Chapter I: Interrelation Between the Level and Distribution of Income: The Missing Equation
The aim of the study is to examine the interrelation between class distribution of income and effective demand in a macroeconomic framework.¹ This question remains relatively unexplored in current mainstream theory, though addressed to an extent by two distinct, but separate, intellectual traditions originating in Classical economics on the one hand, and in Keynesian economics on the other. We argue that the question of how income distribution affects the level of effective demand and in turn how the formation of effective demand itself affects the distribution of income is not answered exclusively by either the theories of Classical economists like Ricardo, Malthus and Marx or the theories of Kalecki, Keynes and their successors, although the latter tradition succeeded in defining clearly the notion of effective demand.

Among the Classical economists, Malthus was perhaps the first to identify the connection between income distribution and effective demand. He failed, however, to work out the analytical connections satisfactorily since an adequate theory of effective demand was not available.² In contrast, Ricardo’s main concern was to determine the laws, which regulate the distribution of income among the different classes. In establishing these laws he provides a theory of how total income is distributed between Land Rent, Profits and Wages. As is well

¹ Income distribution can be considered from various angles e.g., class or functional distribution into categories like wages, profits and rent or personal distribution e.g., by decile groups, and occupational distribution. The focus of this study is to discuss the link between class distribution i.e. profit and wage and effective demand in a macroeconomic context.

² In a communication to Ricardo, he explains this connection

“From the want of a proper distribution of the actual produce adequate motives are not furnished to continued production... the grand question is whether it (actual produce) is distributed in such a manner between the different parties concerned as to occasion the most effective demand for future produce”

[Malthus, 1821] This is reprinted in Ricardo (1952), pp. 9-10
known, Ricardo defines land rent in terms of extensive diminishing returns in agriculture due to the scarcity of land. In other words, the magnitude of rent is determined by the difference between the average and marginal product of labour and other inputs applied in fixed proportion to land of diminishing quality. Since capital and labour are combined in fixed proportions, the division of total product-less-rent between capital and labour became problematic for him. To circumvent this, he took recourse to a subsistence theory of wages, and derived total profits as residual, which is equal to the total product-less-rent minus the wage bill. The composite input of capital and labour is (strictly speaking) an input of fixed-and-working capital and labour. With fixed capital made to disappear by the proviso that implements wear out in one year and that variable capital consists solely of annual advances to labour, the rate of profit is obtained by the ratio of total profits to wage bill. In his analysis, the process of accumulation proceeds by extending the margin of cultivation to less and less fertile land through reinvestment of profit. This process is driven steadily towards a stationary state with capitalists gradually losing command over the investible surplus on account of dwindling profit due to rising rent. He argued that the rate of profit falls to a minimum acceptable level or even equals zero due to the barrier of diminishing returns to land. Hence the process of accumulation tends towards the stationary state due to distributional conflict among the major social classes, especially the conflict between the spendthrift landlords who consume all their rent and the capitalist who invest a substantial part of their profit.³

³ See Kaldor (1954-55), Pasinetti (1980). Also see Bhaduri and Harris (1987), where the authors
In terms of a theory of distribution, Ricardo corroborates the laws that govern the distribution of income in an economy where the composite input of labour and capital is applied in a fixed proportion to less and less fertile land as the margin of cultivation is extended in the process of accumulation. From our point of view, the central problem with his model lies in the dynamics of the wage fund vis-à-vis the process of accumulation. On the one hand, at a given real wage the size of the available wage fund determines both the amount of labour that can be employed and the margin of cultivation, which in turn determines the rent, and the wage bill, with profit as a residual. On the other hand, the change in size of the wage fund is governed entirely by the profit accruing to the capitalists, i.e. a part of profit (saving) is reinvested as the wage fund for the next period. Hence the size of the wage fund and the margin of cultivation, which are simultaneously given in an exogenous manner, together specify the level of output (total surplus). Given the total surplus, its distribution between land rent, wages and profits can be determined on the basis of the marginal productivity theory and the postulate of subsistence wage. In other words, Ricardo's theory shows us how an exogenously given level of total surplus or total output is distributed among different social classes and the logic, which drives it towards the stationary state. In essence it becomes a theory focused, not on the determination of the level of output but its distribution in so far as the pre-existing wage fund at each point determines both the margin of cultivation and output, while changes in the wage fund is governed by profits accruing to the capitalists. In this sense, the Ricardian framework is inadequate to deal with the interrelation between distribution of income and the

argue against convergence to the stationary state by showing chaotic movements.
determination of total output, particularly if investment is not governed entirely by saving out of profits, but has an independent role.4

Marx, on the other hand, seems to have come closer to analysing specifically this problem of interrelation. And yet, his analysis does not appear to be sufficiently coherent on this issue. For Marx, surplus comes because capitalists pay workers not for their labour but for their labour-power as wage advance.5 Thus the ratio of this surplus over the variable capital, namely relative surplus value per worker, is the crucial variable in his theory of distribution. However, as far as the aggregate surplus value is concerned, Marx discusses it in terms of the solution to the transformation problem. But the fundamental postulate involved in the transformation of values into prices is the assumption that total surplus equals total profits i.e. \[
\sum \text{Surplus} = \sum \text{Profit}
\]

This suggests that Marx’s theory is more concerned with the distribution of the total surplus6, than its formation, which can be defined only when the ‘scale’ in terms of the number of workers is presumed. Marx spells out more clearly the conditions under which the relative surplus value per worker increases but he

4 See Robinson, J (1965, pp.64).
5 Labour power- the capacity to do useful work, which adds value to commodities. The use value of labour power is its capacity to produce value. It is this labour power that workers sell to capitalists for a money wage. The category of labour power arises in the labour theory of value in the explanation of the source of Surplus value. The labour theory of value reveals that the source of surplus value in the system of capitalist production is unpaid labour of workers i.e., on average a worker in a day (or hour, or any unit of labour time) produces a certain money value, but the wage he receives is the equivalent of only a fraction of its value. Thus the worker is paid an equivalent for only a part (necessary to sustain labour power) of the working day, the value produced in the other, unpaid part, is the surplus value.
6 To quote Marx, “The sum of the profits for all the different spheres of production must accordingly be equal to the sum of surplus values, and the sum of prices of production for the total social product must be equal to the sum of its values”, Marx ([1867], 1981, p.273)
seems less clear in defining how the total surplus value is formed and the relation between the latter vis-à-vis the former. To put it differently, the surplus of value or product per worker is explained, but not the number of workers employed. Thus the theory of employment or the theory of the level of output is left unsettled in Marx.

To put it baldly, in both the models of Ricardo and Marx the scale of output, of which the total surplus forms a part, is not analysed adequately. This limitation in the classical literature stems from the fact that they had at best an unsatisfactory theory of the determination of total output. If output is assumed to be determined by the exogenous wage fund (advanced as wage bill) as in Ricardo, it becomes a framework for analysis where the problem of determination of output is considered only from the supply side; if one approaches it through Marxian value theory, the question of what determines total value is again left unanswered, quite apart from the problem of transformation of value into price.

The notion of effective demand and the role it plays in the determination of income was an elusive concept for the Classical economists. Its analytical formulation was achieved after the publication of Keynes’s General Theory, and

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7 See for instance, Sraffa (1960). The essence of his model may be distilled from the arguments in part I in which Sraffa deal with single-product industries and circulating capital. There Sraffa demonstrates that the approach to the analysis of Value and Distribution adopted by Ricardo and Marx is logically consistent. Taking the size and composition of output and the conditions of reproduction and the real wage as given, he shows that
(i) In an economy that is capable of reproducing itself the relative prices are determined by the conditions of production.
(ii) In an economy that is capable of producing surplus over and above the needs of reproduction, relative prices are determined by conditions of production of basic commodities and the manner in which the surplus is distributed.
If in the latter case, the surplus is distributed as rate of profit, then the data i.e., the given level of output, determines relative prices and the rate of profit. In this sense Sraffa’s model, as in the case of the Classical models, seems to be concerned with the distribution rather than the determination of the level of output or the interrelation.
Kalecki’s parallel but independent work. This event led to a renewed interest into the question of interrelation between income distribution and effective demand in the immediate post-war years. Several analytical models were presented by different authors, including Kalecki himself, Steindl and subsequently others, purporting to capture this interrelation. Nevertheless even after achieving analytical clarity on the notion of effective demand, these models seem to suffer from the obverse problem of the Classical theories sketched earlier. On the whole these theories explain more satisfactorily, the determination of the level of output than how it is distributed. Thus neither the Classical theories nor the post-war theories (beginning with Kalecki) could resolve the issue of the interrelation between income distribution and the level of output. To put it more formally from our point of view, both these intellectual traditions provide systems which are so to say, ‘one equation short’, although the equation is not only different but exactly the obverse of one another in the two cases. In short, the level of total output is an exogenous variable to the system supply-determined by the ‘initial condition’ of the wage advanced in the case of classical theories, whereas it is the distribution of income which becomes the exogenous variable in the case of the post-war models inspired by the theoretical approach of Keynes and Kalecki.

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9 The following chapter elaborates at greater length this proposition.
10 Though it is mentioned earlier (see fn.7) that Sraffa’s model is similar to that of Classical models, from the point of view of interrelation between income distribution and the level of output, the degree of freedom he works with in his model is different from the Classicals and that is done by dropping the assumption of exogenously given real wage rate or the profit rate.