CHAPTER - I

INTRODUCTION

(1) Factor Shares: A Few Theories :

The theory of income distribution can be conceived of covering at least four possible subjects:[1] incomes earned in particular occupations, personal incomes by size, various components of the official personal income accounts, and the functional distribution of income among the owners of different productive factors. From the view point of theorizing the subject, however, it is the functional distribution of income which has "a large number of theories, using a variety of approaches and explaining a variety of phenomena".[2]

The distribution of national income by type has always occupied a prominent place in the literature of Economics. The earlier economists, particularly Ricardo and Marx, were keen to analyse the laws which determine the relative shares of factors of production and the

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1. Tibor Scitovsky, "A Survey of Some Theories of Income Distribution", in The Behaviour of Income Shares, Studies in Income and Wealth, Vol.27, National Bureau of Economic Research (Princeton University Press, 1964), p.15.
2. Ibid, p.16.

behaviour of these shares over a period of time. As Phelps Brown puts it, "Ever since political economy took its rise, economists have been concerned to determine the laws of distribution". And even a "century and a half later, no one would claim that economists have finally solved it."[3]

While examining the relative factor shares of some of the Western economies after 1860, Phelps Brown[4] divides the laws of income distribution into four main types of theories: (i) bargaining theory which deals with the impact of trade unions on the course of income distribution; (ii) Monopolistic pricing theory, where the price-output policy of the firm determines the proportion of wages to be paid to the workers; (iii) Widow's cruse theory where the distribution of income is determined by the flow conditions of equilibrium in the product market; and (iv) Factor pricing theory where the shares in the product are the outcome of the pricing of the factors of production determined by the demand for and supply of each factor.

As regards the influence of trade-unionism in securing a larger share for labour in the total product,

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3. E.H.Phelps Brown: <u>Pay and Profits</u>, (New York: Augustus M.Kelley, 1968), p.1.

4. Ibid, Ch.I.

Phelps Brown does not find any empirical support in the case of Western economies examined by him. Clark Kerr,[5] after analysing the U.S.A. situations before 1951, has also come to the conclusion that the trade unionism did not have any important effects on labour's share in national income. Whether the trade unionism will succeed in making the distribution of income in their own favour or not, after all, depends on the profit margin which the firms are able to maintain. If the firms succeed in raising the labour productivity (say, through substitution between factors of production or through introduction of new methods of production), by more than the increase in wage rate, then the labour share will decline. The increase in wage rate relative to the cost of capital would normally lead to a rise in marginal rate of substitution between labour and capital via substitution of the factors. But the increase in marginal rate of substitution between labour and capital will mean a proportionately greater increase in capital/labour ratio if the elasticity of substitution between the two is more than one. This implies that the relative share of labour will decline with a relative increase in wage rate. As Phelps Brown puts it, "whatever the scope trade unions may be given for obtaining agreement to rises in money wages, these rises will not

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5. Clark Kerr: "Trade Unionism and Distributive Shares", <u>American Economic Review</u>, May, 1954, p.289.

reduce the share of profits unless firms are prevented from raising their selling prices so as to protect their profit margins",[6] and it is the degree of competition in the market which decides about these margins and hence the share accruing to the labour class. The monopolistic pricing theory,[7] although capable of determining the profit margins of the firms, unfortunately, is not in a position to say anything about the working of the macro--system.

The Widow's cruse (Keynesian) type of theory[8] (macro-theory by its nature) discusses how the conditions of equilibrium in the product market determine the distribution of total income between wages and profits. Given the propensities to save of the wage-earners and capitalists (the propensity of the latter being higher than the former), the share of profits in total income, according to the theory, is determined by the ratio of investment to output. The theory could be criticised on the ground that

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6. Phelps Brown: Op.cit., p.21.

7. c.f. M.K.Kalecki, Essays in the Theory of Economic Fluctuations, (London, 1939), and Theory of Economic Dynamics, (London, 1954).

8. c.f. N.Kaldor: "Alternative Theories of Distribution", Review of Economic Studies, No.61, 1955-56; J.Robinson, The Accumulation of Capital, (London: 1956), F.Hahn, "The Share of Wages in National Income", Oxford Economic Papers, June, 1951.

it considers the investment plans to be given and fixed, all the adjustments are made through savings. To answer the question how the investment itself is determined, the theory is silent. Further, "The mechanism of the Widow's cruse..... does not seem to have played any large part in practice in the determination of distributive shares".[9]

It is the factor pricing theory which really takes growth into account by considering the changes in the amounts and the combinations of different factors. A complete theory of income distribution after all must explain how the factor shares "are worked out and altered or maintained overtime, and must depend not on a sequence of independent situations alone, but on the processes of growth by which each situation changes into the next..... factor pricing theory, does have the advantage that it can be applied within a growing economy, in which the amounts of the factors and the methods of production by which they are combined are both changing".[10]

(2) Factor Shares: Some Problems :

In the context of economy as a whole, however, empirical problems related to concepts and measurements are more vital than the interpretation of results in terms of different theories. The estimation of national income by

9. Phelps Brown: Op.cit., p.37.
10. Ibid, p.38.

factor shares itself creates difficulties particularly in a country where the large part of income generated comes from the unorganised sectors like agriculture and unincorporated enterprises.

While explaining a secular rise in labour's share of the U.S. national income, economists give three main reasons to account for such trend:[11] (a) rising proportion of wage and salary earners and the diminishing proportion of small unincorporated enterprises, (b) diminishing importance of agriculture, where labour's share in value added is low and labour's real income is understated, and (c) increasing importance of the government sector which according to present accounting practices, consists solely of employee compensation.

In the absence of the availability of the data according to the concepts conceived by economists, the national income figures are normally divided into wages and salaries, income from property, and income of selfemployed persons. However, these three broad groups of national income are also not free from the conceptual and measurement difficulties. The earnings of unincorporated enterprises, for example, reflect the returns to both capital and labour. And the devices used to separate the two earnings are quite

11. Tibor Scitovsky, Op.cit.,p.20.

arbitrary in nature. The wage share would increase just because some of the selfemployed persons shift to wage-earners group due to say, industrialisation program in the country. "When a farmer comes to town to work in a factory or an independent grocer becomes a hired manager of one unit in a chain, there is a statistical rise in the labour share and a statistical decline in the property share which has no counter-part in the economic theory of distribution proper".[12]

The problem assumes even greater difficulties in a country like India where there is a presence of large unorganised agriculture, trade, and transport sectors, (agriculture and unincorporated enterprises alone account for almost 75 per cent of the total income produced). Further, the required data in agricultural sector are either not available or not so reliable if available.The allocation of mixed income between wages and property in such a situation would also require a "good amount of imputation on indirect bases. The importance of this problem is highlighted by the fact that mixed income still forms as much as 45 per cent or more of the total factor income with

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12. M.Bronfenbrenner: "The Incidence of Collective Bargaining", American Economic Review,May,1954,(Papers and proceedings),p.294. See also, D.Gale Johnson, "The Functional Distribution of Income in the United States, 1850-1952", Review of Economics and Statistics,May, 1954, pp.175-182.

labour income sharing another 30 per cent and only the rest accounting for property income for the country as a whole.".[13]

The increasing importance of the public sector also creates difficulties in the estimation of income by factor shares in India.Since the government output is conceptually assumed to be equivalent to the wage bill, the employee compensation in this sector is almost hundred per cent of the output.

The above difficulties, it should however be noted, do not arise within a fairly homogeneous sector like manufacturing where wages are contractual payments and labour is counted as a distinct class giving a clearcut demarcation of wage income from other types of income. The examination of income distribution in such a sector, however limited in its coverage, does provide a definite precision in the analysis. One can say with a fair degree of confidence whether the labour has been gaining at the expense of property or not.

(3) The present study :

Surprisingly, no attempt has been made to analyse the income share received by factory labour in the light of a growing economy where one of the basic objectives of the

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13. Uma Datta Roy Chaudhary: "Trends in Income Shares in India - 1950-51 to 1964-65" (unpublished paper).

developmental programs is the industrialisation of the country. Out of the total income generated, how much has been received by the workers, what is the tendency of this share overtime, what are the factors which influence this share in different industries and over a period of time, are some of the vital issues which have remained a neglected area of research in India. The present study, therefore, seeks to examine the following hypotheses in relation to the factory labour share:

(i) Economists while analysing the aggregative share with the help of statistical data have generally come to believe that wage incomes as a proportion of total income have been surprisingly constant overtime. In spite of many evidences available against this belief, the alleged constancy of labour share still occupies a prominent place in the literature of economics. The present study attempts to test this hypothesis in the case of organised manufacturing industries in the country.

(ii) Since the overall labour share is a weighted average of individual industry wage shares (weight being the industry share in total value added), the distributional shifts in the relative importance of industries caused by different rates of growth of industries will influence the overall labour share, even if there are no changes found in industry wage shares. Thus, an attempt is made here to isolate and quantify the changes in industry wage shares and changes in industry weights overtime, so as to enable us to test the relative importance of each of the two sources of variations in overall labour share.

(iii) An economic development is always accompanied by a rapid change in capital-intensity either through substitution of capital for labour (given the production functions) or due to application of labour-saving techniques (under new production functions). An increase in the amount of capital relative to labour generally increases the total payments to capital relative to wage bill. We should, therefore, expect the labour share to be negatively related with the capital/labour ratio. The said inverse relationship has been tested by considering both cross-section and time-series studies.

(iv) The change in marginal rate of substitution between labour and capital, caused by say, a change in the relative prices of the two factors, will normally lead to a change in the capital/labour ratio and hence the relative factor shares (depending upon the value of the elasticity of substitution). In other words, the relative factor shares will change with the change in relative factor prices according to whether the elasticity of substitution is greater, equal to, or less than unity.

The study attempts to estimate the values of elasticity of substitution in different industries and test the relationship between factor prices and factor shares.

(v) The high degree of unionism would mean that the workers are in a better position to bargain and hence increase their share in the total income generated. The hypothesis that the labour share and degree of unionism are positively related has been examined both for inter--industry and time-series analysis.

(vi) Skill composition of work force (skill-mix) in different industries is one of the important factors which influences the relative share of workers. The wage-share is normally supposed to be higher in industries where the proportion of skilled workers in total workers is larger than where this proportion is lower. The validity of the relationship is examined for inter-industry data at two points of time.

The study, thus, seeks to examine the various hypotheses on factory labour share, the data for which are derived from the reports of the Census of Manufacturing Industries (CMI) and the Annual Survey of Industries (ASI). The factories covered by the ASI in 1964, accounted for 94.1 per cent of tne total productive capital of all factories of all industries, 83.9 per cent of employment, 83.5 per cent of gross output and 89 per cent of value added by manufacture. The share of the organised manufacturing industries in total economy, although turns out to be 8 per cent of the national income, it should be remembered that it is a very important and growing sector of the economy due to the strategy of rapid industrialisation followed in the country.[14]

(4) <u>Scheme of the Work</u> :

The study has been divided into seven chapters. Chapter II examines the constancy of factory labour share over the period 1953-65, the period for which the required data were available. To test the hypothesis more objectively, the trend coefficients for individual industries as well as for the total of all industries are calculated. Incidentally, the required data which refer to different non-comparable sources, are adjusted so as to make them comparable for the analysis. Comparable industry-wise series of wages to workers, employee compensation (wages, salaries and benefits),

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14. The plan outlay on industry and mining increased from as low as Rs.10.62 crores in 1951-52 to as high as Rs.544.46 crores in 1965-66. As against this the plan outlay on agriculture, which in fact contributes as much as 50 per cent towards national income, increased from Rs.27.29 crores to only Rs.231.04 crores during the same period. The growth of production in the two sectors reveals that the index of industrial production increased to 262 in 1965-66 as against the index of agricultural production of 139 (in 1965-66) taking 1951-52 as the base year. The index of machinery alone showed a rise to 1173 in 1966 in relation to that of 1951 (=100).

value added etc. (otherwise not available so far) are prepared for the present study.

The two sources of variations in overall labour share namely, changes in relative importance of industries and changes in individual industry wage shares are isolated in Chapter III. This has been done with a view to examine the impact of changes in industry-mix on the labour share overtime. Chapter IV discusses the methodology of the estimates of the gross value of fixed capital to be used in the later analysis. The necessity of the adjustments arises due to the fact that the figures of fixed capital as reported in different sources of manufacturing industries unfortunately do not reflect the true value of fixed capital. The value of depreciation is actually meant for income tax purposes and hence does not reflect the true consumption of capital. To overcome this defect, the gross (replacement) values of fixed capital (for the first time in the case of Indian manufacturing industries) have been estimated.

Chapter V attempts to estimate the Douglas type of production functions considering the inter-industry data for 1964, and time-series data for 1946-64 (to measure the technical progress). As compared to earlier Indian studies on the Cobb-Douglas production function, the present study differs in two respects: (i) The values of fixed capital, as noted earlier, are used in terms of gross values rather than book values, and (ii) it is the different categories of capital (and not total capital) which have been considered for capital inputs. This would enable us to assess the relative importance of each of different categories of capital. While fitting the Douglas-type of production function to time-series data, the trend variable is introduced. Application of the Solow model to the relation enables us to measure the technological progress in Indian industries.

Chapter VI examines the constant elasticity of substitution (SMAC)[15] production function fitted to the manufacturing industries for the year 1962 taking regions as the observations. This has been done with a view to estimate the values of elasticity of substitution in different industries, and hence examine the relationship between labour share and relative prices of factors of production.

The determinants of labour share are examined in Chapter VII. This has been done by fitting the multiple regressions considering both cross-section and time-series data. The cross-section analysis refers to the years 1956

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15. Kenneth J. Arrow; Hollis B. Chenery, Bagicha Minhas and Robert M. Solow: "Capital Labor Substitution and Economic Efficiency", Review of Economics and Statistics, August, 1961.

and 1964, while the time-series study relates to the period 1951-1964. The variables examined are: skill composition of work force, capital/labour ratio, labour productivity, wage rate and degree of unionism. The traditional measure of the strength of trade unionism is defined as the union members as a proportion of total workers. However, with a view to consider the actual actions taken by the unions, the measure, in the present study has been modified by taking into account the proportion of man-days lost due to industrial disputes and the proportion of workers involved in industrial disputes.

(5) Main Findings and Conclusion :

The proportion of income accruing to labour class, in fact, reflects the relative importance of labour. Since it represents the proportion of wage cost in total cost, any tendency in the ratio would reveal whether the importance of labour is increasing or decreasing over a period of time. It is in fact, not the wage rate, but the wage bill as a proportion of total cost which is a suitable yardstick to measure the changing cost of an industry.[16] When we examine the trend over a period of 1953-1965, we find a clearcut tendency for the overall labour share to decline over the period.

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16. c.f. Paul E. Sultan: "Unionism and Wage-Income Ratios: 1929-51", Review of Economics and Statistics, February, 1954, p.67.

It may be pointed out here that in the category of labour we have included those workers who are directly involved in the production process (i.e. workers excluding managerial and directoral staff). If we consider all the employees (workers as well as managerial staff), then we find that their share does not show a clearcut declining tendency. However, there is quite a substance in the view that the payments to managerial and directoral staff do not represent pure wages.[17] And, hence for the purposes of later analysis we confine our attention to the group of direct workers only.

The changes in wage share would be mainly due to the following factors: (a) relative changes in profit margins or wage rates made possible say, by monopolistic market conditions or trade union activities, (b) changes in the proportion of 'workers' to total employees, and the skill--composition of work force, and (c) changes in capital/labour ratio accompanied by technological progress. These factors would operate either within an industry over-time or through changes in relative importance of different industries (i.e. industry-mix).

Isolating the industry-mix effects, we find that changes within industry do not significantly account for the changes

17. See, for example, J.T.Dunlop: Wage Determination Under Trade Unions, (New York: Augustus M.Kelley, 1950), p.153.

in overall labour share. In other words, it is not the changes in individual industry labour shares, which are responsible for the decline in overall labour share. The fall has been primarily caused by the changes in relative importance of industries. In the absence of any change in industry weights, the labour share in fact could have remained more or less constant over the period under examination.

Thus, it is the changing industrial structure in favour of more modernised industries which are necessarily characterised by higher capital/labour ratio and lower proportions of workers to total number of employees, which seem to have resulted into a decline in labour share. And this is what is normally expected in the wake of planned economic development.

So far as changes in profit margins are concerned, there would be very little direct evidence to bear upon it, while the worker-employee composition is very much related to the degree of capital intensity. It is, in fact, the capital intensity as reflected in capital/labour ratio and the technical improvements which are crucial factors in explaining the share of labour.

Related to the capital intensity is the problem of factor prices. The Cobb-Douglas production function fitted to the cross-section data reveals that the observed labour share is not statistically different from the estimated share. The labour is paid according to its marginal productivity; the change in the ratio of prices of factors would reflect the change in the ratio of their marginal products,

The changes in the factor prices would affect the labour share depending upon the elasticity of substitution between labour and capital. The estimated values of the elasticity of substitution in different industries for the year 1962 show wide variations ranging from as low as 0.03 to as high as 2.19. The value of the elasticity of substitution more than one, for example, would imply that the rise in wage-rate relative to cost of capital would make the capital/labour ratio to rise more than the rise in marginal rate of substitution between labour and capital. In other words, the relative share of labour would decline with a relative increase in wage rate. The inverse relationship between wage rate and labour share indicate that there has been a decline in the labour share associated with rise in both wage rate and capital/labour ratio over a period of time.

The multiple regression analysis reveals that the capital/labour ratio has been the most significant factor influencing the labour share in different industries.

The capital/labour ratio as expected, is negatively related with the share of labour in all of the cross-section studies. In the case of time-series data, however, the relationship between the two (although moving in the opposite directions) is not found statistically significant. This is so because over time there is found to be substantial technological progress along with the rise in capital/labour ratio.[18] The improvement of technique "is a catch-all for the ways in which given amounts of productive factors, specified in physical or natural units, come to yield a greater product in the course of time - whether through improvements in the physique, health, education and training of the worker; or a corresponding improvement in the quality of management; or the advances of technique realized in new equipment and processes".[19]

Since the index of labour productivity combines the effects of both rise in capital/labour ratio and technical improvements over time, one might as well consider the rise in labour productivity and relate it with labour share, so as to examine the impact of both capital/labour ratio and technical improvements on the share of labour. The labour

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18 Out of the total shift in production function of about 52 per cent, the contribution of technological progress has been found to be as high as 81 per cent in the case of manufacturing industry, see Chapter V.

19 E.H.Phelps Brown: Op.cit.,p.39.

productivity when related with labour share over time, does give a significant (negative) correlation between the two variables.

The degree of unionism is ineffective in explaining the labour share both for inter-industry variations and changes over time. This confirms the earlier findings about the relationship between the two variables in other countries. The skill-mix is found to be an important factor explaining the inter-industry variations in labour share in the year 1956, but not in the year 1964. However, the results for 1964 are not as reliable as those for 1956, because the data used for skill composition of workers in 1964 are derived from a relatively smaller coverage of the firms and that too with gaps in some of the industries, while, those for the year 1956 are derived from a wider coverage of industries and no industry is being left with a gap of data on skill-composition of workers.

To sum-up, the factory labour share in India has been declining particularly after the implementation of the developmental programs. The decline has been largely due to the change in industry-mix over time. The strategic factors influencing the labour share appear to be capital/labour ratio (including technical progress overtime) and skill-composition of work force in different industries. The strength of trade-unionism does not seem to play any role in influencing the labour share both in different industries as well as over time.