CHAPTER ONE

EARLY VIEWS ON PROFIT
The classical economists viewed profits as the income of a distinct social class, the capitalists, who shared the total income of society with its two other classes, labourers and landlords. This tripartite division of total produce, and behaviour of the relative shares during progress of the economy was, however, not studied by all these economists with equal attention. Adam Smith noted the subject but did not analyse it, and Malthus had little to offer in this regard. It was David Ricardo who declared it to be the principal problem in Political Economy. 1 John Stuart Mill also gave the subject greater attention than Smith had given it. These economists also viewed profits as a necessary element in the cost of production of commodities, which they regarded to be the regulator of prices. A uniform rate of profit per cent of capital invested was established in the economy by the competitive process.

As to the nature and source of profits, they held different views. Smith regarded them to be a deduction from the produce of labour. Labour added value to the

value of the materials it worked upon, but the capitalist retained part of the value added as profits on 'stock of materials and wages which he advanced'.

1. Ricardo, on the other hand, regards profits a necessary addition to the cost of production as determined by labour. He certainly did not regard profits to be a deduction from the value produced by labour. But J.S. Mill leaning though more heavily towards the Ricardian view tried to accommodate both these views simultaneously.

2. Malthus struck a new note by relating profits to the productivity of capital. Capital was viewed by these economists as including machines and instruments, raw materials, and the fund out which wages were advanced. Malthus thought that profits were 'only a fair remuneration for that part of the production contributed by the capitalists, estimated exactly in the same way as the contribution of the labourer.'

Despite an earlier remark by Smith that 'the intention of the fixed


capital is to increase the productive power of labour\textsuperscript{1}, the productivity view did not find favour with the followers of Smith and Ricardo.

A distinction was always made between gross profits and the pure or clear\textsuperscript{2} profits. Gross profits included interest, a premium covering risk of loss, and wages of superintendence. These three constituent parts of profits were clearly distinguished by J.S. Mill. The same distinction can, however, be traced back to Smith, Ricardo and other classical economists as well. Profits were necessary to induce capitalists to save and undertake the risks of investment, and for rewarding the labour and trouble involved in supervising production. Ricardo emphasised the element of time for which capital was locked in production. Senior propounded that by abstaining from consumption in order to save, the capitalists made a sacrifice which necessitated a compensation.\textsuperscript{3}

According to Smith the rate of profit per cent on capital is determined by the supply and demand of capital with supply playing the major role. Supply of capital constitutes the demand for labour, while population determines

\begin{itemize}
  \item 1. Adam Smith, op.cit. p. 271.
  \item 2. Ibid., p. 96.
\end{itemize}
the supply of labour. Interaction of the two determines the rate of wages to which the rate of profit is inversely related. As the supply of capital increases there is increasing competition among capitalists for its productive employment with the result that wages rise and profits fall. A rise in wages encourages population growth. As more and more accumulation takes place, opportunities of profitable investment dwindle. Ultimately, there would come a stage when the rate of profit would be so low as to leave no incentive to the capitalists to save and invest further. Once accumulation stopped, population would cease increasing, there would be no further progress, the economy would continue into a long-term equilibrium stationary state.\(^1\)

Despite the fall in the rate of profit, aggregate profits may continue to increase for some time because of the increasing volume of capital. But even aggregate profits must start decreasing as the rate of profit becomes lower and lower and, as a consequence, the process of accumulation slows down. The share of profits in total income is, however, always declining with the progress of the economy. A rising wage rate with an increasing

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1. Smith visualises the possibility of a declining state of society after the stationary state. This would happen in a country where 'the funds destined for the maintenance of labour were sensibly decaying'. As a consequence demand for labour would decrease, wages would fall to a very low level making the condition of labourers really miserable. 'Want, famine, and mortality would immediately prevail in that class, and from thence extend themselves to all the superior classes till the number of inhabitants
population absorbs greater and greater portion of national income. On the other hand landlords, by virtue of their monopoly ownership of land, are able to raise rents as demand for land increases with the increasing accumulation of capital. Thus the profit share is squeezed between a rising wage share and an increasing rent share. It is evident from Smith's analysis that it a falling rate of profit which is the primary phenomenon and occasions the profit share to decline, and not the other way round.

Ricardo's analysis is different, attention being focused on the share rather than the rate. Profits are determined by the produce of the most inferior soil to which the margin of cultivation is extended under the pressure of demand for food. This marginal land yields no rent, and the difference between the total produce and wages accrues to the capitalist farmer as profits. The natural tendency of wages is to remain at the subsistence level. They rise above it only temporarily as increasing accumulation increases the demand for labour. But the higher wages soon encourage population growth, increase the demand for food and necessitate further extension of the margin of cultivation. More inferior soil gives smaller produce and as wages can hardly go below the subsistence level, profits are reduced. All the above-marginal lands produce more and the surplus goes to the landlords as rent. With the progress of the economy, which means greater accumulation and larger population, the demand for agricultural products increases, the margin of
cultivation is extended, the produce at the margin decreases, and as the labourers cannot subsist without a certain level of real wages, less and less of the produce accrues to the capitalists as profits. Ricardo states the same in terms of the increasing labour cost of producing corn — the principal wage good. Wages therefore increase in 'value' as more and more labour is required to produce the means of subsistence. Profits fall with every increase in wages. Profits in the manufacturing industries are determined by profits in the agricultural sector. The cause of a declining profit share and a falling rate of profit is the increasing difficulties of production in agriculture — the operation of the law of diminishing returns. Consequently a greater and greater portion of the total labour of the country is required to produce the necessaries of life for the labourers.

The ratio of this to the total labour of the country is utilized by Ricardo to measure the rate of profit for the economy as a whole.¹ This rate tends to fall during progress as the above ratio must continue to rise. In terms of the produce the decline in profit share is caused by an ever increasing rent share encroaching upon the profit share which is unable to encroach upon an almost stationary wage share.²

¹. David Ricardo: op.cit., p. 31.
². Ibid., pp.73-75.
The advance toward the stationary state is explained by a tapering of accumulation consequent upon the tendency of the rate of profit to fall towards zero. Actually accumulation stops at some positive rate as this rate becomes so low that there is no incentive for further accumulation. Both Smith and Ricardo recognize the improvements in agricultural production which retard the advance towards the stationary state.

J.S. Mill analyzed the 'Influence of the Progress of Industry and Population on Rents, Profits and Wages' at some length. The analysis, which is essentially Ricardian, leads to the conclusion that: 'The economical progress of a society constituted of landlords, capitalists, and labourers, tends to the progressive enrichment of the landlord class; while the cost of the labourer's subsistence tends on the whole to increase, and profits to fall.'

The tendency of the rate of profit to fall is studied separately wherein Mill discusses at some length the 'counter-acting circumstances' which arrest this tendency. Commercial crises destroy part of the existing capital, thus reducing its supply and arresting the fall in profits. Improvements in production have the effect of creating new opportunities for investment, without depressing the rate of profit. Import of cheap goods, specially wage goods, from abroad lowers

1. J.S. Mill. op.cit. vol.II, p.239.
the cost of labour and raises the rate of profit. And
lastly, an overflow of capital into colonies and foreign
countries, where higher profits can be earned, reduces the
pressure of competition at home.

Malthus introduced the consideration of effective
demand into the discussion on the falling tendency of the
rate of profit. Smith had found its explanation in the
increasing supply of capital while the opportunities of its
profitable employment went on shrinking. Ricardo insisted
that the increasing difficulties of agricultural production
were the only cause of this phenomenon. Malthus recognised
the importance of Ricardo's explanation but regarded it to
be the limiting factor only, whereas the relative abundance
of capital was the 'regulatory principle' for variations
in the rate of profit. High profits induce more savings,
greater accumulation and increased production. Overproduction
causes fall in prices and lowers profits as well as wages.
If the capitalists were not to curtail their expenditure on
luxuries and saved only part of their increased profits,
this along with the rentier consumption would ensure higher
'effective demand,' higher profits and higher wages. 2

In Marx's hand the analysis of profits became a
powerful means for exposing the real nature of capitalism.

2. Ibid., pp. 319-325.
The source of profit was value created by labour, which was capable of producing surplus value — value in excess of its own exchange value. The exchange value of labour, that is the rate of wages, remained at the subsistence level. Output per worker was larger, and could be increased further by lengthening the working day and improving the methods of production. Capitalists were able to appropriate this surplus value by virtue of their ownership of the means of production. Profits, rent, and interest were merely subdivisions of surplus value indicating how it was shared by capitalists. There were in reality only two distributive shares: Wages and Profits (Surplus Value).

Unlike Ricardo, Marx did not pay any attention to the law of diminishing returns. In fact, the evidence of technological improvements was too impressive to permit a decisive role for that principle. With the progress of the economy, output per worker increased, and with it increased the discrepancy between produce per worker and his wages, which did not increase with progress. This implied a relative decline in the wage share.

But the rate of profit tended to fall with progress, despite the growth of profits both in aggregate and as a share of the total produce. Marx tried to explain the falling tendency of the rate of profit by the rising proportion of
constant capital, fixed in the form of buildings, machinery and raw materials, in the total capital. This proportion tended to rise with technological improvements. Capitalists were eager to introduce machinery, etc., as it increased the output per man-hour. But surplus value was created by the variable capital, capital expended on paying wages, and its magnitude was directly related to the magnitude of the variable capital. Constant capital only reproduced itself, whereas variable capital re-emerged with surplus value. The rate of profit was calculated by dividing the total surplus value by the total capital, variable as well as constant, taking into consideration their various periods of turnover. Assuming a constant relationship between surplus value \( S \), and variable capital, \( V \), the rate of profit \( r = \frac{S}{C+V} \) would go on declining as \( \frac{C}{C+V} \) went on rising. But the assumption of a constant \( S/V \) in face of improving technology indicated by the increasing proportion of the constant capital \( C \) is untenable. Critics have correctly pointed out, therefore,

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As a rising organic composition of capital is accompanied by increasing labour productivity, a constant rate of surplus value would imply a rise in real wages exactly proportionate to the increase in productivity. This, however, cannot be admitted in the Marxian system, as it militates against the idea of increasing misery and creation of a reserve army with the process of accumulation (pp. 100-101). Sweezy quotes Marx to prove that the assumption of a constant rate of surplus value simultaneously with a rising organic composition of capital is hardly justified in terms of Marx's own theoretical scheme (pp. 101-102).
that the law of the falling rate of profit cannot really be
derived from increasing organic composition of capital. ¹

The scope of this study does not warrant a thorough
examination of the profit theory of Marx or those of the
classical economists. The sketchy survey given above is
expected to serve as a background of later developments.
In Marx's hand the labour theory of value received a
formulation which became both logically untenable and
politically unbearable. The classical tradition had already
crystallised in the form of an empirical cost-of-production
theory and the need to repudiate Marx further consolidated
the orthodoxy in that position. The uneasiness felt in
treating the various items of cost of production — the
labourer's wages, the landlord's rent and the capitalist's
profits — on the same footing was essentially moral. It
was beyond redress so far as the cost-of-production theory
was concerned. Only an entirely new approach could satisfy
the conscience by changing the very context in which the
problem was placed. This is what actually happened.

THE MARGINAL PRODUCTIVITY THEORY

In 1871 appeared the works of Carl Menger and William
Stanley Jevons, followed by the work of Leon Walras in 1874,
which revolutionised economic thinking. Utility and its relation with consumer demand was nothing new; the classical economists were quite familiar with it. The new development was the realisation of the principles of diminishing utility of the successive increments of the commodity consumed, the necessity of equalising the final(marginal) utilities in various lines of consumption for maximising the total utility, and the recognition of the significant relation between the final utility and price.¹ A complete subjective theory of value was the result, rendering the cost-of-production theory and, of course, the labour theory of value, obsolete. For value is 'the importance that individual goods or quantities of goods attain for us because we are conscious of being dependent on command of them for the satisfaction of our needs'.² Agents of production, such as land and labour, themselves derived their value from the value of the goods they helped to produce. Thus the focus of attention in economic theory shifted from costs to utility, from supply to demand and from production to consumption.

Menger, whose contribution is the most outstanding, as also the least mathematical, demonstrated how the valuation of goods of higher order — as he characterised the agents

¹ The Chief early anticipator of the theory was H Von Thünen whose Der Isolierte Staat appeared in 1826.
of production — was based on the same principle of subjective importance, though indirectly. Then the same principle of marginal contribution governed distribution which explained the valuation of consumers' goods; 'the value of goods of higher order is always and without exception determined by the prospective value of the goods of lower order in whose production they serve'.¹ This process Menger calls Zurechnung (imputation), though he does not fully work it out. As regards the question whether this method of valuation of productive agents exhausts the total product, it is not raised by Menger.²

Implications of the marginalist revolution for distribution theory were fully worked out by Menger's two great disciples, Fredrick Von Wieser and Eugen Von Bhöm Bawerk. Bhöm Bawerk developed the theory of imputation, but distinguished between the share imputed to a factor and the share actually 'distributed' to it. While the latter is based on the former it is seldom the same in magnitude because of the actual circumstances leading to a unique evaluation relevant to the specific set of facts.³ This dichotomy between imputation and distribution barred

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3. Ibid. p.191.
his way to the exhaustion of the product problem.¹ This problem was taken up by Wieser who did not see any such dichotomy. Wieser fully worked out the process of imputation and postulated two conditions for its application:

1) that the value of the productive agents is equal to the value of their product, and

2) that the productive agents combine in fixed proportions which vary between industries.

He uses a set of simultaneous equations for measuring the productive contribution of each factor.² Thus the exhaustion of the product is assumed right away instead of being looked upon as a problem on whose solution depended the completion of the marginal productivity theory. The same position is taken by Walras who also visualised fixed production coefficients.³ The unrealistic nature of this assumption was, however, realised by others who adopted a different approach.

The exhaustion of the product problem was first explicitly raised and solved by P.H. Wicksteed in An Essay on the Coordination of the Laws of Distribution published

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1. Böhm Bawerk Developed a unique theory of profit — defined as the divergence of the actual from the normal rate of interest — whose study is not relevant for our purposes.

2. Ibid. p. 166.

in 1894. Assumption: homogeneous production functions of the first degree he demonstrated mathematically that factorial rewards according to their marginal productivities just exhausted the product.

The contribution of any one factor to the product, its marginal efficiency, is determined by 'the effect upon the product of a small increment of that factor, all the others remaining constant'. If \( P \) is the product and \( K \) is capital then \( \frac{\partial P}{\partial K} \) is the marginal efficiency of capital and \( K \), \( \frac{\partial P}{\partial K} \) is the share of capital in the total product. It is held self evident that under perfect competition the rate of payment to a factor will conform to its contribution to the product.

The crucial problem is to demonstrate that if each factor is paid at the rate of its marginal productivity the sum of these payments exactly exhausts the total product. If \( P = F(A, B, C, \ldots) \) where \( P \) is the product and \( A, B, C, \ldots \) are the various factors of production, then it must be shown that

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P = \frac{\partial P}{\partial A} \cdot A + \frac{\partial P}{\partial B} \cdot B + \frac{\partial P}{\partial C} \cdot C + \ldots
\]

2. P.H. Wicksteed in Coordination quoted by Stigler; Production and Distribution Theories, p. 325.
Assuming homogeneous and linear production function, i.e., \( P = F(A, B, C, \ldots) \) and \( \Delta P = F(AA, BB, CC, \ldots) \) the desired conclusions follow immediately. This is the so called Euler Theorem.¹

Wicksteed does not utilise the Euler theorem directly.² Taking two factors land and labour (supplemented by capital), he demonstrates through graphic analysis that rent as a residual equals the reward of land determined by the marginal productivity principle, and that the wages of labour determined according to marginal productivity can be shown to appear as rent. The reward of the factor taken to be constant appears as a residual but when the same factor is treated as a variable the same reward appears as determined by marginal productivity. Graphic treatment is supplemented by numerical examples in the Commonsense.³

The analysis is extended to the case of more than two factors. It is assumed that factors of production are substitutable for one another at the margin.

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2. Ibid., also see Lecture XII in the 'Selected Syllabus of Extension Lecture Courses' included in 1933 edition of Wicksteed's Commonsense of Political Economy.
Within limits, the most apparently unlike of these factors of production can be substituted for each other at the margin and so brought to a common measure of marginal serviceableness-in-production.¹

Now the productive contribution of each factor can be measured 'in one and the same unit' and the share of each can be determined' if we divide the proceeds by the sum of these units'.² Entrepreneurs' urge for maximisation and free competition will ensure that prices of the factors of production equal their marginal products.³ Departure from competitive conditions, e.g., existence of monopoly, will result in the entrepreneurs earning something more than their distributive shares in the product as measured by the 'marginal industrial efficiency'.⁴

After Wicksteed's presentation of the theory a number of contributors developed it on the Continent. Barone offered a mathematical proof of the exhaustion of the product problem which is not based on the Euler Theorem. But the theory was later withdrawn at the behest of Pareto.⁵

². Ibid. p. 369.  
³. Ibid., p. 371.  
⁴. Ibid., Vol.II(Syllabus of Lecture Courses)p.862  
As Pareto's Criticism has also influenced Wicksteed's later views on the subject it may be noted in passing. He criticised the assumed independence of the various factors of production, and the claim that they were fully substitutable for one another. Some factors, he stressed, have a unique functional relationship to output or to certain other factors, regardless of the amounts of the remaining factors. This being the case, factors of production were not perfectly substitutable for one another. For the same reason it was not possible to measure the separate marginal productivities of the factors employed. He rejected the admissibility of a homogeneous and linear production function and insisted on explicit consideration of the scale of production in dealing with distribution of the product.¹

Though a number of the leading economists of the period participated in the controversy, the chief defender of Wicksteed against his critics was Knut Wicksell who 'rediscovered' the marginal productivity theory around the year 1900 and then realised the significance of Wicksteed's work to which contemporaries had not given due consideration.² Wicksell's Über Wert, Kapital Und Rente, published in 1893 contained, though implicitly, a mathematical formulation of the general marginal productivity theory. It was fully developed and made explicit in a long article 'On the Marginal

¹ For a critical examination of Pareto's criticism refer to Stigler, op.cit. pp. 364-368.
Productivity as a Basis for Economic Distribution'(1900). 1
In this and his later formulations and elaborations, one of
the chief tasks which Wicksell performed was to harmonise
Wicksteed's marginal productivity theory with Böhm-Bawerk's
theory of interest.

Regarding the exhaustion of the product problem,
Wicksell shows that either it has to be assumed that the
production function is linear and homogeneous or 'that all
productive enterprises have already reached the limit beyond
which a further increase in the scale of production will no
longer yield any advantage'. 2 Elaborating upon the first
alternative the following production function is suggested
as an explicit solution:

\[ P = A^\alpha B^\beta \text{ where } \alpha + \beta = 1 \]

Wicksell recognises that this approach has very
restricted applicability. Hence the other alternative.
Constant returns to scale are visualised as a transitional
phase in the growth of a firm, beyond which lies the phase
of increasing costs (decreasing returns). This is suggested

1. Reprinted in 'Selected Papers on Economic Theory' by K.

George Routledge and Sons Ltd., London, 1934, see also
Selected Papers, pp.98-100.
as the more generally applicable condition. Under constant returns to scale, and given perfect substitutionality, increase in any productive service increased the product proportionately and perfect competition ensured the distribution of the incremental product to the incremental service.

Marshall does not accept the marginal productivity theory completely and whole-heartedly. The theory, he thinks, over-emphasises the demand side, whereas the fact is that 'supply and demand exert coordinate influences' and 'neither side has a claim to predominance any more than has either blade of a pair of scissors'. Wages equal net product of labour, but it is not correct to say that they are governed by it, because the net product is itself determined by supply and the general relations of demand and supply. Then it is not possible to separate and measure the marginal net product of a labourer. According to Marshall the theory represented only the demand side of the theory of distribution.

In the short run however, when the supply of a factor is given, the demand side does play the decisive role. Thus

2. Ibid., p. 442
3. Ibid., pp. 429, 430, 446, 447.
4. Ibid., p. 447
5. Ibid., pp. 446-447.
6. Ibid., p. 447
'in each ease the income tends to equal the value of the marginal net product of the agent: in each ease this is governed for the time by the total stock of the agent and the need the other agents have of its aid'.

Stigler regards this as an outright acceptance of the marginal productivity theory. Yet the important qualifications to which Marshall subjects the theory can hardly be ignored.

Marshall states the 'exhaustion of the product' principle in unambiguous terms. The argument is similar to that of Wicksteed though he has not been referred to.

As to profits Marshall refers to the 'fundamental unity underlying the causes that determine normal profits and normal wages'. For, as in case of wages, profits are also regulated by the forces of supply and demand. Gross profits cannot long diverge from 'the normal supply price of the capital needed, added to the normal supply price of the ability and the energy required for managing the business, and lastly the normal supply price of that organisation by which the appropriate business ability and the required capital are brought together'.

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1. Ibid., p. 444.
4. Ibid., p. 517.
5. Ibid., pp. 503, also p. 505.
In America John Bates Clark worked out the marginal utility and the marginal productivity theories. His theory of distribution was complete and general in application. The exhaustion of the product problem was solved by diagrammatically proving that rent as a residue equalled rent as determined by marginal productivity. This method could be applied to all competitive returns, Clark showed. The Euler theorem, or any mathematical formulae for that matter, were not utilised. He also emphasised cost-price equality to prove the same proposition. His exposition will come in for further consideration in the next chapter.

Some of the proponents of the marginal productivity theory held that the share of the entrepreneur, the organiser of production, is also determined by his 'marginal industrial efficiency'. Though a detailed examination of this concept of the marginal efficiency of the entrepreneur was often lacking, the tendency was to interpret it in terms of business ability. Walras, of course, saw no role for the entrepreneur in the general equilibrium so that profits did not exist in that system. Wicksell held that 'with the firm at its optimum size the entrepreneur no longer receives a profit.' But this idea was not acceptable to others like

Edgeworth who contended that it was simply inconceivable for the organiser of production to remain unrewarded.¹ Marshall also did not recognise a no-profit state. But the reason in his case was, firstly that he always dealt with profits in the business accounting sense, not in the pure sense as Walras did, and secondly that he was pre-occupied with the real world non-static economy.²

The important point is that all these economists rejected the idea of profits in a competitive economy as a residual income, whether profits were interpreted as a functional income or in the pure sense. In the competitive system all distributive shares were determined by the marginal productivities of the agents of production, and this distribution just exhausted the total product without leaving any surplus or causing any deficit.

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¹ Vide Stigler, op.cit., p.128.