper, printing and wrapping, paper board and straw board, hard board including fibre board and chip board. In the case of chemicals there were organic and inorganic chemicals, perfumes, cosmetics and other toilet preparations, and drug and pharmaceuticals. These classifications were retained for 1959 and 1960.

The data in both the Census and the Survey were reported by state breakdowns. The Survey reported data for Gujarat, Tirupura, Jammu and Kashmir and Andaman and Nicobar Islands in addition to the states reported by the Census. Hence for each of the 26 industries the data relating to the above states were omitted.

State Series. Data relating to the 26 industries were first broken down by 12 states for 1959 and 1960. In each industry those states included up to 1958 were included. The data for each state was then arrived at by adding the data from the industries for that state.

Overall Employment for States. The exclusion of general engineering, aluminum, brass and copper for 1959 and 1960 would impart a downward bias in the case of the state total since the aggregate figures for the states up to 1958 included these industries. The 1958 employment in these industries for the twelve states was included for these two years together with the employment in basic chemicals, paper for packaging and breweries for which no state breakdowns were reported in the Annual Survey.

Difference in the Coverage of Factories. Besides the above adjustment, another type of adjustment was necessitated owing to a difference in the coverage of factories between the Census and the Survey. The Census covered registered factories with power in industries employing 20 or more workers. The Survey covered registered factories with power employing 50 or more and factories withoug power employing 100 or more. Thus it left out the smaller factories employing between 20 and 49 workers and using power.[1] It was decided to appraise the significance in terms of employment, capital, output and value added of the factories left out by the Survey. Since there was no source in the United States that could reveal this, a letter was addressed to the Indian Statistical Institute in Calcutta which shared the responsibility for the tabulation and publication of the results of the Survey with the Central Statistical Organization at Delhi. It was learned[2] that factories covered by the Survey cameunder the Census sector and those left out by it under the Sample sector of the A.S.I.

1. Data for non powered factories are not separately provided by the Survey. It is assumed that there would not be many factories employing 100 or more workers without using some kind of power.
2. The information and the table that follows were taken from a paper obtained from the Institute. India, Cabinet Secretariat, Department of Statistics, Central Statistical Organisation, (Indian Statistics Wing), Estimate of Total Capital, Employment, and Output in Manufacturing Industry (1959 and 1960), Paper No. 24-CDN (31)/63, Calcutta. (mimeographed).

The former was completely enumerated while the latter was covered on the basis of probability sample. The following table shows the relative position of the two sectors.

Table 33

National Structure of Capital, Employment, Output and Value Added for Census And Sample Sector Factories, 1959 and 1960

Item	Census Sector		Sample Sector	
	1959 (1)	1960 (2)	1959 (3)	1960 (4)
No. of registered factories (%)	22.9	21.5	77.1	78.5
Productive Capital (%)	85.9	87.8	14.1	12.2
Productive Capital per factory (Rs.'000)	2112.8	2382.9	98.9	87.2
Persons employed (%)	80.4	79.7	19.6	20.3
Employment per factory (No)	349.0	346.0	24.0	23.0
Gross Output (%)	79.1	80.5	20.9	19.5
Output per factory (Rs. '000)	3273.0	3754.5	248.1	240.7
Value added (%)	84.8	84.9	15.2	15.1
Value added per factory (Rs. '000)	922.9	1030.1	47.0	48.1

Source: India (Republic), Cabinet Secretarit, Dept. of Statistics, Central Statistical Organisation, (Industrial Statistics Wing), Estimate of Total Capital, Employment, and Output in Manufacturing Industry (1959 and 1960), Paper No. 24-CDN (31/63, Calcutta, p.v. The figures furnished above have been assembled from 2 tables, given on the page.

The table shows that the national structure of employment, output, industrial capital and value added rests very largely on the significant shares of the Census sector factories. As to the problem of adjusting for the smaller factories, it was felt necessary to do so only for the computation of the employment index. In the case of the other two indexes, Viz. money wages and fixed capital per worker, the omission of the smaller factories, whose share is not very significant any way, would affect both the numerator and the denominator equally. At the same time it will not distort very much the representative character of the indexes. But in the case of employment, the exclusion of the smaller factories would lead to

an understatement of the extent of its change for 1959 and 1960. Hence an adjustment was made to the index of employment. It may be seen from the above table that in 1959, the sample sector factories employed 19.6 per cent of the workers. This related to factories employing from 10 to 49 workers. It was assumed that factories employing upwards of 10 workers with power could be taken as coming under the sample sector. On this basis, factories employing upwards of 20 but below 49 workers with power would constitute 14.7 per cent of the employment.[1] This percentage was arrived at by apportioning equal shares in terms of percentage covered at intervals of 10. Since the Survey covered 80.4 per cent of employment, the employment in each industry and state for 1959 was multiplied by the figure 1. 18 (95.1/80.4) and this resulting figure was used to compute the index of employment. For 1960 the figure turned out to be 1.19.

Andhra. A word finally must be mentioned about the indexes relating to Andhra. The state came into existence only in 1953. Until then the Census of Manufactures reported a combined total for Madras and Andhra. So up to 1953, separate figures were computed for Andhra by dividing the total of the two states proportionately, the ratio used being the average of the ratios for the years 1953 and 1954, which turned out to be almost constant.

Limitations of the Data. By way of concluding this note, it must be emphasized strongly that the data from the Census of Manufactures and the Annual Survey of Industries suffers from the lack of a uniform coverage. The adjustments have been made by taking into account the difficulty of obtaining data otherwise and without doing violence to the representative

1. The paper obtained from the Indian Statistical Institute did not specify the kind of factories covered by probability sample except to say that they were smaller in size. It is assumed therefore that these should employ at least 10 workers or more with power.

character and the accuracy of the indexes constructed, in as best a manner as possible. Our findings must be viewed bearing in mind this limitation.

INDEX OF MONEY WAGES, REAL WAGE, FIXED CAPITAL PER WORKER AND EMPLOYMENT

IN SELECTED MANUFACTURING INDUSTRIES IN INDIA, 1951 - 1960

Base 1950 = 100

Year	Fixed Capital	Employment	Salaries, Wages & Benefits	Index of Money Wages	Index of Real Wage	Index of Capital per worker	Index of Employment	Consumer Price Index
1	2	3	4	5	6	7	8	9
BICYCLES								
1950	6,921,840	2,478	3,174,629	100	100	100	100	100
1951	9,551,169	2,833	3,791,947	102	97	120	114	105
1952	16,754,342	3,683	4,503,106	95	93	163	149	102
1953	23,223,458	4,311	4,960,787	90	85	193	174	106
1954	28,729,073	5,596	6,322,329	88	86	184	225	102
1955	30,855,034	6,953	7,984,743	90	94	159	281	96
1956	35,815,378	8,355	9,723,309	91	87	154	336	105
1957	41,315,243	9,125	11,366,301	102	92	162	368	111
1958	49,918,112	9,712	13,781,642	111	96	184	392	116
1959	67,196,126	11,963	16,674,748	118	98	217	483	120
1960	83,981,783	13,748	21,714,974	123	100	232	555	123
BISCUIT MAKING								
1950	14,749,459	5,610	3,958,388	100	100	100	100	100
1951	19,237,443	5,572	4,217,888	107	102	131	99	105
1952	25,532,715	5,371	4,257,919	112	110	181	96	102
1953	25,388,052	4,657	4,087,106	124	117	270	83	106
1954	26,480,462	4,522	3,914,467	120	118	293	81	102
1955	26,160,413	4,219	3,662,757	123	128	286	75	96
1956	26,015,478	4,337	3,859,715	126	120	278	77	105
1957	27,663,500	4,516	4,077,177	128	115	293	80	111
1958	25,888,213	4,400	4,391,922	141	122	294	78	116
1959	25,832,661	3,106	3,815,200	178	148	316	55	120
1960	18,529,886	3,828	4,388,365	185	150	184	91	123

ALL INDIA INDUSTRIES (contd)

1	2	3	4	5	6	7	8	9
CEMENT								
1950	87,232,643	14,388	13,035,033	100	100	100	100	100
1951	136,[illegible]1,310	18,858	17,437,238	102	97	120	131	105
1952	128,742,260	15,172	15,937,754	116	114	140	105	102
1953	149,[illegible]8,330	14,940	18,109,725	134	126	165	104	106
1954	163,273,480	15,143	19,000,747	138	135	178	105	102
1955	233,437,780	16,790	20,425,701	134	140	229	117	96
1956	332,472,71[illegible]	22,[illegible]	23,656,468	117	111	247	155	105
1957	361,371,290	[illegible]	26,472,872	126	114	257	161	111
1958	456,775,45[illegible]	[illegible]	29,147,136	135	116	315	166	116
1959	483,476,5[illegible]	1[illegible]	25,702,509	143	119	401	[illegible]	120
1960	522,[illegible]13,51[illegible]	22,[illegible]	31,583,042	156	127	386	[illegible]	123
CERAMICS								
E(a)								
1950	22,818,955	16,[illegible]45	12,414,576	100	100	100	100	100
1951	27,7[illegible]	16,491	13,374,374	107	102	121	101	105
1952	[illegible]	1[illegible],010	12,[illegible]	113	111	156	91	102
1953	37,06[illegible],7[illegible]7	17,101	15,4[illegible]3,470	120	113	156	104	10[illegible]
1954	[illegible]	17,[illegible]	15,328,6[illegible]0	112	110	158	110	102
1955	45,[illegible]	17,[illegible]	16,33[illegible],4[illegible]2	121	126	184	109	96
1956	51,[illegible]	[illegible]	1[illegible]	127	121	193	116	105
1957	[illegible]	2[illegible]	2[illegible]	137	12[illegible]	214	125	111
1958	7[illegible]	[illegible],570	23,[illegible],23[illegible]	1[illegible]	120	223	1[illegible]	116
1959	[illegible]	13,[illegible]	10,7[illegible]	[illegible]	[illegible]	210	95	120
1960	[illegible]	1[illegible]	[illegible],4[illegible]	[illegible]	7[illegible]	200	97	123

ALL INDIA INDUSTRIES (contd)

1	2	3	4	5	6	7	8	9
CHEMICALS								
1950	136,438,420	26,411	24,484,447	100	100	100	100	100
1951	146,922,530	30,530	31,873,931	113	108	93	116	105
1952	373,141,130	32,432	34,938,715	116	114	223	123	102
1953	403,012,000	33,165	38,187,175	124	117	235	126	106
1954	411,607,830	34,955	40,825,104	126	124	228	132	102
1955	472,712,070	40,568	47,514,263	126	131	226	154	96
1956	500,542,430	43,649	52,108,056	129	123	222	165	105
1957	508,553,860	44,709	57,263,731	138	124	220	169	111
1958	576,009,890	47,482	66,287,995	149	128	232	182	116
1959	609,378,528	43,477	73,028,435	181	151	271	194	120
1960	831,834,677	48,047	83,283,977	187	152	335	216	123
COTTON TEXTILES								
1950	657,058,290	602,731	670,929,460	100	100	100	100	100
1951	702,777,820	625,177	771,058,630	111	106	103	104	105
1952	762,887,860	651,318	835,517,410	115	113	107	108	102
1953	829,406,120	655,434	873,003,830	120	113	116	109	106
1954	896,781,890	675,528	876,277,970	117	115	122	112	102
1955	971,734,260	687,251	853,013,840	112	117	130	114	96
1956	1105,101,300	725,072	948,911,640	118	112	140	120	105
1957	1318,057,700	727,200	990,745,200	122	110	166	121	111
1958	1412,418,300	655,428	900,885,130	123	106	198	109	116
1959	1560,259,700	708,975	1018,474,200	129	108	202	135	120
1960	1567,989,500	710,317	1139,856,700	144	117	202	140	123

ALL INDUSTRIES (contd)

1	2	3	4	5	6	7	8	9
DISTILLERIES & BREWERIES								
DISTILLERIES & BREWERIES								
[illegible]								
1950	19,915,143	4,112	3,235,288	100	100	100	100	100
1951	24,122,385	4,094	3,365,825	104	99	122	100	105
1952	24,038,337	4,051	3,508,566	110	108	123	99	102
1953	24,713,409	3,748	3,250,544	110	104	136	91	106
1954	24,[illegible]14,832	3,793	3,392,815	114	112	136	92	102
1955	22,043,264	3,694	3,302,365	114	119	123	90	96
1956	22,110,103	4,024	3,536,680	112	107	113	98	105
1957	22,071,867	3,972	3,851,516	123	111	115	97	111
1958	22,461,775	4,060	4,259,645	133	115	114	99	116
1959	20,752,086	3,369	3,540,252	134	112	127	*	120
1960	28,613,256	3,882	4,232,337	139	113	152	112	123
ELECTRIC FANS								
1950	10,497,526	4,929	4,171,937	100	100	100	100	100
1951	9,822,244	4,374	4,551,040	123	117	105	89	105
1952	9,399,515	3,839	3,912,289	120	118	115	78	102
1953	10,222,285	3,618	4,187,665	137	129	133	73	106
1954	9,214,213	3,241	3,545,051	129	126	133	66	102
1955	11,640,587	3,812	4,407,157	137	143	143	77	96
1956	10,844,816	3,562	4,079,764	135	129	143	72	105
1957	12,032,308	3,946	5,041,251	151	136	144	80	111
1958	9,108,510	3,919	5,778,349	174	150	109	80	116
1959	13,844,941	4,901	9,841,028	237	198	133	118	120
1960	18,316,745	7,789	17,861,025	271	220	119	188	123

ALL INDIA INDUSTRIES (contd)

ELECTRIC LAMPS

1	2	3	4	5	6	7	8	9
1950	8,826,966	1,340	1,210,826	100	100	100	100	100
1951	12,625,566	1,426	1,453,112	113	108	134	106	105
1952	13,091,519	1,673	1,715,076	113	111	119	125	102
1953	12,651,652	1,575	1,684,161	118	111	122	118	106
1954	12,597,731	1,940	2,162,631	123	121	99	145	102
1955	12,185,355	1,916	2,181,605	126	131	97	143	96
1956	12,527,253	2,075	2,636,545	141	134	92	155	105
1957	8,925,862	2,166	2,629,376	134	121	63	162	111
1958	9,333,140	2,218	2,803,117	140	121	64	166	116
1959	28,663,060	2,405	3,309,006	152	127	181	212	120
1960	12,778,082	2,727	3,622,096	147	120	71	242	123

FRUITS AND VEGETABLES CANNING

1950	5,853,694	1,516	953,204	100	100	100	100	100
1951	5,073,773	1,282	903,705	112	107	102	85	105
1952	5,811,755	1,595	938,513	94	92	94	105	102
1953	7,386,858	1,311-	736,916	89	84	148	86	106
1954	7,807,963	1,293	718,001	88	86	156	85	102
1955	6,082,048	1,236	690,715	89	93	127	82	96
1956	5,751,853	1,245	768,152	98	93	122	82	105
1957	5,852,457	1,471	886,344	96	86	103	97	111
1958	4,812,183	1,536	858,895	89	77	81	101	116
1959	4,107,542	1,049	552,189	84	70	101	92	120
1960	3,822,338	1,467	953,296	103	84	68	115	123

ALL INDIA INDUSTRIES (contd)

1	2	3	4	5	6	7	8	9
GLASS								
1950	30,425,015	20,315	11,908,934	100	100	100	100	100
1951	26,303,909	20,164	12,581,493	106	101	87	99	105
1952	37,628,146	21,511	12,739,751	101	99	117	106	102
1953	40,822,303	21,047	12,985,702	105	99	130	104	106
1954	50,712,493	22,273	14,144,307	108	106	153	110	102
1955	52,928,872	24,090	15,260,002	108	113	147	119	96
1956	52,441,912	23,792	17,735,024	129	123	150	115	105
1957	55,127,777	24,154	18,147,842	128	115	152	119	111
1958	52,900,100	23,494	19,631,301	143	123	150	116	116
1959	61,307,592	30,877	28,007,611	155	129	133	179	129
1960	60,761,560	31,536	29,179,507	158	129	129	185	123
IRON AND STEEL								
1950	281,505,950	62,102	92,671,769	100	100	100	100	100
1951	266,186,280	66,205	116,673,690	118	112	89	107	105
1952	255,283,060	65,491	121,672,020	124	122	86	105	102
1953	288,953,970	63,664	116,206,460	122	115	100	103	106
1954	358,999,200	69,566	123,583,190	119	117	114	112	102
1955	408,814,820	72,683	128,904,670	119	124	124	117	96
1956	528,975,180	71,688	136,811,720	128	122	163-	115	105
1957	810,605,040	73,651	137,192,150	125	113	243	119	111
1958	1310,584,400	~~70,799~~ 75997	~~155,493,540~~ 143,162,040	126	109	380	122	116
1959	1736,435,600	70,799	155,493,540	147	123	541	135	120
1960	1779,822,600	73,734	169,987,230	154	125	533	141	123

ALL INDIA INDUSTRIES (contd)

1	2	3	4	5	6	7	8	9
JUTE MILLS								
1950	300,295,180	290,508	224,625,340	100	100	100	100	100
1951	285,676,590	271,896	223,083,490	106	101	102	94	105
1952	283,553,700	275,039	255,186,640	120	118	100	95	102
1953	297,076,610	255,181	237,862,050	121	114	113	88	106
1954	313,037,300	254,930	243,966,380	124	122	119	88	102
1955	368,506,790	255,082	255,595,610	130	135	140	88	96
1956	411,624,000	257,882	265,320,000	133	127	154	89	105
1957	443,030,290	235,120	241,725,340	133	120	182	81	111
1958	402,561,840	238,203	247,951,090	135	116	163	88	116
1959	373,254,180	229,390	231,937,160	131	109	157	93	120
1960	384,710,110	212,582	239,868,000	146	119	175	87	123
MATCHES								
1950	10,024,574	11,400	11,250,779	100	100	100	100	100
1951	11,672,115	10,957	12,647,001	117	111	121	96	105
1952	14,199,328	11,603	13,056,516	114	112	139	102	102
1953	13,708,237	11,282	13,265,161	119	112	138	99	106
1954	18,760,401	14,440	13,716,868	96	94	148	127	102
1955	19,416,907	16,795	14,319,789	86	90	131	147	96
1956	19,556,923	15,183	14,439,356	96	91	146	133	105
1957	21,385,143	25,393	15,085,895	99	89	158	135	111
1958	22,362,375	13,110	15,808,121	122	105	194	115	116
1959	22,356,739	14,615	16,883,490	117	98	174	152	120
1960	22,811,441	14,335	17,985,459	127	103	181	150	123

ALL INDIA INDUSTRIES (contd)

1	2	3	4	5	6	7	8	9
Paints and Varnish								
1950	14,296,834	3,739	3,662,964	100	100	100	100	100
1951	15,145,959	4,059	4,469,210	112	107	98	109	105
1952	16,332,053	3,815	4,278,551	114	112	112	102	102
1953	15,368,352	3,828	4,436,108	118	111	105	102	106
1954	16,693,532	4,083	4,811,432	120	118	107	109	102
1955	15,967,643	4,339	5,081,088	120	125	96	116	96
1956	18,006,171	4,549	5,631,688	126	120	104	122	105
1957	16,064,988	4,101	5,479,109	136	123	102	110	111
1958	16,838,895	3,907	5,716,045	149	128	113	106	116
1959	12,923,577	4,376	6,496,530	152	127	77	138	120
1960	17,990,718	4,530	7,491,211	169	137	104	144	123
PAPER AND PAPER PRODUCTS								
1950	99,040,419	19,976	18,015,599	100	100	100	100	100
1951	103,800,440	19,151	20,044,681	116	110	109	96	105
1952	99,431,300	17,442	19,284,343	123	121	115	87	102
1953	122,419,660	19,358	19,582,831	112	106	128	97	106
1954	127,037,270	21,822	21,243,131	108	106	117	109	102
1955	137,455,920	23,375	23,944,013	114	119	119	117	96
1956	131,831,950	25,539	27,545,844	120	114	144	108	105
1957	252,772,470	28,257	31,737,775	125	113	180	141	111
1958	297,471,960	30,355	35,994,973	131	113	198	152	116
1959	26,088,531	4,268	4,244,143	103	86	123	25	120
1960	75,906,607	8,002	9,621,088	133	108	191	48	123

All India Industries (contd)

1	2	3	4	5	6	7	8	9
PLYWOOD AND TEA CHESTS								
1950	9,675,065	2,998	1,758,018	100	100	100	100	100
1951	8,812,635	3,804	2,120,020	95	90	72	127	105
1952	11,114,999	4,002	2,282,324	97	95	86	133	102
1953	12,538,683	3,151	1,909,266	103	97	124	105	106
1954	16,015,271	3,812	2,409,009	108	106	130	127	102
1955	18,074,126	5,977	3,801,599	108	113	94	199	96
1956	21,046,310	6,287	4,209,681	114	109	104	210	105
1957	21,700,228	5,809	4,166,623	122	110	116	194	111
1958	21,983,320	5,597	4,227,330	129	111	122	187	116
1959	30,391,861	6,406	5,048,637	134	112	147	252	120
1960	35,015,597	6,606	5,405,481	140	114	164	262	123
RICE MILLING								
1950	59,861,906	40,441	10,769,911	100	100	100	100	100
1951	58,126,805	35,332	9,114,386	97	92	111	87	105
1952	58,951,857	36,249	9,506,560	98	96	110	90	102
1953	62,595,063	40,522	11,874,824	110	104	104	100	106
1954	66,981,051	47,873	16,036,823	126	124	95	118	102
1955	70,524,489	51,362	18,055,239	132	138	93	127	96
1956	77,384,647	56,576	19,495,464	129	123	92	140	105
1957	73,174,711	54,875	19,311,559	132	119	90	136	111
1958	73,791,722	49,091	16,048,427	123	106	102	121	116
1959	25,799,925	23,753	8,463,102	134	112	73	69	120
1960	25,533,836	22,334	9,087,564	153	124	77	66	123

ALL INDIA INDUSTRIES (contd)

1	2	3	4	5	6	7	8	9
SEWING MACHINES								
1950	4,666,063	1,780	2,827,775	100	100	100	100	100
1951	6,475,167	2,192	3,274,589	94	90	113	123	105
1952	7,743,390	2,211	3,381,262	96	94	134	124	102
1953	8,444,000	2,374	3,697,468	98	98	136	133	106
1954	9,158,966	3,110	5,586,768	113	111	112	175	102
1955	10,912,208	3,603	6,398,949	112	117	116	202	96
1956	13,018,659	4,090	8,551,392	132	126	121	230	105
1957	16,626,671	4,535	10,134,900	141	127	140	286	111
1958	20,946,867	4,830	11,709,849	153	132	165	298	116
1959	16,222,125	3,655	8,995,563	155	129	169	243	128
1960	18,886,450	3,763	13,453,626	225	183	189	252	123
SOAP								
1950	30,457,039	5,310	5,998,464	100	100	100	100	100
1951	31,769,182	5,450	6,440,011	105	100	102	103	105
1952	24,731,119	5,054	6,836,713	120	118	85	95	102
1953	26,758,418	4,913	7,442,027	134	126	95	93	106
1954	39,072,768	5,163	7,308,878	125	123	132	97	102
1955	39,178,237	4,933	7,341,317	132	138	138	93	96
1956	33,465,789	4,824	7,647,571	190	133	121	91	105
1957	33,495,110	4,586	8,280,814	160	144	127	86	111
1958	35,934,302	4,781	8,922,676	165	142	131	98	116
1959	36,510,694	5,648	11,012,927	173	144	113	126	120
1960	36,274,634	6,559	12,931,017	175	142	96	147	123

ALL INDIA INDUSTRIES (contd)

1	2	3	4	5	6	7	8	9
21 **SUGAR**								
1950	190,251,490	107,895	54,802,187	100	100	100	100	100
1951	200,449,390	101,291	64,846,352	126	120	112	94	105
1952	203,443,350	100,696	61,651,381	121	119	115	93	102
1953	202,110,490	95,[illegible]88	57,071,473	118	111	121	88	106
1954	222,520,110	101,077	69,291,835	135	132	125	94	102
1955	248,[illegible]49,730	101,626	75,334,181	146	152	139	94	96
1956	343,977,910	113,156	85,719,500	149	142	172	105	105
1957	461,037,510	115,477	85,171,477	145	131	226	[illegible]	111
1958	505,561,190	110,145	84,924,817	152	131	260	[illegible]	116
1959	581,408,780	112,407	85,910,941	150	125	293	123	120
1960	666,869,690	9[illegible],928	98,936,722	210	171	407	102	123
22 **STARCH**								
1950	2,853,733	1,211	497,902	100	100	100	100	100
1951	5,[illegible]71,[illegible]16	2,533	1,004,842	96	91	90	209	105
1952	6,[illegible]46,524	2,507	941,364	91	89	107	[illegible]	102
1953	6,787,587	1,330	1,046,151	191	180	217	110	106
1954	8,288,702	1,6[illegible]4	1,388,121	203	199	211	137	102
1955	[illegible],548,136	1,380	1,213,087	214	223	[illegible]94	114	96
1956	15,[illegible]65,025	1,560	1,601,700	250	238	434	129	105
1957	14,7[illegible]7,636	1,555	1,748,040	273	246	404	1[illegible]8	111
1958	16,740,679	1,700	1,914,191	274	236	418	140	116
1959	18,780,381	2,108	2,271,011	264	220	378	206	120
1960	20,[illegible]54,475	1,871	2,590,107	337	274	475	184	123

[illegible] (cont'd)

1	2	3	4	5	6	7	8	9
TANNING MATERIALS								
1950	[illegible]	7,548	5,[illegible]	100	100	100	100	100
1951	[illegible],503	8,200	6,180,391	109	104	92	109	105
1952	[illegible],491	7,718	5,265,266	108	106	101	93	102
1953	[illegible],397	7,411	5,736,505	112	106	99	98	106
1954	9,858,260	8,117	6,154,764	110	108	104	108	102
1955	11,[illegible],287	8,508	5,[illegible],696	106	110	119	113	96
1956	12,3[illegible],305	9,309	7,0[illegible],377	110	105	113	123	105
1957	9,9[illegible],[illegible]2	8,798	7,267,203	119	107	96	117	111
1958	10,251,979	7,008	5,854,[illegible]40	120	100	125	93	116
1959	11,630,350	8,265	8,957,194	157	131	120	129	120
1960	13,941,214	9,449	10,462,732	160	130	126	149	123
VEGETABLE OILS (Excluding edible hydrogenated Oils)								
1950	204,360,700	46,950	25,401,204	100	100	100	100	100
1951	130,629,130	39,128	19,338,387	91	87	77	83	105
1952	123,808,260	36,315	16,832,455	86	84	78	77	102
1953	112,372,280	33,807	15,302,912	84	79	76	72	106
1954	120,736,190	35,119	16,469,623	87	85	79	75	102
1955	121,832,320	41,200	21,353,892	98	102	68	88	96
1956	134,207,760	42,763	21,741,057	94	90	72	91	105
1957	117,[illegible],[illegible]80	38,477	20,461,604	88	88	70	82	111
1958	111,[illegible],[illegible]00	33,754	18,036,800	99	85	75	72	116
1959	53,[illegible],160	19,095	12,532,620	121	101	64	48	120
1960	[illegible],[illegible]73	20,522	14,405,196	131	107	60	52	123

ALL INDIA INDUSTRIES (contd)

1	2	3	4	5	6	7	8	9
	WHEAT							
20	WHEAT FLOUR							
1950	19,057,088	4,521	3,863,037	100	100	100	100	100
1951	17,846,423	4,560	4,085,767	105	100	93	101	105
1952	19,738,539	4,587	4,004,934	103	101	103	101	102
1953	20,315,235	4,595	4,454,088	113	107	105	102	106
1954	20,273,934	4,945	4,660,708	110	108	97	109	102
1955	23,134,759	5,688	5,478,643	113	118	96	126	96
1956	27,334,737	5,909	5,933,292	118	112	110	131	105
1957	34,660,460	6,109	6,345,974	122	110	135	139	111
1958	36,425,333	6,320	6,481,055	120	103	139	140	116
1959	32,080,774	5,334	6,395,391	140	117	143	139	120
1960	32,892,148	5,750	6,823,223	139	113	136	151	123
21	WOOLLEN TEXTILES							
1950	15,406,837	13,851	12,729,633	100	100	100	100	100
1951	21,836,635	12,569	13,701,488	119	113	157	91	105
1952	28,675,613	14,142	14,562,389	112	110	182	102	102
1953	31,059,437	15,008	15,777,106	115	108	186	108	106
1954	34,752,684	14,654	15,888,287	118	116	213	106	102
1955	34,588,303	13,388	13,925,771	113	118	233	97	96
1956	31,100,281	13,854	14,351,716	113	108	202	100	105
1957	36,715,370	15,608	16,421,793	114	103	211	113	111
1958	38,531,117	15,283	17,460,407	124	107	227	110	116
1959	42,183,336	13,939	20,213,287	122	102	210	154	129
1960	44,073,234	17,904	21,006,135	128	104	221	154	123

OVERALL INDEXES OF MONEY WAGE, REAL WAGE, FIXED CAPITAL PER WORKER AND EMPLOYMENT FOR TWENTY SIX INDUSTRIES, ALL INDIA, 1951-1960.

Base 1950 = 100

Year	Fixed Capital	Employment	Salaries, Wages & Benefits	Index of Money Wage	Index of Real Wage	Index of Capital per worker	Index of Employment	Consumer Price Index
1	2	3	4	5	6	7	8	9
1950	2251,835,800	1,320,405	1223,570,200	100	100	100	100	100
1951	2543,774,300	1,318,128	1371,542,700	110	105	117	101	105
1952	2571,194,700	1,341,586	1469,423,000	115	113	110	103	102
1953	2734,338,500	1,322,250	1492,310,900	119	112	120	102	106
1954	3054,161,000	1,376,650	1538,947,700	119	117	125	106	102
1955	3424,467,200	1,418,236	1562,322,300	119	124	135	110	96
1956	4024,795,900	1,490,139	1711,405,200	124	118	148	117	105
1957	4786,516,400	1,477,226	1752,840,400	126	114	175	117	111
1958	5610,944,100	1,399,205	1690,611,600	129	111	201	112	116
1959	5483,646,300	1,370,512	1778,711,483	135	113	215	122	120
1960	5871,045,300	1,359,863	1986,910,902	152	124	227	124	123

Source: India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures, Delhi. Issues of the report for the years 1950 to 1958.

Government of India, Directorate of Industrial Statistics, Annual Survey of Industries 1959, Delhi, 1961.

India (Republic), Central Statistical Organisation, Annual Survey of Industries 1960, vol II to IX, Calcutta, 1964.

STATEWISE INDEXES FOR MONEY WAGE, REAL WAGE, FIXED CAPITAL PER WORKER, AND EMPLOYMENT IN INDIA, 1951-1960

Year	Fixed Capital	Employment	Salaries, Wages & Benefits	Index of Money Wage	Index of Real Wage	Index of Capital per Worker	Index of Employment	Consumer Price Index
1	2	3	4	5	6	7	8	9
ANDHRA								
1950	62,431,178	34,591	14,713,419	100	100	100	100	100
1951	68,258,653	35,170	15,996,114	107	104	108	102	103
1952	71,864,408	34,829	15,395,939	104	103	114	101	101
1953	76,795,526	34,206	16,835,939	116	105	124	99	110
1954	79,438,623	35,599	18,146,330	120	117	124	103	103
1955	77,451,072	36,724	19,190,573	123	134	117	106	92
1956	167,577,970	58,826	37,070,365	148	135	158	170	110
1957	192,725,680	60,154	39,920,719	155	132	178	174	118
1958	235,270,430	54,632	37,634,226	162	138	239	158	117
1959	180,963,060	30,046	22,180,949	174	141	334	103	123
1960	184,472,150	34,728	30,443,598	205	163	294	119	126
ASSAM								
1950	14,054,969	5,285	4,445,443	100	100	100	100	100
1951	13,590,124	4,908	4,141,930	100	91	104	93	110
1952	16,772,724	5,413	4,923,571	108	102	117	102	106
1953	18,818,979	5,409	5,005,600	110	111	131	102	99
1954	20,721,873	5,576	5,234,293	112	119	140	106	94
1955	22,450,707	6,792	6,528,815	114	131	124	129	87
1956	23,472,254	7,119	7,145,683	119	123	124	135	97
1957	24,075,491	6,370	6,909,880	129	124	142	121	104
1958	20,690,631	5,320	5,958,627	133	127	146	101	105
1959	10,879,779	2,429	1,509,583	74	72	168	46	103
1960	19,579,103	5,860	4,860,311	99	94	126	132	105

STATEWISE INDEXES (contd)

1	2	3	4	5	6	7	8	9
BIHAR								
1950	29[illegible],425,520	87,758	99,439,064	100	100	100	100	100
1951	314,620,590	87,302	128,455,410	122	116	107	99	105
1952	472,390,100	89,138	125,930,000	126	126	158	102	100
1953	502,788,350	88,770	124,824,870	124	128	169	101	97
1954	51[illegible]370	88,785	126,380,610	126	147	174	101	86
1955	621,0[illegible],590	92,[illegible]5	134,154,440	128	154	200	105	83
1956	739,902,980	98,912	140,823,220	126	138	223	113	91
1957	979,909,320	101,043	145,778,560	127	126	289	115	101
1958	1490,863,800	100,262	149,862,350	132	125	443	[illegible]	106
1959	2729,557,800	64,296	118,105,640	162	153	1265	87	106
1960	1358,320,200	65,310	146,073,340	197	191	620	89	103
BOMBAY								
1950	728,506,320	490,701	569,016,630	100	100	100	100	100
1951	789,524,670	502,328	657,740,140	113	107	106	102	106
1952	817,253,240	512,942	704,137,960	118	110	107	105	107
1953	871,912,110	506,522	731,778,060	125	110	116	103	114
1954	881,130,000	493,024	710,431,800	124	111	120	100	112
1955	933,656,010	500,030	689,619,990	119	114	126	102	104
1956	1191,359,100	566,805	792,068,950	121	108	142	116	112
1957	1299,950,100	530,730	792,973,580	129	110	165	108	117
1958	1429,794,700	499,633	755,415,850	130	105	193	[illegible]	124
1959	817,307,500	285,839	447,633,980	135	104	193	69	130
1960	925,200,930	300,304	528,232,330	152	114	208	73	133

STATE-WISE INDEXES (contd)

1	2	3	4	5	6	7	8	9
DELHI								
1950	40,335,250	21,629	24,521,079	100	100	100	100	100
1951	40,573,721	21,704	29,037,017	118	109	108	100	108
1952	38,994,223	21,222	27,450,539	114	106	99	98	108
1953	32,494,365	21,588	30,388,413	124	117	81	100	106
1954	40,275,448	23,285	30,592,902	116	110	93	108	105
1955	43,371,004	24,815	32,104,677	114	115	94	115	99
1956	45,067,930	27,144	37,743,056	123	113	89	125	109
1957	50,425,304	27,983	40,254,866	127	111	97	129	114
1958	58,917,381	28,648	39,564,677	122	108	110	[illegible]	113
1959	53,008,550	23,987	40,343,402	148	123	119	131	120
1960	29,087,754	13,111	23,039,169	155	129	119	72	120
MADHYA PRADESH								
1950	77,624,210	45,868	34,876,907	100	100	100	100	100
1951	78,073,064	46,141	34,021,455	97	88	100	101	110
1952	85,178,513	45,978	36,507,991	104	106	109	100	98
1953	105,138,540	46,352	38,279,364	109	110	134	101	99
1954	106,869,270	45,429	38,434,896	111	121	139	99	92
1955	105,638,540	46,877	38,835,965	109	125	133	102	87
1956	45,471,260	17,633	14,298,993	107	108	152	38	99
1957	178,388,910	51,571	54,075,876	138	130	204	112	106
1958	142,170,220	32,383	35,920,644	146	135	259	91	108
1959	113,905,540	46,805	51,156,848	144	135	144	121	107
1960	149,865,140	52,336	64,092,871	161	149	169	136	108

STATISTICAL INDICES (contd)

1	2	3	4	5	6	7	8	9
MADRAS								
1950	218,790,340	126,297	100,235,160	100	100	100	100	100
1951	239,218,750	128,410	108,973,520	107	105	108	102	102
1952	251,849,140	127,168	104,884,830	104	103	114	101	101
1953	267,595,070	121,843	111,158,900	115	106	127	96	108
1954	280,756,840	133,767	128,939,680	120	114	121	106	105
1955	308,188,610	143,310	129,570,190	114	116	124	113	98
1956	352,767,430	144,729	141,445,580	123	112	141	115	110
1957	435,888,830	152,307	160,141,040	132	115	165	128	115
1958	492,237,020	144,814	156,820,100	136	111	196	128	123
1959	437,456,950	119,047	125,086,030	132	100	212	111	132
1960	490,525,310	120,141	159,695,680	167	118	236	113	142
ORISSA								
1950	44,332,124	9,203	4,815,037	100	100	100	100	100
1951	64,275,616	10,272	6,414,287	119	105	130	112	113
1952	64,970,428	12,977	9,107,577	134	138	104	141	97
1953	65,024,319	14,141	9,839,679	133	139	95	154	96
1954	60,179,048	14,220	9,387,666	134	146	88	155	92
1955	65,350,515	14,222	10,274,229	138	153	95	155	90
1956	81,543,947	15,170	11,065,223	139	142	112	165	98
1957	101,709,580	17,201	12,621,280	140	139	123	187	101
1958	121,903,190	17,014	13,437,021	151	141	149	183	107
1959	51,238,340	8,161	7,085,153	166	154	130	105	108
1960	48,447,304	9,442	8,687,854	176	154	107	122	114

STATE-WISE SELECTED INDEXES (contd)

1	2	3	4	5	6	7	8	9
PUNJAB								
1950	44,121,972	24,054	17,166,308	100	100	100	100	100
1951	45,172,437	22,140	18,194,915	115	114	111	92	101
1952	51,459,383	22,338	18,290,510	115	126	126	93	91
1953	65,338,566	23,474	20,343,582	121	136	152	98	89
1954	66,984,891	23,964	22,428,941	131	147	152	100	89
1955	72,821,949	24,767	23,022,057	130	157	160	103	83
1956	108,100,810	34,047	31,966,569	132	145	173	142	91
1957	112,382,460	35,102	34,747,381	139	146	175	146	95
1958	146,129,290	36,481	38,446,762	148	156	218	160	95
1959	136,660,350	27,276	29,089,144	149	149	273	134	101
1960	127,343,900	27,827	31,125,968	157	155	249	138	101
RAJASTHAN								
1950	35,031,352	8,713	5,841,499	100	100	100	100	100
1951	43,796,022	9,829	6,526,130	99	93	111	113	107
1952	39,915,808	10,335	7,879,031	114	110	96	119	104
1953	73,766,826	11,927	8,924,849	112	112	154	137	100
1954	77,396,678	13,473	11,099,901	123	140	143	155	88
1955	77,234,485	14,582	11,169,544	114	143	132	167	80
1956	100,373,530	23,096	16,812,001	109	120	108	265	91
1957	94,974,729	22,233	16,744,934	112	118	106	255	95
1958	104,671,380	18,543	16,255,694	131	132	140	213	99
1959	90,124,532	13,461	12,684,411	141	138	167	182	102
1960	99,648,916	14,141	14,305,759	151	147	175	193	103

STATEWISE INDEXES (contd)

1	2	3	4	5	6	7	8	9
UTTAR PRADESH								
1950	211,735,990	145,909	111,689,220	100	100	100	100	100
1951	219,655,950	143,000	128,518,290	117	114	106	98	103
1952	233,817,010	150,915	132,980,900	115	114	107	103	101
1953	238,529,950	154,734	131,528,310	111	107	106	106	104
1954	240,484,490	156,316	132,065,900	110	118	106	107	93
1955	302,852,690	153,449	126,890,960	108	126	136	105	86
1956	344,157,210	164,544	148,863,770	118	120,	144	113	98
1957	385,904,730	167,287	153,588,430	120	117	159	115	103
1958	394,956,710	153,804	138,620,200	118	109	177	105	108
1959	441,853,320	138,173	130,199,610	123	114	220	112	108
1960	442,315,220	138,273	159,602,890	151	139	220	113	109
WEST BENGAL								
1950	757,306,050	447,281	363,384,900	100	100	100	100	100
1951	729,246,640	430,383	374,712,320	107	104	100	96	103
1952	741,870,480	428,313	410,315,910	118	122	102	96	97
1953	811,839,040	407,529	390,128,190	118	122	118	91	97
1954	885,781,270	418,109	414,022,010	122	130	125	93	94
1955	975,849,290	438,345	452,926,930	127	140	131	98	91
1956	1093,168,800	443,742	480,399,980	133	137	146	99	97
1957	1224,595,100	425,863	463,526,110	134	129	170	95	104
1958	1248,993,100	426,115	482,760,810	139	128	173	93	109
1959	1134,214,500	332,129	362,807,510	134	123	202	88	109
1960	1198,701,000	244,270	364,001,750	152	136	241	78	112

OVERALL INDEX OF MONEY WAGE, REALWAGE, FIXED CAPITAL PER WORKER AND EMPLOYMENT FOR TWELVE STATES, 1951-1960.

Base 1950=100

Year	Fixed Capital (rs)	Employment	Salaries, Wages & Benefits (Rs)	Index of Money Wage	Index of Real Wage	Index of Capital per Worker	Index of Employment
1	2	3	4	5	6	7	8
1950	2528,594,800	1,447,289	1350,144,600	100	100	100	100
1951	2646,000,900	1,442,137	1504,731,300	111	106	104	100
1952	2836,355,100	1,461,568	1598,804,500	116	114	110	101
1953	3130,036,900	1,436,495	1619,035,400	120	115	121	100
1954	3258,901,200	1,451,547	1645,764,700	121	121	124	101
1955	3605,904,000	1,496,328	1674,288,100	120	128	133	104
1956	4292,963,000	1,601,767	1859,780,900	126	122	148	115
1957	5080,929,900	1,598,444	1921,281,800	131	120	173	114
1958	5886,618,000	1,517,685	1870,696,700	134	118	203	108
1959	6200,764,000	1,344,583	1356,144,800	138	119	265	108
1960	5073,506,700	1,336,503	1534,161,300	159	134	246	109

Source: India (Republic), Directorate of Industrial Statistics, Report on the Census of Manufactures, Delhi. Issues of the report for the years 1950 to 1958.

Government of India, Directorate of Industrial Statistics, Annual Survey of Industries 1952, Delhi, 1961.

India (Republic), Central Statistical Organisation, Annual Survey of Industries 1960, vol. II to IX, Calcutta, 1964.