# MARXIAN THEORY OF PROFITS: SOME ISSDES

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**M. THIMMA REDDY**

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**SCHOOL OF SOCIAL SCIENCES**
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This is to certify that I, **M. Thimma Reddy,** have carried out the research embodied in the present thesis: **MARXIAN THEORY OF PROFITS: SOME ISSUES** for the full period prescribed under the Ordinances of the University.

I declare to the best of my knowledge that no part of this thesis was earlier submitted for the award of research degree of any University.

M. Thimma Reddy
M. Thimma Reddy

Head 2·12-94
Department of Economics

2-12-94.

Dean
School of Social Sciences

Supervisor 2/12/94

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# CONTENTS

# CHAPTER - 1

## INTRODUCTION

Marx's Capital has come to hold an unique position in the intellectual world as well as in the thinking of the masses. It has to be kept in mind that Marx's Capital's path to the present status is not one spread with flowers. It was exposed to many ups and downs, both because of persistent attacks of the critics, and because of the protagonists' inability to grapple with the theoretical niceties of the Capital, and their resultant fumbling. In the earlier stages itself the bourgeois economists thought of extinguishing Marx's Capital by their ' conspiracy of silence', i.e., by not acknowledging the fact of its presence, much less its inferences. Instead, it gained its own momentum. It had become a "guide to action' to the emerging new force of `proletariat'. The rallying of the proletariat and other oppressed people around the Capital turned it into a spectre to those that chose to dismiss it out of sight, and continued to haunt them since then. Russia's October Revolution of 1917 gave it a shape of concrete reality. In the course of time, a sizable number of countries added their names to the list of countries avowing to follow the precepts of Marx. Added to this, the failure of mainstream economists to account for the plight of the underdeveloped countries made many economists from this part of the world search for their roots in Marx's Capital. The crisis proneness of the developed capitalist countries often forced the mainstream economists to examine once again the foundations of their theory and acknowledge, albeit grudgingly, the strength of Marx's economic analysis.[1]

Since the late 1960's there has been a marked growth in the interest shown in the Marxian economics[2]. Yet it did not mark the 'termination' of the hold of bourgeois economic theory. It is still going strong either in one form or the other. At the same time, the treatment meted out to Marx and his contributions also changed to a great extent over the period. He had grown from benign indifference and contemptuous dismissals in foot--notes, from one who 'understood Ricardo mischievously', an `underworld heretic', a `minor post-Ricardian'[3], to increased respect, to one who 'also' made contribution to the understanding of capitalist economy (Joan Robinson, 1966.p.22). Many factors led to these changed perceptions. The great depression of the 1930's threw neo-classical paradigm out of gear. Later, Keynes' attacks proved to the bourgeois economists that all was not well with neo-classical theory. As he did not develop any alternative theory of value and distribution, soon he was reduced to a special case of neo-classicals' (Lewis. 1977.p.401). The discussion of growth pioneered by Roy Harrod (1948) and Domar (1947) based on the Keynesian theory also weakened the foundations of the neo-classical theory. As the works of Keynes, Harrod, Domar and others raised doubts about the foundations of the neo-classical economics, Michael Kalecki's (1977) independent explanation of the great depression and the dynamics of capitalist economy based on Marx's scheme increased the interest in Marx's writings.

The failure of Keynesian theory to deal with the economic crises of the 1960's and the 1970's, and a seminal contribution of Sraffa (1960) further contributed to the upsurge of interest in Marxian economics. Besides these, political events like student and youth unrest in Europe and America during the 1960's, the Vietnam War and the Cuban revolution also kindled interest in Marxian economic analysis.

While on the one hand, this marked growth in interest shown in Marxian economic analysis is welcomed, on the other hand a note of caution is sounded about the dangers of dilution of Marx's approach: "By arbitrarily wrenching out particular bits of Marx's analysis, lumping these together with analyses of particular bourgeois economists various eclectic theoretical tendencies are produced which claim to supersede Marx."[4]

## The Issue:

Name and fame in its wake also brought its own controversies and problems. There surfaced many 'Readings', 'Rereadings', 'Reconstructions', 'Understandings' of Marxian economics. On the one hand, there were attempts to set the 'logic' 'right', to purge the 'inconsistencies', on the other hand there were also attempts to keep the 'purity' of Marxian economics. This upsurge of interest in Marxian economics took the form of incessant debate. Considering the vastness and the multifaceted nature of the literature that the debate has thrown up, it is not possible to examine all the issues and streams of analyses involved.

Consequently, here, only three streams of attempts to reorient Marxian economics are examined. They are: the Sraffian analysis spearheaded by Steedman and others; the Analytical Marxism being propagated Py Roemer and his supporters; and the von Neumann approach pioneered by Morishima. Opposed to these there are also Fine, Laurence Harris, Weeks, Laibman, Anwar Shaik, Itoh and others who marshalled all their strength to keep at bay the intrusion of 'alien' elements into the Marxian analysis.

Marx's enquiries into the laws of motion of capitalist economy, for the major part, revolve round the examination of different aspects of the phenomenon of profits. It captures the fundamental features of the capitalist economy. The recent forays, into the Marxian economics invariably attempted to come to grips with issues related to profits, like the source of profits, the determination/formation of the rate of profit, the trend of the rate of profit; the latter aspect taking the nomenclature of 'the falling rate of profit debate'. The present research work has the aim of examining these three streams with the theory of profit as the central issue.

## Structure of the Work:

The present study is devided into five chapters. In the first Chapter, besides a brief description of the three streams of analyses: Sraffian, Analytical Marxist, and von Neumann, an attempt is made to examine the methodological issues pertaining to the present study, particularly the place of the dialectical method. Also in this chapter historical specificity of categories pertaining to the cpitalist mode of production and Marx's theory of value are discussed. In the second Chapter the issue of the source of profit is examined. In this Marx's analysis of the uniqueness of labour-power and the critics' opposition to it is examined. In this chapter the question of redundancy of Marx's value analysis in analysing the source of profit is also examined. The issue of determination of the rate of profit is analysed in the third Chapter. In this chapter the question of primacy and inconsistency of Marx's analysis as raised by the critics is discussed. In the fourth Chapter the tendency of rate of profit to fall is discussed. Finally, in the fifth Chapter a summary of the work is presented.

## Sraffian Approach:

Sraffa's well-known work Production of Commodities by Means of Commodities, which appeared in 1960 as a 'prelude to a critique of economic theory[1], became the fountain head of an attack on neo-classical analysis. Consequently, it marked the revival and rehabilitation of the Classical tradition. It also led to the growth of interest in Marxian economics (Meek, 1961; Dobb, 1972). At the same time, some economists questioned the logical validity of certain key concepts of Marxian economics, like labour theory of value. (e.g., Steedman, 1981a; Lippi, 1979; Hodgson, 1982b; Bose, 1980). Reflecting this trend, Steedman says that Sraffa's book "had a quite precise purpose, indicated by its sub-title, Prelude to a Critique of Economic Theory. That purpose was to lay the foundation for the criticism of marginalist theories of wages, profits, rents and prices, a critique which has now been carried out successfully. . . The relation between wages, profit, prices and conditions of production, to which Sraffa drew attention so sharply, were quickly seen to provide a foundation not only for the criticism of marginalist theory but also for the simple, definitive solution of certain issues which had long been debated by Marxists" (1981a.p.13).

Those who thus began to reexamine the fundamentals of the Marxian economics on the basis of Sraffa's work began to be referred to as neo-Ricardians or Sraffians.[5] Hereafter they will be referred to as Sraffians. Their main attack was directed to Marx's labor theory of value which they termed as obstructing the development of Marxian analysis. To quote Steedman, "It can scarcely be overemphasized that the project of providing a materialist account of capitalist societies is dependent on Marx's value magnitude analysis only in the negative sense that continued adherence to the latter is a major fetter on the development of the former" (1981a.p.207).

It seems that Sraffa himself did not intend to use his formulations to attack Marx's concepts. Sraffa was said to eye with suspicion, those who intended to alter the basic concepts of Marxian economic analysis. Robinson says, "Piero [Sraffa] has always stuck close to pure unadulterated Marx and regards my amendments with suspicion" (1979.p.285). Goodwin writes, "his [Sraffa] one book contains no substantive reference to Marx; its conclusion can either be regarded as fatally destructive to the Marxian cannon, or alternatively as a devastating attack on orthodox economics as a prelude to a restructuring of Marxian theory," and further adds in the footnote, "The latter was my own view. In pursuit of it, I once spent an evening with him with the express purpose of getting him to admit that he began the book with some such aim. However, he resolutely and repeatedly denied it" (1986.p.203). Utsa Patnaik (1991) also mentions Krishna Bharadwaj as saying that Sraffa did not consider his analysis as superceding Marx's work. Nevertheless, Sraffians as a separate stream in Marxian economic analysis has come to stay.

## Analytical Marxism

Another stream of criticism of traditional Marxian economic analysis that argued in support of the compatibility of the neo-classical tools with Marx's economic analysis is being called Analytical Marxism. This analysis is also referred to as Rational choice Marxism.

The origin of this stream can be traced to the regular group meetings of like-minded people, who included among others John Roemer, Jon Elster and G.A.Cohen, which began in 1979 as reported by Elster (1985,p.XIV). The emphasis on rational choice, micro-foundations and methodological individualism brought this group together. An important outcome of this groups' deliberations, in the words of Elster, is "the sense in which we felt able to call ourselves Marxists has undergone a change over the years... some kind of unstated consensus has emerged" (Elster,1985,p.XIV). Important products of this groups' work to be mentioned are two books: 1) Roemer's (1982b) General Theory of Exploitation and Classes, and 2) Elster's (1985) Making Sense of Marx. In fact Elster describes his book as a product of 'almost' collective work (ibid.p.XV). As an earlist work in this tradition one can mention G.A.Cohen's (1978) Marx's Theory of History: A Defense.

Regarding the genesis and basis of Analytical Marxism, Roemer writes, "During the past decade, what now appears as a new species in social theory has been forming: analytically sophisticated Marxism. Its practitioners are largely inspired by Marxian questions, which they pursue with contemporary tools of logic, mathematics, and model building. Their methodological posture is conventional. These writers are, self consciously products of both the Marxian and non-Marxian tradition" (1986b, p.1). Roemer explains that unabashed commitment to the necessity for abstraction, search for foundations and non-dogmatic approach differentiate Analytical Marxism from conventional Marxism. These lead them to rely on 'schematising, simplifying and modelling'.

In spite of their rigorous and modern analysis, Analytical Marxists have a lingering doubt as to whether their work can be called Marxist. Roemer has this to say, "But why should this kind of work be called Marxist? I am not sure that it should: but the label does convey at least that certain fundamental insights are viewed as coming from Marx" (1986b,p.2). He also change over the years... some kind of unstated consensus has emerged" (Elster,1985,p.XIV). Important products of this groups' work to be mentioned are two books: 1) Roemer's (1982b) General Theory of Exploitation and Classes, and 2) Elster's (1985) Making Sense of Marx. In fact Elster describes his book as a product of 'almost' collective work (ibid.p.XV). As an earlist work in this tradition one can mention G.A.Cohen's (1978) Marx's Theory of History: A Defense.

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In spite of their rigorous and modern analysis, Analytical Marxists have a lingering doubt as to whether their work can be called Marxist. Roemer has this to say, "But why should this kind of work be called Marxist? I am not sure that it should: but the label does convey at least that certain fundamental insights are viewed as coming from Marx" (1986b,p.2). He also writes, "the lines drawn between contemporary analytical Marxism and contemporary left-liberal political philosophy are fuzzy" (1986b, p.199-200). They come to this stage as they consider many elements of Marx's analysis like dialectical materialism, most important part of historical materialism: theory of production forces and relations of production, labour theory of value, and exploitation of labour-power as 'dead'.

Another book, a collection of essays, edited by Terence Ball and Thomas Farr under the title After Marx (1984) can also be described as a work representing this group. Others who can be called as members of this group, and who were also mentioned by the above said authors as their collaborators are: Pranab Bardhan, Robert Brenner, Adam Prezeworski, Phillippe van Parijs, and Robert Van der Veen. Hereafter this group will be reffered to as Analytical Marxists.

## von Neumann's Approach:

The third stream of analysis that found currency among Marxian economists is related to von Neumann's analysis. This school of analysis is pioneered by Morishima (1973). Though it did not develop as a separate school similar to the above two schools, still it exercised considerable influence. Morishima argues in favour of combining the analysis of von Neumann with Marx's analysis. This contribution is based on his contention that the phenomenon of prices and profits cannot be explained within the parameters of Marx's analysis in the presence of fixed capital, joint-products, different techniques and process of production for the production of the same commodity. For this, he argues that, von Neumann's treatment of fixed capital as a special case of joint-products, and price-cost of production inequalities are well suited analytical tools. He writes, "One of the conclusions of this book is that Marx's economics can acquire a citizenship in contemporary economic theory by detaching it from its root, the labour theory of value, and grafting it into the von Neumann stock so as to produce the Marx - von Neumann flower "(1973.p.194). Morishima, along with Catephores, attempts to show that von Neumann's analysis is nearer to Marx's examination of the different aspects of commodity production (Morishima and Catephores,1978.p.24-29). Alternatively this will also be referred to as Morishima's approach.

Opposition to Marx's Method:

Given the brief description of the three streams, we attempt here to examine their approach towards Marx's method. All those who intended to reformulate Marxian economics as noted above in the name of modernity and rigour, and those who wanted to completely supplant it with theories quite opposed to it, have one similarity: they abhorred dialectics. They intended to keep the `Hegelian stuff at bay. They are of the opinion that dialectics can achieve nothing that cannot be done by the formal, analytical method. Dialectics is a redundant exercise replete with anomalies. For them, the exercise highlighting the contradictions of the present society with the help of dialectics amounts to a spurious exercise.

Sraffians in general inherited Joan Robinson's abhorrence towards the 'Hegelian stuff' and kept dialectics at a distance. In fact, Hodgson has all praise for the formal logic while he castigated the dialectical method because it allows one to contradict oneself. He said, "The cost of abandoning Sraffa's work is nothing less than the cost of abandoning logical consistency. Perhaps some will argue that we must reject formal logic and adopt 'dialectics'. Presumably 'dialectical logic' allows one to contradict oneself! In fact, the inevitable result of abandoning formal logic for the purposes of theoretical exposition is to descend to pure nonsense" (Hodgson, 1977.p.91).

Among those, that were sympathetic with the moral undertones of Marx's writings but opposed Marx's method, Joan Robinson was a notable economist. To her, Marx's whole attempt at understanding capitalist economy through dialectics and the labour theory of value appeared as a metaphysical exercise. In her opinion, Marx's analysis was like a cocoon with circular reasoning; an exercise in 'ideological' propagation where causation could hardly be seen. Keeping in mind Marx's writings, she had commented, "what then are the criteria of an ideological proposition, as opposed to a scientific one? First, if an ideological proposition is tested in a logical manner, it either dissolves into a completely meaningless noise or turns out to be a circular argument" (1962.p.8). In her opinion Marx's method was devoid of any scientific basis.

Robinson had intended to test Marx's analysis in the light of modern developments. For this purpose, she brought in Popper's falsification. She had commented, "The hallmark of a metaphysical proposition is that it is not capable of being tested... It can never be proved wrong, for it will roll out of every argument on its own circularity; it claims to be true by definition of its own terms. It purports to say something about real life; but we can learn nothing from it. Adopting Professor Popper's criteria for propositions that belong to the empirical sciences that they are capable of being falsified by evidence, it is not a scientific proposition" (1962.p.9). She argues that as Marx's conclusions cannot be tested empirically they are bound to stay in the realm of metaphysics only.

Marx's labour theory of value had been examined with this perspective by Joan Robinson. She could not find any argument in Marx's analysis of value, in her opinion to account for value "by labour time is mere assertion". She also said, "But it is a hypothesis that would be a waste of time to test, for we know in advance, and Marx's also knows that it is not accurate" (1962.p.38). But, what to Marx appears to be a contradiction between essence and appearance becomes for Robinson, in a way, an irreconcilable element. In her opinion, the theory "was simply an orthodox dogma", and "the whole argument appeared to be metaphysical". She failed to recognize that the logic Marx employed: 'dialectics' could not be captured by the terms of formal analytical logic. So when she applies the latter method what she finds naturally is an amusing inarch of words. At the same time, Robinson had recognized that even metaphysical ideas had some place in psychological and social issues. Here, in her opinion, metaphysical propositions helped to express a point of view and formulate feelings which were a guide to action and they provided a quarry from which hypotheses could be drawn (Robinson,1962.p.9). However, Robinson had not extended this liberal treatment to Marx.

Notwithstanding all this, she even recognizes some scientific elements in Marx, saying that as a scientific method it offers the basis for an approach to the analysis of capitalism. "Marx learned from Ricardo the trick of setting up what we now call a model-stating assumptions and drawing the conclusions. He backed up his dogma about the value of labour-power with an analytical argument" (Robinson,1962.p.39).

But even these specks of scientific analysis disappear because of the ideology, "What is all the fuss about? Does not any reasonable theory of relative prices come to much the same thing? Certainly it does if it is reasonable; the dispute was not, and is not, on the plane of reason. It is the ideological overtones that cause all trouble" (Robinson,1962.p.42).

In the Sraffian garb, Steedman had continued Robinson's crusade against Marx's analysis and method, particularly Marx's value analysis, which he thought, was hampering fruitful materialist analysis of **the** capitalist society. He found the same circularity in the value analysis. He commented, "it will involve no reference to Marx's value magnitudes, which are mere derivatives of the things to be explained" (Steedman,1981a,p. 207). In his analysis Steedman also stressed the role of physical analysis and objective data.

Hodgson considers that to set aside Sraffa's work is equivalent to neglecting logical consistency. He also argues that to resort to dialectics is to contradict oneself, meaning that dialectics gives rise to contradictory analysis. Like Robinson and Steedman, Hodgson also seems to have a lingering hope in Popperian analysis. He says, "A crucial difference with scientific Marxism lies in the method of validation of the essence", and "the system of theoretical concepts must, somehow, be validated as scientific" (1974.p.376).

Regarding the necessity of empirical evidence to validate the theoretical concepts, Hodgson further notes, "But the dangers of theoretical arbitrariness exist for Marxism as well. The adherents of Marx's solution to the transformation problem have found themselves supporting a theoretical definition of prices of production and rate of profit that has no contact with empirical concrete, and no external means of scientific validation... But some external validation must exist, otherwise the accusation of arbitrariness must stick" (1974.p.379).

His reliance on formal, non-contradictory analysis appears when he lays stress on a simultaneous equation approach to the solution of transformation problem. Consequently, Marx's approach appears to him to be arbitrary. For scientific validation also, he considers, formal logical exercises are as productive as the concrete empirical data. He says, "The art of external verification that must be employed need not exclusively, or even primarily consist of checking with empirical data. In fact, Bortkievicz solution is scientifically validated without any appeal to simple facts and figures on prices and profits" (Hodgson, 1974,p.379). From this it is clear that, in the opinion of Hodgson, an appeal either to hard facts or to formal logical consistency can settle the issue. Certainly dialectics has no place here.

Hodgson attributed many of the shortcomings in Marxian analysis to the influence of Hegel: "This epistemological distortion has done immense harm to Marxism. We argue that it has resulted in a virtual supremacy of a Hegelian, rationalistic type of Marxism, which has no contact with empirical data and real developments in the modern capitalist economy" (1974.p.373). When he termed it as Hegelian analysis what he meant was that the analysis exclusively delt with the domain of consciousness. But Marx steers clear of idealist side of Hegel and takes the kernel of dialectical analysis (Marx, 1954, p.29). Hodgson, without taking cognizance of objective aspect of Hegel's dialectical analysis, had stepped out to characterise the whole thinking as idealist by calling it as Hegelian.

Analytical Marxists are even more strident in their opposition to the dialectical method. They rely on axiomatic methods and for them formal logic is the only way to solution. They essentially use mathematical models in the tradition of neo-classical general equilibrium to state their assumptions, to build their arguments and to draw the necessary inferences. They used these mathematical models as the only tools to fight ambiguity in analysis as well as in presentation. What was apparent from their stand besides their stress on mathematical models and formal method was their opposition to the dialectical method. In their view it was this Hegelian method that led Marx astray. In dialectics, they had seen only contradictions. They had argued that formal logic was adequate to deal with problems that were said to be exclusive concern of dialectics. They even went to the extent of saying that there was nothing like Marxist method. Roemer had this to say, "I do not think there is a specific form of Marxist logic or explanation... Dialectical logic is based on several propositions which may have a certain inductive appearance, but are far from rules of inference... In Marxian social science, dialectics is often used to justify a lazy kind of teleological reasoning" (1985.p.1439). Similarly, Elster had claimed, "In each of the more interesting interpretations, the dialectical method can be stated in ordinary `analytical' language, thus offering no brief of those who believe in a radical divide between the two models of reasoning" (1985.p.37). Elster also argued the need to separate Marx's propositions and their analysis from their methodological underpinnings: "The central insights of Marx are so valuable that we do him and us a disservice were we to accept en bloc the methodology in which they were embedded" (1985,p.5).

The differences between dialectical and formal logic, Elster had argued, were not as unbridgeable as made out by many supporters of Marx's analysis. As such he also did not like to abide by any distinction between formal and dialectical methods. He believed that the most important occurrences of the term in the writings of Marx lend themselves to an interpretation in terms of ordinary, everyday logic. (Elster,1978, p.65-6).

It was the meaning of `contradiction' that bothered Elster. He said, "the idea of `real' contradiction in the literal sense is a case of pathetic fallacy, ascribing to reality features that characterize our thinking about reality or our attitude tov/ards it. . . from the fact that a theory ascribes contradictory features to the real world, we may draw some conclusions about theory but not about reality" (1978.p.68). This amounts to saying that real world phenomena are non-contradictory and use of dialectics, as a method that takes contradictions into account consciously, will not help in unravelling reality.

Elster followed Popper's footsteps to describe the futility of analysis of contradictions: "from a set of propositions from which two contradictory statements can be derived, any proposition whatsoever also follows." (1978.p.69). While trying to see whether dialectics implies that an adequate description of reality must contain self-contradictory propositions or statements, he explained that it was not possible to be selectively self-contradictory, and that the smallest fissure in a theory would make it crumble altogether.

Though he appears to salvage some respect for dialectics when he said, "the real contradiction in this sense... are closely linked to process of change; partly because they are themselves a variety of change and partly because they generate a movement of change in the direction of consistency", Elster, at the same time, makes his stand clear, "of course, I don't think I have found the correct use of the term 'real contradiction', or that I have unravelled the hidden secret of dialectics: there are no such animals to be found or unravelled" (1978.p.70). The analysis of contradictions as a part of dialectics appears to, Elster, to be a source of confusion (1985.p.43).

An attempt was also made by Elster to examine dialectics as used by Marx. In this, they appeared to him more to be exercises in fallacy of composition or counterfinality. (Elster,1985,p.45-48). Elster said, "notion of social contradiction has the theoretical function of identifying causes of instability and change, not of locating symmetry violations." (1985.p.48). What Marx attempted, with the help of dialectics, was to highlight contradictions of the capitalist accumulation and its crisis proneness. But Elster could see in all these only the fallacy of composition and symmetry violations in Marx's theory.

Thus, in the opinion of Analytical Marxists the dialectical method had represented wasted efforts, as its circular reasoning leads to the conclusion which one had already decided to reach. This method being vacuous can only leave one in confusion. As such, they feel, there is no reason to bank upon this method.

Popper's criticism of dialectical method seems to run through all the writings noted above. In fact, it is his crusade which is reflected in the present attack on Marx's economic theory from those who ostensibly intend to remodel it on the basis of modern and rigorous methods. But the fact, that for the criticism of dialectics they still depend on Popper's work that surfaced half century ago, shows that their effort is not all that modern. But they do not hesitate to smear those who want to stick to unalloyed Marxism as dogmatic, following their master who writes, "Thus Marxism has remained for decades in dogmatic attitude, repeating even the same arguments against its opponents which were originally used by its founders" (Popper,1940.p.426).

For Popper it is the trial and error that stands for scientific method. Through trial and error, he says, "we may secure, if we are lucky, the survival of the fittest theory by way of elimination" (1940.p.405). Some time later people like Hodgson (1980, p.260-262) would use the same process of elimination as a drawback of Marx's method in value analysis. Popper further says, "This struggle of ideologies, which is, obviously, explicable in trial and error method, seems to be a characteristic feature wherever we find anything like a development of human thought" (1940.p.403). Marx explains the struggle between opposing ideologies on the basis of dialectical method, wherein, in the social development different classes struggle with each other to achieve the supremacy of their class rule. This class struggle is reflected in the ideologies of respective classes. But such explanation is not acceptable to Popper, though trial and error with its element of luck is. The materialist basis of the argument appears to him as exaggerated: "Nevertheless I personally think that Marx's economism [which can be read as materialism] - his emphasize on the economic background as being ultimate basis of any sort of development - is exaggerated" (Popper,1940.p.423).

Besides this, the contradictions as part of dialectical explanation was not agreeable to Popper. He had considered that any acknowledgement of the existence of contradictions would lead to a complete breakdown of science, a stop to all scientific activity. In his opinion, this theory was dangerously misleading. Popper was also not ready to admit dialectics as a part of logic (Popper,1940 p.407-411). He said: "Any development whatsoever will fit the dialectical scheme: the dialectician need never be afraid of any refutation of forthcoming experience" (1940,p 424). This is one thing that finds an echo in the writings of all those mentioned previously - from Joan Robinson to John Elster.

Though Morishima did not make detailed examination of Marx's dialectical method, he also considered it as being esoteric. Morishima looks at Marx's contributions to economic anaysis from the view point of 'modern advanced economic theory'. Morishima, though says that one should recognise Marx's contributions to the development of modern, dynamic theory of general economic equilibrium, by assessing Marx's economic analysis 'according to the standards of contemporary economic theory' comes to the conclusion that `Marx has to lose much, even his most precious properties, inorder to be legitimised by orthodox economists'. It can be said that Morishima examines Marx's economic analysis by seperating it from Marx's dialectical method. In doing so he adopts the formal method common to, what he calls, the modern, advanced, scientific economic theory. As a corollary to it Morishima states that Marx's concepts 'will never be able to acquire full citizenship in scientific economics' (1973,p.1-5).

**In defense of Marx's method;**

If Roemer could say that there was nothing like Marxist method, others like Carver could say that Marx did not really have one method that was applicable to all problems in social analysis and that his method depended or changed according to the problem he took on, and that new problems would mean new methods. In this dialectics is only one of these methods. He named this as `eclecticism' (Carver,1984.p.276-8). Similarly Hodgson comments, "This rather eclectic approach may be rejected by some Marxists, at least those of fundamentalist habits. However, it is clear from Marxian scholarship that he himself drew a great deal from more important economists of his time and before."[6] (1982b.p.10).

Eclecticism, where 'on-the-one-hand, on-the-other-hand' reasoning rules, and of which dialectics can never be part or a special case, cannot grasp determining aspects of the relation. Dialectics through examining the unity of opposites, contradictory aspects of concrete phenomenon that propel change, tries to get at the essence of the matter. Eclectic approach by employing different methods for different problems will emaciate the efforts to reach a meaningful understanding of the social phenomena because of its neglect of inner connections among different problems. As Lenin comments, "the substitution of eclecticism for dialectic is the easiest way of deceiving the people. It gives an illusory satisfaction; it seems to take into account all sides of the process, all trends of development, all the conflicting influences, and so forth, where as in reality it provides no integral and revolutionary conception of the process of social development at all."[7] Marx's concrete analysis of concrete conditions where elements of both induction and deduction appear can in no way be characterized as eclectic. (Engels 1954.p.226).

As opposed to those (Hodgson, 1974, p.377; and Colletti, 1972 and 1975) who argue that any association of Marx with Hegel would lead to an idealist influence and that dialectic as developed by Hegel was inherently idealist, it can be shown that dialectics as a method is not incompatible with materialism, in fact materialism provides the necessary ground for it, and that Marx was eminently successful in basing dialectics on materialist base.

Unlike the case made by Colletti and Hodgson, Hegel though emphasized the primacy of idea, he at the same time recognized the independent and objective existence of matter outside the subjective mind of the individual, empirical reality independent of the human mind. Hegel also recognizes the historical nature of the emergence of philosophical ideas: "What ever happens, every individual is the child of his time; so philosophy is its own time apprehend in thoughts. It is just as absurd to fancy that a philosophy can transcend its contemporary world as it is to fancy that an individual can overleap his own age, jump over Rhodes" (1952.p.11).

Hegel recognises the existence of matter independent of ideas and the interrelation between the two thus: "it is quite inept to say that logic abstracts from all <u>content</u>, that it teaches only rules of thinking without references to <u>what</u> is thought or without being able to consider its nature. For as thinking and the rules of thinking are supposed to be the subject matter of logic, these directly constitute its peculiar content in them, logic has that second constituent, a matter, about the nature of which it is concerned" (1975.p.44). Once it is noted that matter exists independently of ideas and that matter as object of thought and form of thinking are interconnected and inseparable it can be said that a possibility is presented for erecting dialectics on materialist basis.

Though Marx recognizes Hegel as being the first to develop dialectics in its complete form, which appeared in its embryonic form in Aristotle, he at the same time recognizes the tensions created in Hegel's dialectical analysis as it is based on idealist premises and attempts to divest dialectics of its idealist mask and retrieve the rational kernel from the mystified form (1954, p.29). As a corollary of this effect Marx abandons Hegel's conception of real as the product of thought concentrating itself, probing its own depths, and unfolding itself out of itself and brings in the issue of practice. This should also provide an answer to those who express apprehension that empirical evidence is neglected. Marx comments, "The question whether objective truth can be attributed to human thinking is not a question of theory but is a practical question. In practice man must prove the truth, that is, the reality and power, the this-sidedness of his thinking. The dispute over the reality or non-reality of thinking which is isolated from practice is a purely scholastic question" (Marx and Engels, 1969.p.13).

Marx also castigates the primacy of, that Hegel attributes to, ideas in explaining history. In order to comprehend history Marx examines the real process of production, the way individuals produce the material condition of production, the way relations of production are reproduced and finally the spiritual products: religion, philosophy, ethics and morals, state, judiciary are produced on the basis of the reproduction of material conditions of production and relation of production. (Marx and Engels, 1975.p.36).

Hegel attempted to apprehend objectively the conditions of social reality: contradictions that characterize social relations in the bourgeois society. The problem arose when Hegel attempted to contrive "a resolution to real social contradictions by transforming them into mere ideas, categories which then achieve their reconciliation through the postulated Absolute Spirit, Idea, or Knowledge" (Kieve, 1983.p.50). This attempt of Hegel to find metaphysical solutions to these concrete contradictions severely weakened his system of analysis because of the irreconcilable contradiction between idealism and materialism. Only Marx could, through developing dialectics on materialist basis and detaching it from Hegel's objective idealism, overcome the impediments that befell Hegel.

As expressed by Kieve, "It is precisely the validity of the dialectical method as it arises out of and is reapplied to social reality which denies the fundamental tenet of objective idealism. Rather than facilitating the annihilation of the finite by the infinite through a dialectical deus ex mechina, it is the objective existence of irreconcilable contradictions and oppositions in the actual social world that denies their resolution in the metaphysics of idealism. The only way the resolution can be achieved is by abstracting away the very determinations, mediations, content and concreteness that establish the contradictions in the first place. Hegel's 'solution' succeeds only at the expense of suspending the dialectic itself" (1983.p.50).

The limitations of Hegel's analysis prepared the ground for its negation and its transcendence and replacement by Marx's materialist dialectics. The idealist underpinnings of Hegelian analysis deprived it of the ability to capture social dynamics as objectively as possible. Its proclivity to derive the materially concrete from abstract categories made it impossible for metaphysical ontology to be in consonance with concrete reality. Hegel instead of recognizing this contradiction between his idealist analysis and concrete reality and basing dialectics on materialist analysis, ends up denying concrete social reality.

The irreconcilable contradictions that appear in Hegel's analysis between concrete dynamic movements that are characteristic of dialectics and idealist premises of his analysis prepared the ground for Marx's materialist dialectic. Hegel's inability to transcend the ontological duality of the finite world of social reality and the realm of the transcendental infinite absolute provides the basis for the transformation of the form of dialectics into a materialist Marxist formulation. The failure of Hegel to comprehend the concrete social reality and the dialectical nature of its dynamic mechanism led to the formation of materialist dialectics in the hands of Marx who consciously took into account the social and material basis of dialectics.

The transformation of dialectics from an idealist basis into materialist one in the hands of Marx was an imminent outcome of the material conditions of the capitalist society. It helped to underline the contradictions inherent to the capitalist system and its transient nature, contrary to bourgeois ideologues' belief in its immutability. In this process Marx's materialist dialectics helped to break new ground for the formulation of a new materialist epistemology and advancement of human knowledge on these premises[8].

It was alleged that dependence on Hegalian dialectics invariably result in divorcing from the facts (Hodgson, 1974,p.373,377). A look at Marx's works holds out that he, while relying on dialetical method, in no way neglected the facts. But he took the facts in their relation to the existing social relations. This becomes clear when Marx (1973,p.100-1) explained that instead of starting from chaotic, undifferentiated and ahistorical conception such as 'the population' as a whole he started from the simplest determination of the whole, the concrete universal representing the particular mode of production.

This is even more clearly evident from the first volume of capital which Marx started with the examination of the commodities: "The wealth of those societies in which the capitalist mode of production prevails, presents itself as 'an immense accumulation of commodities', its unit being a single commodity. Our investigation must therefore begin with the analysis of the commodity." (1954,p.43). In the capitalist society commodity represents the simplest determination of the bourgeois relations of production.[9]

Marx's project was to analyze the laws of motion of modern society, i.e., capitalist society. It involved the analysis of dynamic conditions. The need was to study the passing of one condition into the other, examination of the opposite forces which inhabit apparently non-contradictory situations, the impact of the contradictions of these opposite forces. These elements could not be analysed within the confines of the formal, analytical method which frowned upon any acknowledgement of the contradictory forces. But because of the widespread influence of the formal methods, dialectics as the method of study of contradictory forces within the phenomenon has come to be neglected. As ftegel remarked, "wherever there is movement, wherever there is life, wherever anything is carried into effect in the actual world there dialectic is at work" (1975, p.116). Formal, analytical method will not be in a position to comprehend the dynamic element in the economic phonomena. Formal method can, at best, capture only the static situations. Neo-classical economics, the propagators of this method within the sphere of Marxian economics: Analytical Marxists, stood as an example to the fact that their methods which they themselves boasted as formal could only capture the static conditions. But, at the same time Analytical Marxists had the audacity to claim that a theory which had failed in static analysis could not be expected to do well in dynamic analysis. They, as mentioned earlier, argued that Marx's dialectical analysis was capable neither in static nor in dynamic analysis. The Cambridge controversies on capital theory exhibited that even in static analysis neo-classical economics fails miserably (Harcourt, 1972). When the same criticism was brought to the notice of Roemer, champion of Analytical Marxists, he tried to skirt the issue (1985, p.1442).

The very success of Marxian economics in the face of insurmountable hurdles lay in its capacity to examine the dynamics of the capitalist economy, which was not the case in regard to mainstream economic theory. This also showed that formal analytical methods cannot cover the area traversed by Marx's dialectical analysis.

Dialectics is the science of universal interconnections. In its examination of the process of change, interconnections and interrelations among the things are taken into consideration. Dialectics is also considered as the science studying the laws of motion, laws of motion of nature, society, as well as thought. Its important conception is that change is the fundamental feature of all concrete things. It considers that the physical world as well as society are in incessant motion. In this unceasing motion, because of the mutual interpenetration of polar opposites, transformation not just in quantity but in quality, is taking place. Because of this qualitative transformation - negation of the negation- `old' is always giving into `new', new in the fundamental sense. At the same time as Sean Sayers recognizes, to say only that motion is being in different places at different times is not to describe motion itself, but only the effects of motion. Also in order to get movement into the picture, according to dialectics, we must recognize both that the body is at that place and that, in the same instant it is also ceasing to be so. For our description needs to capture the fact not only that the body is where it is, but also that it is moving-hence in a process of change and becoming (Sayers.S, 1991,p.87). What dialectics tries to capture is the process of change from old to new, the process of transformation. Dialectics underlines the transitory nature of the phenomenon, and attempts to comprehend the way the things pass into its opposite.

In its analysis of motion and change dialectics stands in quite contrast to the formal method and its principles of identity, excluded middle and non-contradiction. The principle of identity states that A=A. In other words A cannot be simultaneously equal and unequal to A. As opposed to this in reality, concrete identity includes difference, change. Identity contains difference within itself and identity with itself requires difference from everything else as its complement. (Engels 1954,p.215). This identity, where everything is equal to itself, holds everything as permanent and cannot capture reality. In reality everything is in incessant motion and change, and at every moment a thing is both identical with itself and becoming distinct from itself as it passes into its opposite. In contrast to formal logic's principle of identity, dialectics attempts to capture this motion and change as unity of opposites, a unity of contradictory moments.

The principle of excluded middle. $A \vee \sim A$, states that something is either A or not A. For a theory aiming to capture reality, this either or principle cannot be adequate. In concrete reality which is intrincically contradictory because of the interpenetration of opposites in all phenomena, it is not possible to treat anything in the rigid either A or non-A framework. Regarding the principle of excluded middle Hegel comments thus: "Instead of speaking by the maxim of Excluded Middle (which is the maxim of abstract understanding) we should rather say: Everything is opposite. Neither in heaven nor in earth, neither in the world of mind nor of nature, is there anywhere such an abstract `either-or' as the understanding maintains. Whatever exists is concrete, with difference and opposition in itself... Contradiction is the very moving principle of the world; and it is ridiculous to say that contradictions is unthinkable" (1975,p.223).

Similarly Engels remarks: "For a stage in the outlook on nature where all differences become merged in intermediate steps, and all opposites pass into one another through intermediate links, the old metaphysical method of thought [by which Engels means formal method] no longer suffices. Dialectics which likewise knows no hard and fast lines, no conditional, universally valid "either-or" and which bridges the fixed metaphysical differences, and besides "either-or" recognizes also in the right place "both this-and that" and reconciles the opposites, is the sole method of thought appropriate in the highest degree to this stage" (1954, p.212-3).

The principle of non-contradiction, $\sim(A \& \sim A)$, states that a proposition cannot be true and false at the same time. This does not reflect reality, as contradiction is inherent to change and change cannot be visualized without the contradictions, unity of opposites, in the things. Concepts that are compatible with these changes also reproduce these contradictions. In deliniating such contradictions, Ilyenkov comments: "Any utterance expressing the very moment, the very act of transition (and not the <u>result</u> of this transition only) inevitably contains an explicit or implicit contradiction, and a contradiction 'at one and the same time' (that is, during transition, at the moment of transition) and 'in one and the same relation'[1] (precisely with regard to the transition of the opposites into each other)" (1982, p.251).

These principles of formal method are adequate only for everyday use where 'small dimensions' or brief periods of time - depending upon the nature of object in question- are involved. These principles are of use where overriding concern is consistency.

Appreciation of the role of the analysis of contradictions has become target of attack on Marx's method. As noted above dialectics concerns itself in explaining motion and change. Motion and change cannot be explained without taking into account the contradictions that are inherent in the things and that propel their motion and change. In other words, notion of contradiction is fundamental to the dialectical method in explaining change. In this vein dialectics is also described as philosophy of contradiction. As unity of opposites, contradictions remain the nucleus of dialectics. As a basic principle of it, dialectics, unlike the formal method, instead of concealing contradictions quite explicitly explains the presence of contradictions and the way these contradictions are resolved giving shape to developed forms.

Without taking cognizance of the contradictory nature inherent in different phenomena, change cannot even be conceived. When we say that a body is in motion, it means that the body is <u>both</u> at the place <u>and</u> at the same time it is also not at the place. As Hegel explains:" Something moves not because at one moment it is here and at another there, but because at one and the same moment it is here and not here" (1975, p.440).

Eclectic concept of 'either-or', a body being in different places at different instances cannot capture process of motion, but only its result. Only dialectical concept **of "both...and..."** can comprehend motion, its inherent contradictory nature. Dialectics as the method of study of change not only takes the cognizance of contradictions, but also strives to examine the way these contradictions are resolved in reality.

The contradictions that are inherent in nature and society are reproduced in thought. In this regard Engels writes: "Dialectics, so-called objective dialectics, prevails throughout nature, and so-called subjective dialectics, dialectical thought, is only the reflection of the motion through opposites which asserts itself everywhere in nature, and which by the continual conflict of the opposites and their passage into one another, or into higher forms, determines the life of nature" (1954, p.211).

Contradictions in thought appear as a necessary reflection of the contradictions that are inherent in nature, and which thought tries to grasp. As Ilyenkov explains dialectics considers contradiction as the necessary logical form of development of thought, of the transition from ignorance to knowledge, from an abstract reflection of the object in thought to an even more concrete reflection of it. Further contradiction unambiguously reveals itself as a form in which thought about things moves always and everywhere (1982,p.234).

Dialectics considered the contradictions that had arisen in definitions and concepts as a necessary manifestation of the contradictions intrinsic to natural and social phenomena. As a result of this dialectics did not attempt to conceal these contradictions, but had tried to examine their resolution.

Unlike dialectics, formal method considered the contradictions that emerge in the process of comprehension of the phenomenon as purely subjective and tries to resolve them by redefining or refining definitions and concepts.

Formal method had treated contradictions in thought as resulting from mistakes made by man in reasoning, defects of man's cognitive ability, from inadequate development of concepts and definitions. In order to overcome such contradictions formal method resorts to respecifying and changing terms and expressions. In this process it, instead of overcoming these contradictions, had led to further piling up of contradictions. As opposed to this instead of forbidding contradictions, dialectics takes cognizance of these as reflecting reality. Only this conscious recognition of contradictions in thought as a manifestation of contradictions inherent in nature and society and further examination of its resolution can take the theory forward. Any effort at concealing this fact of contradiction, like formal method, will hamper the further advance of the theory.

Contradictions, according to the dialectical method, instead of being impediments to the process of thought facilities it by finding intermediary links through which the contradictions are resolved in reality. This is achieved through concrete analysis of concrete conditions, through tracing the process in which the contradictions are resolved in the movement of the objective reality. Instead of rejecting contradictions in thought reflecting the contradictions in the objective reality, purposive attempt is made to trace out the entire chain of mediating links which help to relate the mutually exclusive propositions, and in the process further enriching the conception of the objective reality.

The reproduction in thought of the contradiction inherent in things appears as a contradiction between the universal and the particular. A universal law comes into insolvable contradiction with the particular form of its own manifestation. It is to be noted that any attempt to directly correlate the universal law and the empirically universal element cannot bear fruit, as the contradiction between the two mirrors the contradiction that exists in reality. As an example to this the contradiction between the law of value and the average rate of profit can be mentioned.[10] Regarding this Ilyenkov comments, "a universal law (the law of value) stands in the relation of mutually exclusive contradiction to the empirically universal form of its own manifestation, with the law of average rate of profit. It is impossible to bring them into agreement exactly because such an agreement does not exist in the economic reality itself" (1982, p.242). What is to be done is to trace out different levels of intermediate linkages between the law of value and the rate of profit. The formal method attempts to relate the two directly and lands in insolvable contradictions.

Mere piling up of all sorts of contradictions is not the aim of dialectics. Nor does dialectics deny the role of the formal method as far as formal consistency is concerned. Checking and counter-checking of the analysis is useful in doing away with the anomalies and fallacies that might have crept in as a result of some mistakes in developing the idea. In formal deductive argument contradictions and inconsistencies are not tolerated. Though in formal consistency and validity formal method cannot be neglected, its limitations also cannot be sidelined. Once the real nature of the world is considered, it becomes clear that formal method cannot find a place in understanding it.

**Historical Specificity:**

The dialectical method brings to light the historical specificity or transient nature of laws governing society. The dialectical method not only helps to define the laws governing a form of society, it also helps in deriving the laws underlying the change from one form of society to another. This method leads to visualizing the contradictions that lay behind the dynamics and breakup of a social formation, and the formation of another form of society. Marx says, "it regards every historically developed social form as in fluid movement, and therefore takes into account its transient nature not less than its momentary existence." (1954,p.29). Marx's method leaves its imprint of historical specificity on the categories that are meant to capture the social reality. Marx writes: "Even the most abstract categories, despite their validity- precisely because of their abstractness- for all epochs, are nevertheless, in the specific character of this abstraction, themselves like wise a product of historic relations, and posess their full validity only for and within these relations" (1973,p.105). To do away with the dialectical method is to discard the historical specificity of the categories and universalize their applicability.

If one tries to examine the capitalist mode of production without the dialectical method, like Adam Smith and Ricardo, one is prone to universalize the categories to all modes of production which in fact are applicable only to that mode of production. Engels argues, "It is, however, self-evident that a theory which views modern capitalist production as a mere passing stage in the economic history of mankind, must make use of terms different from those habitual to writers, who look upon that form of production as imperishable and final" (Preface to Marx [1954],p.16). The peculiarity of the Sraffians and Analytical Marxists is that on the one hand they underline the historical specificity of capitalist mode of production, and on the other they embrace the analytical method which had become the hall mark of those who look upon capitalism as `imperishable and final'. They took the transient nature of the capitalist mode of production, as explained by Marx, for granted and it does not logically flow from their analytical method.

**Methodological Individualism**

The study of Analytical Marxists' writings show that they are fascinated by neo-classical tools of analysis, its `modernity', and `rigour'. They accordingly, increasingly depend on these tools for their analysis. As far as method is concerned they are of the opinion that Marxian economics has much to learn from neo-classical economics and the employment of neo-classical tools will go a long way in enriching Marxian economics. van Parijs argues, "Marxist economics can only be sound if it accepts neo-classical method" (1983.120). In their view, the neo-classical model of the competitive economy corresponds to Marx's notion of equilibrium, and it is also an appropriate place for Marxian economists to start the study of idealised capitalism. For them neo-classical world presents a plausible world (Roemer, 1985, p.1439).

Their affinity with neo-classical method appears largely to depend on the role they attribute to the individual in explaining social phenomena. Accordingly, they go a step further and argue that Marxian economics should be based on micro-foundations. This argument for micro-foundations is also the argument for methodological individualism. According to methodological individualism the social phenomena should be explained in terms of individuals' actions. In the words of Roemer, "The microfoundation approach consists in deriving the aggregate behavior of the economy as a consequence of the actions of individuals" (1981, p.7). Elster describes it as, "all social phenomena-their structure and their change- are in principle explicable in ways that only involve individuals - their properties, their goals, their beliefs and their actions" (1985, p.5). In their analysis, individuals, instead of classes, become 'atoms' of the system to be examined. Unlike Marx's analysis, where individual is determined by social conditions and he/she in turn act on those conditions, in methodological individualism, individuals' desires and beliefs generate the aggregate out come. In fact the individuals become the 'centre of the story'. Their endeavour is to locate the mechanism at the individual level. The emphasis on individual actions is a result of their contentions that traditional Marxian analysis is plagued with functionalism, which, they argue, is not in consonance with social sciences. They implant intentional explanation in its place. This intentional explanation facilities the explanation of macrophenomenon with the help of individual actions. They are of the opinion that without a firm knowledge about the mechanisms that operate at the individual level the grand Marxist claims about macro structures and long term change are condemned to remain at the level of speculation and that Marxists must provide explanations of mechanisms at the micro level. Explanations of underlying mechanisms could provide spectacles required to highlight the relevant causal structure. The understanding of explanation mechanism is enhanced when one moves from macro to micro level. Analytical Marxists are of the opinion that methodological individualism instead of being antithetical to Marxism, with its capacity to explain mechanism at individual level, will help to improve the concepts of Marxian analysis from mere postulates to theorems (Elster, 1982a, 1982b; Parijs, 1983; Roemer, 1978, 1982a, 1985).

For those who were striving to build alternative methods to the present dominating mainstream economic theory i.e. neo-classical analysis, any attempt to bring into their midst the same method had appeared suspicious. It appeared quite natural that, in such circumstances Analytical Marxists' attempt to employ neo-classical methods, and their praise for, arguments in favour of it had confronted suspicious and antagonistic treatment. To Anderson and Thompson (1988) Analytical Marxists' attempts appear as an uncalled for craving for legitimacy, and as an attempt to find respectable places in academic institutions pervaded by the outlook opposed to Marxism. Khalid Nadvi (1985, p. 1479) is of the opinion that the marriage between Marxian Economics and neo-classical general equilibrium models is doomed to failure due to the quite distinct approach and contradictory aims of the two disciplines.

Sraffians who are also trying to rewrite Marxian economics sans labour theory of value, and whose mathematical models are at times used by Analytical Marxists, do not look kindly towards them because of their dependence on and support for neo-classical theory. Sraffians are apprehensive that the treatment of Analytical Marxists helps to bring to life the neo-classical structures which they are trying to bury. Sraffians are of the opinion that Analytical Marxists, like neo-classical, bestow primacy on individual preferences and relegate the impact of the socio-economic environment to a secondary position. If methodological individualists accept the impact of society, Hodgson argues, "the doctrine is open to critique, as a result of its theoretically aribitary adoption of individualism" (1986, p.222). Similarly Arun Bose (1985, p.2225) criticises Analytical Marxists' 'blanket approval' of neo-classical general equilibrium models and their treatment of capital as a factor of production, and questions Roemer's toleration of the neo-classical bourgeois world as a "possible[1] one along with the Marxian one. In his view the rational-choice approach represented a 'false[1] world view. He also considers that the Analytical Marxixts' efforts lead to undoing what the Sraffians have done over a period of two decades in their strugle against the neo-classical paradigm (1985, p.2225-2226).

The Neo-classical paradigm and its method of analysis represented an attempt to support and legitimise existing capitalist exploitation. It is used to attack any attempt to create an alternative theoretical system to question the present inequitable dispensation. Its total neglect of institutional forces, social impact and historical aspects of development made those who are searching for answers in the material condition of society but not in the behavior of atomised individuals quite skeptical at the introduction of neo-classical methods into Marxian economics (Bose, 1985; Kieve, 1986). Marxian economics, which stands as a culmination of treatment of individual as a product of social conditions and historical development, cannot be expected to accommodate neo-classical analysis which treats individuals apart from social and historical influences.

Neo-classical economics is criticized not only for its ahistorical treatment but also for its inconsistency. The much trumpeted modernity, rigour and logical or internal consistency of neo-classical model had come under intense attack since Joan

Robinson's (1960, p.114-221) questioning of neo-classical conception of capital as a factor of production earning its own legitimate share in production, and the appearance of Sraffa's work: Production of Commodities by Means of Commodities which described the possibility of reswitching of techniques of production contrary to neo-classical explanation. When the criticism of this rigour and consistency confronts Roemer, he answers that there is no use in arguing about the inconsistency but "the criticism must be more fundamentally of the view of history" (1985.1442). It is ironical that the person who stresses consistency and rigour so much, when confronted with the lack of the same tries to take shelter behind the view of history.

As a natural corollary to their advancement of the neo-classical method as noted earlier, Analytical Marxists lay stress on the role of individual in determining social phenomena. It leads them to search for `microfoundations' of Marxian economics, and their total approach rely on methodological individualism. The `rational' individual is substituted for society or class as the atoms of investigation. Their search for `rational' individual also leads them to bank upon the market as a rational mechanism. Roemer specifically mentions that his value analysis is market dependent. He writes, "value, he (Marx) claimed, was a concept that depended on the market and on commodity production. While the Morishima definition of value is a purely techonological one, the new difinition is market dependent" (1986b, p.99). In this reliance on market, individual substitutes society or class as the atom of analysis. It is this almost unqualified substitution of individual for society or class which needs to be critically addressed. Though Analytical Marxists claim that the explanation of macrophenomenon with the help of individual actions is needed in order to lay bare the mechanism that operates in the society, they do not explain the source of rationality of the individual. They do not account for the material conditions which influence individual behaviour in space and time. For them rationality of the individual is given. In their opinion there are some immanent and unchanging rules of behaviour that order or rule the human assemblies across ages and regions/societies. As Hodgson argues, "The research programme of methodological individualism can proceed only on the basis of rigid and dogmatic compartmentalisation of study. The global effects of human purpose are regarded as all important, but the study of the formation of purposes themselves is dismissed as if it were secondary or even beyond the legitimate boundaries of social science itself", and "A position which inflates the causal role of this individual while pushing into the background the extent to which he or she is socially formed has no exclusive claim to political virtue or theoretical integrity" (1986, p.222,233). Individuals enter in to relations (economic, social, political, etc.,) among themselves on the basis of particular relations of production, differently in different stages of development of human society. These relations of production greatly influence the behavior of the individuals. There are no set of 'rational' rules that influence individuals across different stages of development. In different stages of development different relations of production influence the behaviour of the individuals. If these material relation of production are not taken into account, any examination of human behaviour ends up in timelessness.

As opposed to Analytical Marxists' contention that social phenomenon should be explained with the help of individual preferences, motives and actions, we can argue that parts have no prior independent existence as parts and they acquire whatever properties they have by virtue of being parts of a whole, so also individuals' preferences and motives will be conditioned by the society as an organic whole and they will not be formed independently of nor apart from the social conditions. (Lebowitz. 1988.p.194). While giving unstinted support to the market as an equilibrating mechanism, Analytical Marxists conveniently close their eyes to the fundamentally disequilibrating conditions inherent to capitalism. The concentration and centralization process of capitalist accumulation denies the pre-eminent position of the market and the related role of 'rational' individual. The inequalities that accompany capitalist relations of production and accumulation of capital totally negate the existence of the `free' and `rational' individual that Analytical Marxists visualize. In a capitalist society it is capitalist relations of production that impinge on the individuals behavior, rather than some autonomous individual directing the capitalist accumulation according to some universal rational principles. Once capitalist accumulation and related extended reproduction of unequal relations of production enter the scene, Analytical Marxists edifice of methodological individualism comes down crashing.

Analytical Marxists develop methodological individualism as a counter to functionalist or teleological explanations, which they argue, vitiate Marxist discourse. As mentioned above they are of the opinion that only explanation of the phenomenon in terms of individuals actions, beliefs, goals can overcome the fallacies of functionalist analysis. It is in this context they juxtapose methodological individualism to methodological collectivism. It cannot be said that mere embracing of methodological collectivism (it is doubtful as to how far Marxian explanations can be made to fit within the narrow confines of methodological collectivism, for Marx while recognizes the impact of the material conditions/collectism, he also recognizes the relative independence of the individual to act on the material conditions and change them (Keive, 1983, p.56), automatically leads to functionalist or technological individualism, or that advocates of the latter are incapable of making errors of a functionalist kind. (Hodgson, 1986, p.215). Though it is understood that functionalist explanations lead to mechanical application of Marx's materialist analysis, it is doubtful whether Analytical Marxists' methodological individualism, can do away with these shortcomings as they themselves attribute to individuals' 'rational' actions questionable importance.

Another hallmark of Analytical Marxists analysis is their complete reliance on mathematical models of the rational choice kind. In their opinion only these models could do away with ambiguity and vagueness of the Marxist analysis and could infuse regiour into it. One should acknowledge the place of the models as analytical tools in removing inconsistency. At the same time one should not be blind to their arbitrary use. Their social and historical conditions, to which these models are addressed, should be kept in mind. This becomes crucial when we look at the models employed by Analytical Marxists. As Lebowitz emphasizes, "a game theoretic approach is itself cannot be said to be inconsistent with Marxism and Analytical Marxism, the central issue is the nature of the problematic within which such techniques are employed" (1988, p.198). When we examine the way models are used by Analytical Marxists, particularly by Roemer in his generation of Class Exploitation Correspondence Principle (CECP) one will be struck by the arbitrary and ahistorical nature of these models. Though Roemer designated the first model as a pre-capitalist subsistence economy, in fact it consisted of the elements of a capitalist economy. According to Roemer himself it was the market which mediated flows within the pre-capitalist economy. This market mechanism resembles capitalist economic functioning, but not that of the pre-capitalist subsistence economy. Though one can say that markets were also present in the pre-capitalist economy they did not have the mediatory role, which was the case with capitalist economy. In other words through this model Roemer attributed to pre-capitalist subsistence economy the characteristics which are the desideratum of the capitalist economy. The introduction of hiring and selling of wage labour, a manifestation of the capitalist relations of production, into the model did not alter the nature of the model;

it continued to be pre-capitalist. Similar is the case with credit market. Credit market exist in different forms in different modes of production. When Roemer introduced credit market into his pre-capitalist economy model, he did not specify its nature. These instances clearly show that through these models, on which Analytical Marxists largely rely, Roemer attributed characteristics to capitalism which did not belong to it. Naturally the outcome would be something that has little to do with the capitalist economy. In this exercise, models, instead of helping to unravel reality, are only obscuring it.

Roemer defended the use of his models saying that an attack against the use of models was an attack against the use of abstraction in social sciences. He also claimed that his analysis had been done at the level of abstraction at which Marx's value theory was customarily performed. This only makes a mockery of Marx's method of abstraction. It is to be noted that the abstraction in Marx's method was not a mere mental construction, but a result of real social process, a product of historically specific relations of production. In this regard Marx wrote, "Although the simpler category, therefore, may have existed historically before the more concrete category, its complete intensive and extensive development can nevertheless occur in a complex social formation," and "even the most abstract categories, despite their validity in all epochs - precisely because they are abstractions - are equally a product of historical conditions even in the specific form of abstractions, and they retain the full validity only for and within the framework of these conditions" (1970, p.209-210). In other words abstractions emerge from concrete, material conditions and hold good only within these limits. Similarly Kieve argued, "this problem does not vanish by arguing that we are dealing with a high level of analytical abstraction. Such an argument fundamentally misunderstands the nature and functions of abstraction in Marx's method, which, at the very least, has nothing to do with factoring out or successively removing the determinate elements of concrete social reality... it is valid to construct models in which the unessential or non-determinate elements have been removed, but what counts as essential is not arbitrary - or methodologically derived - but dictated by the objective conditions of social reality. Anything else would be abstract in the negative sense of being merely a partial, and therefore incomplete and onesided" (1986, p.563). Opposed to these, as is evident from the above examination of models employed by Roemer it comes out clearly that his abstractions were onesided and arbitrary and did not have their roots in concrete social reality. Roemer's abstractions came from rationality, arbitrarily attributed to the individual, who became, with Analytical Marxits the atom of analysis. This individual is severed from his social and historical moorings. As a result of this it can be unequivocally stated that, contrary to Roemer's contention his method of abstraction had got nothing to do with Marx's method in general and Marx's method of abstraction in particular.

The above examination of Analytical Marxism clearly shows that it had very little in common with Marx's analysis. In the way they emphasised the role of the individual in the explanation of social phenomenon and in the way they highlighted the analytical methods of analysis Analytical Marxists stood quite opposed to Marx. This method, being inherently static, is incapable of addressing itself to Marx's concern: the examination of laws of motion of modern society.

**Labour Theory of Value;**

Before this chapter is ended a few words about Marx's theory of value are needed. The value of a commodity, in Marx's analysis, is determined by the socially necessary labour time required for its production. To put it in Marx's words, "we see then that that which determines the value of any article is the amount of labour socially necessary, or the labour time socially necessary for its production. Each individual commodity, in this connection, is to be considered as an average sample of its class. Commodities, therefore, in which equal quantities of labour are embodied, or which can be produced in the same time, have the same value. The value one commodity is to the value of any other, as the labourtime necessary for the production of one is to that necessary for the production of the other. As values, all commodities are only definite masses of congealed labourtime" (1954, p.47). While analyzing the nature of the commodities, and source and measure of value Marx distinguished between use-value and exchange-value of the commodities. This use-value and exchange-value constitutes the double nature of the commodities. Socially necessary labour-time embodied in a commodity determined its exchange value.

Marx argued that though use value was necessary for a commodity, yet it did not determine the exchange-value (1975, p.44). Use-value of a commodity only plays the role of embodiment of exchange value. The value of each is externalized in the use-value of the other commodity. But this aspect had come under severe attack from Bohm-Bawerk (1966) and still latter from Analytical Marxists who argued that use-value itself could be a source and substance of value instead of labour. Here it is to be pointed out that while use-value or concrete labour reflects the technical nature, exchange-value or abstract labour reflects the social nature of the commodities. Value being a manifestation of social relations, social nature of the commodities will be more relevant for its determination. Because of the nature of capitalist process of production, Marx explained that, the use value played a new role. It was turning into the form of appearance of the commodity-value, thus of its own opposite. Similarly, the concrete, useful labour contained in the use-value turned its own opposite to become a form of realization of abstract human labour. Thus the two opposing determinations of the commodity instead of falling apart are reflected against one another. (1970, p.209-210). Besides this the historical specificity of the category of value does away use-value as determinant of value. Regarding this aspect Marx commented, "This [use-value] is its material side which the most desperate epochs of production may have in common, and whose examination therefore lies beyond political economy" (1973, p.881).

Reflecting the double nature of the commodities, labour is also characterized by a double nature: concrete labour and abstract labour. While concrete labour stands for specific kinds of labour, e.g., spinning, weaving and tailoring; abstract labour stands for general or universal labour where concrete forms of labour are abstracted from. It is the abstract labour, a result of commensuration of the concrete, heterogeneous labour to homogeneous, social labour through exchange, which forms the substance of value. In the capitalist production labour is not only useful labour, but also value-creating labour. While concrete labour stands for useful labour, abstract labour stands for value-creating labour. This abstract labour is a determinate social form of labour which is peculiar to capitalist relations of production. In the capitalist economy labour is not directly social, but private autonomous labour. It is through the exchange of commodities as congealed labour time that private labour is transformed into social abstract labour. That is abstract labour is the emerging result of the capitalist commodity exchange process. Those who argued the need to take use-value as the source of value presumed that Marx, as opposed to use-value, chose labour on the basis of an elimination process. This is contrary to Marx's practice. As emphasized by Chris Arthur, "The transformation of the various concrete labours into homogeneous abstract labour occurs as a social process, as opposed to a process occurring in individual heads" (1979b, p.102). Abstract labour is not a simple conceptual resultant of a variety of concrete types of labour. Though at times abstract labour appears to be a simple, universal and extremely old category, it is in fact a crucial outcome of the motion of modern society. It is as modern as the capitalist relation of production which gave rise to it. Because of the capitalist relations of production and its corresponding exchange and distribution, labour has ceased to be tied as an attribute to a particular individual and has become general, universal source of value. (Marx, 1970, p.209-211).

The labour theory of value is specific to the capitalist mode of production. It is not a transhistorical or ahistoricl category. This indeed explains Marx's argument that each mode of production is characterized by its own laws of production, distribution and exchange. Marx wrote thus, "the full development of the law of value presupposes a society in which large-scale production and free competition abstain, in other words, modern bourgeois society" (1970, p.60). The emergence of the labour theory of value presupposes capitalist relations of production, and distribution and exchange based on these relations of production. The law of value represents particular relations of production, hence particular mode of production and particular form of society. It was for this reason that Marx subjected the classical economists like Smith and Ricardo to scathing criticism for applying the law of value to all forms of societies irrespective of the relations of production. Marx accordingly emphasized, "exchange-value, presupposes population, a population moreover which produces under definite conditions, as well as a distinct kind of family, or community, or state, etc. Exchange-value cannot exist except as an abstract, unilateral relation of an already existing concrete organic whole" (1970. p.206).

Price is the form that value takes in the sphere of circulation. While value is the content or essence, price is the apparent form of value on the surface of capitalist economy. The relation between prices and values is not a linear one, but dialectical. Prices, Marx explains, are to be derived by stages from values by establishing essential links between them. As, besides the sphere of production, the sphere of circulation also enters in the determination of pricers, it appears that prices tend to deviate from values. This deviation in no way disproves Marx's theory of value. This only shows the contradictory nature of the capitalist economy. The determination of prices is based on the determination of values. But because of the interaction of the sphere of circulation, new determinants enter into it. Marx described the relation between prices and values thus: "Market value equates itself with real value by means of its constant oscillations, never by means of an equation with real value as if the latter were a third party, but rather by means of constant non-equation of itself" (1973, p.137). Marx's contribution to the theory of value lies not in concealing the contradictions, but in revealing them; not in succumbing to fetishism but in exposing it. Those who see only inconsistency in Marx's value theory fail to see that in reality it brings to light the inconsistency that is inherent to the capitalist mode of production.

## Conclusion

It is the method that distinguishes critics like the Sraffians, the Analytical Marxists and Morishima on the one hand, and Marx on the other. The critics in their attempts to confer 'citizenship in scientific economics' on Marx's economics, set aside Marx's materialist dialectics. The critics are of the opinion that Marx's economic analysis is replete with contradictions and this is because of Marx's reliance on dialectics. But, contrary to the contentions of the critics, Marx's analysis instead of being bedevilled with the contradictions, highlights the contradictions that characterise the capitalist economy. Marx, with the help of dialectics, brings into picture the historical specificity of the phenomena as well as the categories used to comprehend that phenomena. This comes out clearly in Marx's analysis of value.

## Notes

1. See Prabhat Patnaik (1984) for a detailed presentation of bourgeois economists reception of Marx and his ideas.

2. Gerstein writes, "There has been recently a growing awareness that the dominant economic models of the post-war period must be rejected. This awareness is marked by a search for theories that will better take into account and explain the realities of the contemporary capitalist world economy; realities that include, to name only a representative few, monetary crises, inflation, increased levels of unemployment, and more open international capitalist competition, as well as the growing political strength of communist parties and a not yet completed series of political realignments working out the new power realations that were made manifest by the defeat of the United States in South east Asia", and "for the left the renewal of economic theory involves a critical rejection of recent models in favour of a return to Marx's critique of political economy" (1976, p.244-245).

3. Marshall writes, "Ricardo's theory of cost of production in relation to value occupies so important a place in the history of economics that any misunderstanging as to its real character must necessarily be very mischievous... he [Ricardo] regarded cost of production as dependent - not as Marx asserted him to have done on the mere quantity of

labour used up in production, but - on the quality as well as quantity of that labour; together with the amount of stored up capital needed to aid labour, and the length of time during which such aid was invoked" (1962, p.416-417)

Referring to the decline in importance given to the concept of effective demand since Ricardo's time, Keynes writes, "It could only live on furtively, below the surface, in the underworlds of Karl Marx, Silvio Gassel or Major Douglas" (1973, p.32) .

Samuelson considers Marx "from the view point of pure economic theory... a minor post-Ricardian. . . a not uninteresting precursor of Leontief's input-output" (1967, p.616)

4. "Editorial", <u>Social Scientist</u>, 1983
Vol.12, No.6, p.1

5. The nomenclature itself led to a row. Bandyopadhyay (1984) denounced being called neo-Ricardian and preferred to be called post-Sraffa Marxist. Hodgson (1977) presented a list of reasons as to why they should not be called neo-Ricardians. Dobb (1975) also termed the meaning as pejorative.

6. Arun Bose comments as, "Marx himself was what Robert Solow has called a 'methodological opportunist" (1985.p.2226).

7. Lenin, V.I. 1974, State and Revolution, <u>Collected works</u>.
Vol.25, p.405.

8. The presentation here to a considerable extent depends on the writings of Kieve (1983), Smith (1986), and Boger (1991).

9. "In bourgeois society the commodity form of the product of labour - or the value-form of the commodity - is the economic cell-form." (Marx 1954.p.19)

"The mode of production in which the product takes the form of a commodity, or is produced directly for exchange, is the most general and most embryonic form of bourgeois production." (Marx, 1954,p.86).

"Under commodity production, based on the private ownership of the means of production, production relations appear not as relations between the people involved, but as relations between the products of their labour, relations between things. The thing, the product of labour, becomes the vehicle for people's relations of production. This manifestation of production relations is also typical of capitalist society, since capitalism pressure the commodity form of production. The exchange of commodities, Lenin pointed out, is the "most ordinary and fundamental, most common and everyday relation of bourgeois (commodity) society." That is why an analysis of commodity production (as of capitalist production) must begin with an analysis of the simplest relation - an exchange of commodities in which the individual commodity acts as the vehicle of these relations."

Afansyev, L. et al, 1974. The Political Economy of Capitalism, Moscow, Progress Publishers p.29.

A 'commodity' should be distinguished from a 'good'. Commodity represents both use-value and exchange value while a good represents use-value only. A good becomes a commodity only when it is directly produced for sale/exchange rather than for self-consumption.

10. This issue will be further dealt with in chapter - 3.

# CHAPTER - 2

## SOURCE OF PROFIT

The source of profit has become one of the contentious issues in the debate that engulfed Marxian economics for the last three decades[1]. Some economists stood by Marx in saying that the source of profit could be found only in the exploitation of wage labourers in the production process; while others countered it by saying that wage labour as a commodity was in no way unigue to warrant such an explanation and that any other commodity, in the surplus producing economy, was capable of producing surplus. Others went to the extent of bringing into the picture the inherent productivity of capital, capital as a tool/good and not as a relation, and the role of the capitalist.

The relations of production in capitalism are represented Py the capitalists owning means of production on the one side and the `free' wage labourers on the other side. In this system, wage labourer is 'free' in double sense: wage labourer is `free' (alienated) from the means of production, and he/she is `free' to sell his/her labour to any capitalist. At the same time, wage labourers cannot work for themselves, they have to work for the capitalists who control the conditions of production. The capitalists use the labour of these wage labourers in the production process, and at end of the circuit receive revenue in the form of profit, over and above the costs incurred. It is with the origin of this profit that we are concerned.

Profit is the form that surplus value takes on the surface of the capitalist economy.[2] This form of surplus value, profit, evolves as a necessary outgrowth of the capitalist economic process, as a result of the inversion of the subject and object (Marx. 1959,p.45), as a manifestation of the fetish nature of its economic process. While surplus value is the essence/content, profit is the appearance/form. The source of profit would be the same as that of the surplus value, as former is only the phenomenal form of the latter. The way profit is calculated conceals its source. As Marx represents, "the profit, such as it is represented here, is thus the same as surplus value, only in a mystified form that is nevertheless a necessary outgrowth of the capitalist mode of production. The genesis of the mutation of values that occurs in the course of the production process, must be transferred from the variable portion of the capital to the total capital, because there is no apparent distinction between constant and variable capital in the assumed formation of the cost-price. Because at one pole the price of labour-power assumes the transmuted form of wages, surplus value appears at the opposite pole in the transmuted form of profit" (1959,p.36). Disguised as profit, the source of surplus value is completely concealed. Marx, in his analysis, demystifies the source of profit and highlights the exploitation of labour in the production process as the source of surplus value and profit.

The apparent form of capitalist production as well as exchange process gives the impression that profit is the result of excess of selling price over cost price, i.e., the profit emerges as a result of exchange of commodities in the circulation process. As a result, the sphere of production is left out of consideration. Marx says, "in reality (i.e., in the world of phenomena) the matter is reversed. Surplus value is given, but given as an excess of the selling price of the commodity over its cost price, and it remains a mystery where this surplus originated - from the exploitation of labour in the process of production or from outwitting the purchaser in the process of circulation or from both" (1959,p.47). The surplus cannot be produced in the sphere of circulation by selling commodities over and above its value, for this would only lead to the cancellation of the surplus of one person by the deficit of another, and as a result there would be no real surplus. In the exchange process, i.e., in the sphere of circulation, commodities are exchanged for money, or in some cases for other commodities. Usually this circuit is represented as C-M-C, where commodities are exchanged for money, and that money is used to obtain other commodities. In this exchange, there is nothing but a change in the form of the commodities. This change of form does not involve any change in the magnitude of value. As such, exchange is not a method for creating surplus value, and therefore, the sphere of circulation is not the place where surplus value is created. As Marx explains, "so far therefore as the circulation of commodities effects a change in the form alone of their values, and is free from disturbing influences, it must be exchange of equivalents", and exchange of equivalents is "no method for increasing value" (1954,p.156). Even when non-equivalents are exchanged, i.e., when commodities are sold above their values or commodities are bought below their values, it cannot be said that surplus value is created in the sphere of circulation. When non-equivalents are exchanged, the values that are already created in the production process are only redistributed, and after the circulation total value created in the economy remain the same without any addition. In this regard Marx writes, "turn and twist as we may, the fact remains unaltered. If equivalents are exchanged, no surplus value results, and if non-equivalents are exchanged, still no surplus value. Circulation or the exchange of commodities, begets no value" (1954, p.161). The capitalist buys commodities at their value and still extracts surplus at the end. To understand the emergence of surplus, one needs to examine the sphere of production which intervenes in the buying and selling of the commodities by the capitalist. Surplus is produced in the sphere of production and is realised in the sphere of circulation. This realisation of surplus value in the sphere of circulation gives the false impression that circulation is the source of surplus value.

All parts of capital, in the process of production, do not give rise to surplus value. It is the variable portion of capital spent on wage labour which leads to surplus production. But the way profit is calculated leads to the misconception that all parts of capital equally cause the surplus production. As the rate of profit is calculated as the ratio of surplus value to the total capital, that is, different elements of value consisting of means of production and labour which form the cost-price, it appears that surplus value springs equally from different parts of the capital. Demystifying this false conception, Marx writes, "surplus value, as posited by capital itself and measured by its quantitative relation to the total value of the capital, is profit. Living labour, as appropriated and absorbed by capital, appears as capitals own vital power; its self-reproducing power, additionally modified by its own movement, by circulation, and by the time belonging to its own movement, circulation time. Only by distinguishing itself as presupposed value from itself as posited value is capital posited as self-perenniating and multiplying value. Since capital enters wholly into production, and since, as capital, its various component parts are only formally distinct from one another, are equally sums of value, it follows that the positing of value appears to be equally inherent in them. Furthermore, since the part of the capital which exchanges for labour acts productively only in so far as the other parts of capital are posited together with it - and since the relation of this productivity is conditioned by the magnitude of the value etc., the various relations of these parts to one another (as fixed capital etc.) - it follows that the positing of surplus value, of profit, appears to be determined by all parts of capital equally. Because on one side the conditions of labour are posited as objective component parts of the capital, on the other side labour itself is posited as activity incorporated in it, the entire labour process appears as capital's own process and the positing of surplus value as its own product, whose magnitude is therefore also not measured by the surplus labour which it compels the workers to do, but rather as a magnified productivity which it lends to labour" (1973, p.822). The way profit is treated, in the capitalist mode of production, mystifies its source. The constant capital provides the variable capital with the conditions of production through instruments of labour and objects of labour. Without these conditions of production, variable capital cannot lead to the production of surplus value. Without the active intervention of variable capital spent on wage labour, constant capital meant for conditions of production will remain idle. It is the combination of both of them in the production process that posits surplus value. As the profit is derived from distributing the surplus produced in the production process to all units of capital according to their proportional magnitude, it gives false impression that all elements of capital equally cause the surplus.

The way distribution is treated under the capitalist relations of production also mystifies the source of profit. Under the capitalist relations of production, profit appears to originate from hidden qualities inherent in capital itself. The trinity formula of distribution relations: capital-profit, land-rent and labourer-wage testifies to the mystery that clouds the source of profit. Because of this it appears that profit arises from capital, rent from land and wages from labourer. But here it is to be noted that capital stands for the relations of production particular to the capitalist mode of production under which capitalist extorts surplus from the labourer in the production process. Ownership of land is shown to lead to rent, i.e., inorganic nature is shown to cause production of value. In the like manner labour is divested of its very social form. Marx writes, "In capital-profit, or still better capital-interest, land-rent, labour-wages, in this economic trinity represented as the connection between the component parts of value and wealth in general and its source, we have the complete mystification of the capitalist mode of production, the conversion of social relations into things, the direct coalescence of the material production relations with their historical and social determination. It is an enchanted, perverted, topsy- turvy world, in which Monsieur la Capital and Madam la Terra do their ghost walking as social characters and at the same time directly as mere things" (1959, p.830). The necessity is to tear the shroud of mystery that surrounds the production of profit. Along with the role played by the sphere of production, it has to be shown that even within the sphere of production it is the exploitation of wage labour by the capitalist under the capitalist relations of production which leads to the emergence of surplus, which in turn takes the form of profit.

Exploitation means making gains or reaping benefits at the expense of others. Exploitation of labour refers to the extraction of surplus labour by the exploting class where by the labouring or exploited class is made to work over and above that needed to produce necessities of the labouring class. Though the exploitation of labour is common to al class societies, the form it takes differs from one class society to another. In the case of the slave and feudal societies exploitation of labour is visible on the surface. But in the case of capitalist society this exploitation is concealed behind the exchange relations.

Marx writes, "the fundamental law of capitalist competition, which political economy had not hitherto grasped, the law which regulates the general rate of profit and the so-called prices of production determined by it, rests... on this difference between the value and cost price of commodities, and the resulting possibility of selling a commodity at a profit under its value" (1959, p.37). Here the cost price of the commodity consists of the expenditure on constant capital 'c' and variable capital 'V' where constant capital refers to means of production, both instruments of labour and objects of labour; in other words, capital goods and raw materials, and variable capital refers to the expenditure on the purchase of labour power, i.e., wages. The value of the commodity then constitutes of constant capital, variable capital and the surplus value, 'S' added to it, i.e., c+V+S. The difference between the value and cost price of the commodity is the surplus value added to the latter in the process of production. Marx explained the emergence of the surplus with the help of circuit of money capital: M-C-M'. Here M stands for the initial capital with which circuit starts, c stands for the labour-power and means of production bought with the M for the production process, M' stands for the new capital at the end of this circuit, which includes both M, the initial capital and $\triangle$M the newly added capital. The newly added capital $\triangle$ M is nothing but the surplus produced in the production process. Marx explains that this surplus is the result of exploitation of labour in the production process. He explains that labour power has the peculiar character of producing over and above what is needed to reproduce it, i.e., the capacity to produce over and above its value. The labourer, the seller of labour-power, like the seller of any other commodity, receives its exchange value and parts with its use value. It is this use-value which matters for the capitalist because of its capacity to produce more than its exchange value. As Marx writes, "the past labour that is embodied in the labour-power and the living laborer that it can call into action, the daily cost of maintaining it, and its daily expenditure in work, are two totally different things". Again, "what really influenced him (capitalist) was the specific use-value which this commodity possesses of being a source not only of value, but of more value than it has itself" (1954, p.188). As Marx explains, the possibility of the production of surplus value in the sphere of production becomes reality with the appearance of labour-power as a commodity and the labourer as its owner/agent on the market. It is the exploitation of labourer in the production process through the use of its labour-power which gives rise to the production of surplus. Without the presence of the unique commodity `labour-power' and its exploitation by the capitalist in the production process, it is not possible to account for the emergence of the surplus value and profit in the capitalist economy.

**Capital** signifies relation of production. Capital only exists in relation to non-capital, the negation of capital; **without this relation** capital cannot exist. In this relation non-capital is wage-labour. Capital can exist only in its relation to wage-labour. Further, this relation obtains its fullness only when labour-power appears as a commodity in the market, a commodity which, like any other commodity, has use-value and exchange-value. For this phenomenon to surface labourer has to be alienated from the conditions of production. In this relation, labour exists as non-objectified labour, excluded from objective wealth. Labour does not appear as an object, but as an activity, an activity as the living source of value. This nature of labour is the necessary part of the capitalist relations of production where capital buys labour-power as any other commodity and obtains the benefits of its use-value. As Marx expresses, "it is not at all contradictory, or, rather, the in-every-way mutually contradictory statements that labour is absolute poverty as object, on one side, and is, on the other side, the general possibility of wealth as subject and as activity, are reciprocally determined and follow from the essence of labour, such as it is presupposed by capital as its contradiction and as its contradictory being, and such as it, in turn, presupposes capital" (1973, p.296).

The distinction between simple exchange of commodities and exchange between capital and labour shows the unique nature of the commodity, labour-power and the origin of surplus value and profit. The exchange between capital and labour splits into two processes which are qualitatively different and contradictory. The wage labourer sells his/her commodity for a specific exchange value or price, while the capitalist obtains labour-power and hence labour as value creating activity, the productive force which preserves and multiplies capital. This process instead of coining to an end with the consumption of the commodity of labour-power, extends further. In this exchange the two processes - sale and purchase of labour power, and its utilisation - can take place at different times. In contrast to this, in simple exchange of commodities, this double process does not take place, and also the nature of the process is completely different. Marx described the distinction between the two processes: "In simple exchange, circulation, this double process does not take place. If commodity A is exchanged for money B, and the latter then for the commodity c, which is destined to be consumed - the original object of the exchange, for A - then the using-up of commodity C, its consumption, falls entirely outside circulation; is irrelevant to the form of the relation; lies beyond circulation itself, and is of purely physical interest, expressing no more than the relation of the individual A in his natural quality to an object of his individual need. What he does with commodity C is a question which belongs outside the economic relation. Here, by contrast, the use value of that which is exchanged for money appears as a particular economic relation, and the specific utilisation of that which is exchanged for money forms the ultimate aim of both processes. Therefore, this is already a distinction of form between the exchange of capital and labour, and simple exchange - the different processes. If we now further inquire how the exchange between capital and labour is different in content from simple exchange (circulation), then we find that this difference does not arise out of an external connection or equation; but rather that, in the totality of the latter process, the second form distinguishes itself from the first, in that this equation is itself comprised within it. The difference between the second act and the first - note that the particular process of the appropriation of labour by capital is the second act - is exactly the difference between the exchange of capital and labour, and exchange between commodities as it is mediated by money. In the exchange between capital and labour, the first act is an exchange, falls entirely within ordinary circulation; the second is a process qualitatively different from exchange, and only by misuse could it have been called any sort of exchange at all. It stands directly opposite exchange; essentially different category" (1973, p.274-5). In the simple circulation, process comes to an end with the consumption of the commodities. In the case of exchange between capital and labour, the consumption of labour-power by the capitalist leads to the transformation of value. In the exchange between capital and labour, the labourer obtains exchange value of the labour-power sold. With this value the labourer gets commodities whose use-value ends with consumption. In the hands of the labourer money appears as a medium of circulation. In the case of the capitalist, in exchange for money or exchange value he/she obtains use-value, labour, which creates wealth. In the hands of the capitalist, money appears as a medium of accumulation. While the labourer goes through the form C-M-C in the exchange process, the capitalist goes through M-C-M'.

A commodity has only exchange value to its producer;

It does **not** stand as use value to him/her. It is a use value only to the buyer. `The use-value of a thing does not concern its seller, but only its buyer' (Marx, 1954, p.89). The same is the case with the commodity labour-power. For the labourer it has only exchange value. It is a use value for the capitalist (Marx, 1973, p.307). It is this use value which makes all the difference. As labour-power is only exchange value but not use value for the labourer, it is no more productive of wealth for him/her. The exchange-value of a commodity is determined before its circulation. So is the case with labour-power. The exchange value of labour-power is determined before its exchange with capital. It enters circulation as a predetermined value. The exchange value of labour-power is not determined by its use value, but by the cost of its production. In return for labour-power, the labourer gets a definite amount of value. Through this exchange the labourer cannot enrich himself/herself. In opposition to this, capitalist gets labour-power as use value, living labour capable of producing more wealth. As the labourer forgoes his/her own creative power, the capitalist appropriates it. Labour becomes productive in the process of creating its own opposite, capital.

The origin of surplus value, it appears, comes into contradiction with universal law of capitalist production, the law **of value:** Surplus value emerges even when commodities are exchanged at their values. In other words, surplus value is extracted without contradicting the fact that commodities exchange for one another in proportion to the labour-time congealed in them. Marx described this paradox thus, "It is therefore impossible for capital to be produced by circulation, and it is equally impossible for it to originate apart from circulation. It must have its origin both in circulation and yet not in circulation. . . The conversion of money into capital has to be explained on the basis of the laws that regulate the exchange of commodities in such a way that the starting point is the exchange of equivalents. Our friend, Moneybags, who as yet is only an embryo capitalist, must buy his commodities at their value, must sell them at their value, and yet at the end of the process must withdraw more value from circulation than he threw into it at starting. His development into a full-grown capitalist must take place, both within the sphere of circulation and without it. These are the conditions of the problem" (1954, p.163).

The realisation of this phenomenon demands the presence of certain economically necessary conditions. For the surplus value to arise without violating the law of value we must find within the sphere of circulation a commodity whose use value possesses the peculiar property of being a source of value. This formulation is a necessary reflection of the contradictory character of the capitalist production and circulation process. As a corollary of the capitalist relations of production, labour-power appears as that unique commodity capable of producing value over and above than needed to produce or exchange it. Labour-power is the only commodity which, at one and the same time, is included in the sphere of application of law of value and without any violation of this law makes surplus value, which directly contradicts the law of value, both possible and necessary.

Marx's analysis of the source of profit has become an object of intense theoretical debate. While some economists attempted to find the grounds on which Marx's analysis could be upheld, others tried to show that Marx's analysis of the source of profit and exploitation of labour-power is untenable. In this context, we examine the attempts of Morishima, the Sraffians and the Analytical Marxists to explain the source of profit.

## MORISHIMA'S PRESENTATION

Morishima's Fundamental Marxian Theorem [FMT] (1973) occupies an important place in the controversy on the source of profit. It was said to be the first mathematically rigorous attempt to situate the source of profit in the exploitation of labourers. He also claimed it to be the most advanced answer to the questions regarding the reproducibility and expandability of the capitalist economy (Morishima, 1974b, p.614).

Morishima's analysis of FMT may be questioned such that his conclusions follow tautologically from his previous statements and equations, for e.g.,

$$\Lambda_i = \Lambda A_i + \Lambda_{ii} \, wBL_i + e\Lambda_{ii} \, wBL_i$$

$$\Lambda_{ii} = \Lambda_i A_{ii} + \Lambda_{ii} wBL_{ii} + e\Lambda_{ii} wBL_{ii}$$

(1973, p. 51) where $\Lambda_i$ stands for value of capital goods $A_{ii}$ tor value Of wage goods, $A_i$ and $A_{ii}$ for capital goods used fcfi the two sectors, $wBL$ for wage goods consumed and e for the rate of surplus value/exploitation.

Basing on the assumption that prices pi and $p^{ii}$ for capital and wage goods respectively are positive he infers that capital input and labour input coefficients:

$$\begin{bmatrix} A_i & A_{ii} \\ wBL_i & wBL_{ii} \end{bmatrix}$$ are positive.

From this he also infers the positiveness of the output matrix. Then he multiplies the obtained output matrix with value magnitudes $\Lambda_i$ and $\Lambda_{ii}$. Here it appears he only substitutes value magnitudes in the place of price magnitudes given in equations (15') and (16') (Morishima, 1973, p.53). By taking into consideration the previous descriptive equations (12) and (13) mentioned earlier he obtains the following expression:

$$(\Lambda_i x_i + \Lambda_{ii} x_{ii}) - \Lambda_i (A_i x_i + A_{ii} x_{ii}) - \Lambda_{ii} (wBL_i x_i + wBL_{ii} x_{ii})$$

$$= \quad e(\Lambda_{ii} wBL_i x_i + \Lambda_{ii} wBL_{ii} x_{ii}) \quad > \quad 0$$

From this he shows that rate of exploitation is positive. He describes this to be his FMT.

Morishima claimed that in Marxian economics FMT plays the role of a bridge connecting the value system and price system (1973, p.54). But he did not show how it was so, except doing what Samuelson (1974) described the transformation problem to be: erasing one equation and writing another equation in its place.

Morishima's FMT conclusion follows from value equations (12) and (13) and from price equations (15), (16), (15') and (16') which in turn are based on subtle, if not explicit, assumptions. If these assumptions are questioned, the FMT may collapse.

One of Morishima's expressions of FMT that exploitation of labourers by capitalists is necessary and sufficient for the existence of a price-wage set yielding positive profits is, "It is found that there exists a set of prices and wage rate fulfilling (15) and (16) if and only if the real wage rate' w is given such that the rate of exploitation e is positive" (1973, p.53). Here the presence of two wage concepts within the same expression, one to be determined by the other, i.e., the former to be determined by the latter, provides fertile ground for doubting the consistency of FMT.

Even after Morishima's labours, the crux of the problem remains: How to prove the exploitation of labour when labour-power itself has become a commodity to be sold at its value in the market and gives the impression that labourer gets his worth and as such there is no unfairness in the exchange between labourers and capitalists. It may be said that Morishima fails in demystifying the concepts of profit as well as wage.

His proof of the converse that when there is exploitation it is possible for all industries to earn positive profits, is also similar. It hinges on the positive number $\alpha$ as a relation between price (p) and value (A) magnitudes. This brings Morishima's claim regarding the place of FMT in bringing together value and price systems under clouds. But contrary to his explanation Morishima's FMT follows from his notion of productiveness and positiveness and on his implicit stand regarding the transformation where he brings in '$\alpha$'.

According to Morishima's explanations of necessary and sufficient conditions for the existence of profit (r is positive if and only if s is positive), which he calls FMT, profit implies exploitation and the presence of exploitation makes it possible for all industries to earn positive profits. This leads to justify Steedman's (1981a,p.58) comment that the equations regarding the relation between surplus and profit runs both ways. As a result of such a stand in spite of his claims the causation still remains nebulous. In the same way Morishima does not specify in what way time magnitudes and value magnitudes are related, for while he equates the minimum wage to $1/\bar{T}$ where $\bar{T}$ stands for the length of the maximum working day, he equates the maximum wage to $1/\Lambda B$ where $\Lambda B$ stands for workers wages in value terms.

Morishima stated the necessary and sufficient conditions for positive exploitation:

1) Technology has already been developed to such a level that capital goods or means of production are 'productive'; otherwise we would have negative values.

2) The techniques adopted by industries are so productive that values of wage goods $\Lambda_{11}$ are low enough to make total value of the means of subsistence less than the maximum length of the working days.

3) The actual working day T is longer than the necessary labour time $\Lambda_{11}B$, or in other words, the real wage rate <u>w</u> is less than the maximum rate $1/\Lambda_{11}B$ (1973, p.545).

It is to be noted that these conditions refer only to the , technical conditions or relations. In other words these necessary and sufficient conditions demonstrate the possibility of the production of surplus (Marx, 1968,p.406). They do not mention the relations of production. These conditions apply to any mode of production where production of surplus is possible. They are in no way peculiar to the capitalist mode of production. Only the specification of the relations of production between wage labourer and capitalist can explain the emergence of profit in the capitalist mode of production.

But here one is to take note of Morishima's comments on the structure of his book <u>Marx's Economics</u>. He says that the first 13 chapters contain only mathematical interpretations of Marx's economics. But it is in the 14th chapter that he gives his own views (1974b,p.388). Then whatever commented upon above only concerns his interpretation but not his views. In the 14th chapter of that book Morishima takes fixed capital and joint products as typical elements of the economy and tries to apply Marxian categories to them. After the examination, he comes to the conclusion that Marx's labour theory of value does not apply to them and as such his FMT may not be applicable when they are taken into consideration. It is in this circumstances that he argues the need to follow Von Neumann's analysis regarding the fixed capital. He says, "As soon as joint production and choice of techniques are admitted we must discard the labour theory of value, at least in the form Marx formulated it. So if the concept of value is indispensable for the definition of exploitation, the fundamental Marxian theorem is not applicable in the general case of durable capital goods being treated in the Von Neumann way" (Morishima,1974b, p.615).

In order to save Marx from the possibility of being obliterated, Morishima embarks on a rescue operation. He thinks that Marx's theorem can be solved only if values are defined as optimum values, because if actual values are taken, it may lead to negative values in the presence of fixed capital and joint products. While discarding Marx's explanations, Morishima comments: "like neo-classical economists, Marx assumed that capital goods are malleable and autonomously evaporate as in radioactive decay and, hence, his theory of reproduction cannot deal with the so-called capital age structure problems that arise when capital goods depreciate continuously and are being replaced in a discrete way" (1974b, p.615). This equating of Marx with neo-classicals is misleading as they employ totally different conceptions of capital. While Marx considers capital as a manifestation of relations of production between capitalists and wage labourers, neo-classicals treat capital as mere means of production. While treating fixed capital also Marx's conception of capital should be kept in mind. (Marx, 1959, p.74,817-818).

Regarding the labour theory of value Morishima comments, "Marx used the classical labour theory of value, not as a primitive or approximately valid theory of competitive equilibrium prices as it had been used, but to calculate in a purely technocratic way, the value or the labour time directly or indirectly necessary to produce of unit of each commodity" (1974b, p.614). Here also Morishima attributes a wrong meaning to Marx's labour theory of value. Marx did not consider, as made out by Morishima, values as a technocratic way of calculation, but as representative of congealed social labour, the concrete labour which takes the form of social labour as a result of capitalist relations of production where labour power also becomes a commodity to be bought and sold on the market. But because of the inversion of subject and object, because of the fetish nature of the commodity production the things appear otherwise. Morishima, without taking these into consideration straightaway describes Marx's attempts as a technocratic, which may be correct in the case of neo-classicals. He carries over this misconception while presenting or describing Marx's conception of surplus also.

In the same way, Morishima presents three different definitions of rate of exploitation, claiming their origin in Marx's works. In his earlier work (Morishima,1973, p.48-51), he also demonstrated their equality. As the realisation dawns on him regarding the inapplicability of labour values, he reconsiders his earlier stance and repudiates value versions of the rate of exploitation and sticks to physical version of it where he equates the rate of exploitation to the ratio between surplus labour and necessary labour. Here are sown the seeds of the coming together of Morishima and the Sraffians represented by Steedman (Morishima and Catephores, 1978, p.213).

After settling the description of the rate of exploitation, he plunges headlong into his rescue operation. As mentioned earlier he repudiates actual values as being non-unique and introduces optimum values. Then he employs linear programming to calculate the minimum labour time required to produce consumption goods for the labourers. Then the minimisation exercise gives the product which is equal to capital inputs and the consumption goods which are necessary. There is no provision for surplus in this exercise. He describes this optimisation of values represented by $Lx^o$ which represents necessary labour only. This aspect has also been pointed out by Steedman ( 1976, p.604-607). He then equates total labour time TN to $Lx^a$. From this he calculates rate of exploitation as:

$$\frac{TN-Lx^o}{Lx^o} = \frac{Lx^a-Lx^o}{Lx^o}$$

Here **the** problem is that while one aspect of it is calculated in actual value terms another part is calculated in optimum value terms. Can the two different methods be accommodated in a single expression of e?

In juxtaposing actual values and optimum values, Morishima writes, "The optimum operation vector $x^o$ may be different from actual one, $x^a$. First, in the actual capitalist economy, $x^a$ may not be an equilibrium operation vector. Secondly, even if it is, those processes which are actually chosen in the state of equilibrium are processes whose rates of profit are the largest, but not those which minimise employment of labour. Thirdly, in $x^a$, unlike $x^o$, processes for the production of luxury goods and investment goods may be operated at positive intensities" (1974b, p.617). It presents many problems: what does Morishima mean by minimisation of labour employed or to calculate labour necessary to produce labourers subsistence consumption ? In the context of the above passage the choice appears to be the former. If it is so this further contradicts Marx's presentation. In the context of socially necessary labour time the minimum labour power employed provides along with necessary labour, surplus labour also. But in Morishima's minimisation problem surplus does not appear. Even in the extract of Marx cited by Morishima, Marx clearly explains that labour-power gives rise to both necessary and surplus labour. In order to take account of the surplus Morishima has to employ actual values $Lx^a$. Then, one is left in confusion as to why Morishima juxtaposes two value systems.

Again, Morishima presents maximisation of profit and minimisation of labour as two opposite forces or trends. As noted by Shaikh (1978) and others, the capitalist production and circulation process aim both at maximisation of profits and minimisation of labour or cheapening of value of the product.

After defining the rate of exploitation, Morishima tries to generalise FMT to the conditions where fixed capital and joint products are present. Initially he defines profitability and expandability conditions. After that he states the assumptions that labour is indispensable for this production of consumer goods and for the economy to grow, and that when workers are paid no wages capitalists are guaranteed positive profits. Here it appears that what is to be proved is already assumed. The assumption regarding wages and profits also implicitly states an inverse relationship between them.

In proving the lemma that the rate of exploitation is positive (e>o) implies that rate of profit is positive (r>o) the following equations are derived:

1) $P^w Ax^o + (1+e)P^w DLx^o \leq P^w Bx^o \leq (1+r)(P^w Ax^o + P^w DLx^o)$

2) $ep^w DLx^o \leq r(p^w Ax^o + p^w DLx^o)$ (1974b,p.620)

When this is compared to the earlier exercise (1973) it is difficult to figure out any improvement. Though Morishima claims that in the new version value categories are not used, on close examination this proves to be wrong. In the earlier exercise (1973) positiveness of prices, input coefficients and output magnitudes were stated. Then after substituting value magnitudes for price magnitudes and using the given description of value equations, the rate of exploitation as the basis of rate of profit was derived. In the present exercise also left side components are implicitly derived from value magnitudes. From the given proof it is difficult to make out causation.

Morishima also says: "It does not require the concept of 'actual values' because the rate of exploitation is defined in terms of the actual employment of labour TN and the minimum employment $Lx^o$ necessary to produce the commodities for subsistence, as is shown in formula (3), or in terms of optimum values $\Lambda^o$ as in formula (6). In spite of the possible non-uniqueness of the optimum value system, the theorem in the latter form is not ambiguous, because, as has been seen, the rate of exploitation calculated on the basis of the different optimum value systems are all equal to the rate of exploitation in terms of the actual and the minimum employment. Thus Marx will not die together with the labour theory of value (actual value) as long as the fundamental Marxian theorem is considered the core of his' economic theory" (1974b, p.621-2).

In his reply to Samuelson, Morishima (1974a) claims to present a 'neutral form'. He states, "Marx regards a and $a_o$ as technically given and B as biologically given, hence, T can be calculated easily. The theorem then states that $R^*$ which satisfies (1) is positive if and only if T is larger than T . No 'mysterious' concepts such as 'value' or 'exploitation' or anything else appear in this form of the theorem. It gives an economically meaningful relationship between T and R " (Morishima, 1974a, p.71). This neutral form appears nearer to Sraffian analysis. In the given equation neither prices nor values appear. It may be nearer to the Sraffian commodity approach or a commodity theory of value.

He writes, "However, what does the critical value T stand for ? This question is important, especially to Marx because his contemporaries cannot swallow down the Leontief inverse $(I-a)^{-1}$. Probably the only way to make them understand $T^{*}$ is to appeal to the labour theory of value, as Marx does" (Morishima, 1974a, p.71). In this statement his contemporaries cannot swallow down'. appears similar to Hodgson's (1980) charge that Marx was influenced by the then prevailing technology when labour was predominant part, which implies that Marx resorted to value analysis not because of particular relations of production but because of the then prevailing technology. Also while, Morishima, on the one hand says that value is the socially necessary labour time, on the other hand he says that there is no element of competitive arbitrage. Is there no relationship between the way a particular socially necessary labour time is formed and the competition among capitalists. He further says, "In Marx, competitive arbitrage is exclusively made in terms of prices, the wage rates and the profit rates, not in terms of values and the rates of surplus value at all" (Morishima, 1974a, p.71). Just because **Marx** does not introduce price and related categories until volume III of *Capital* where the process of capitalist production as a whole is examined, wherein both the process of production and the process of circulation are correlated it does not mean that capitalist competition will not enter the value realm. If competition appears only in the realm of circulation, in the realm of prices, it may not be far away from equating Marx with neo-classicals as was done by Morishima regarding the treatment of fixed capital.

Morishima further writes, "This fundamental exploitation ratio, i.e., surplus labour/necessary labour ratio $e_L$ common to all modes of production based on exploitation, Marx wanted to identify in the context of the accounting system based on capitalist market" (1978,p.40). For this identification, and to demystify it Marx relies on value analysis and accordingly employs value categories. Morishima quotes Marx as saying, "This false appearance distinguishes wage labour from other historical forms of labour. On the basis of the wage system even the unpaid labour seems to be paid labour." (1978, p.42). But Morishima keeps only $e_L$ and leaves other explanations of exploitation containing value categories like $e_P$ and $e_s$. Because of this it is doubtful whether Morishima can succeed where Marx triumphed : demystification.

## PRESENTATION BY THE SRAFFIANS

The question of the source of profit is nearly completely blurred and obscured in the works of Sraffians. Before a detailed examination is taken up a look at Hodgson's analysis of profit will be of some help. It appears that Hodgson is vague about the source or causation of profit. At many places he confuses profit or mass of profit and rate of profit. He starts with the analysis that "profit cannot be regarded as a residual element" (Hodgson,1982b,p.217). Here he might be having in mind the analysis of classical economists such as Smith and Ricardo. But after a few sentences he asserts, "It is more plausible... to regard profit as a mark up on costs" (Hodgson,1982b, p.218). The conception of 'mark up' as much as that of 'residual element' does not contain any meaning regarding the source of profits. According to him, this mark up theory can be easily accommodated in a Sraffian price theory and accordingly names it as "cost of production plus profit theory". The question about the where-abouts of the profit is further compounded with his analysis that, in the profit determination one of the most important elements is the degree of competition along with the firm's control over the market. Accordingly, for him, profit is the "expression of relation of power between firms and individuals in the system" (Hodgson,1982b, p.219). This is more in consonance with John Roemer's analysis of differential endowments than with Marx's analysis of exploitation of labour in the production process. Here it is to be noted that the competition and hold on the market can only distribute the already produced profits, but it Py itself will not. cause profits. Here he appears to have been confused between the determination of mass of profit and rate of profit. Also here he appears to have contradicted his own statement albeit obliquely when he says, "social relations do not **actually** produce", (Hodgson,1982b, p.211), if at all we mean competition as an expression of social relations. But his statement in the context he expresses is to be repudiated as it undermines the importance of the conception of social relations in the understanding of the theory of value and distribution. Though at a point he mentions "the possible increase in profits through increase in productivity" (Hodgson, 1982b, p.218) he did not elaborate the issue and falls back on mark up theory.

Hodgson's explanation of exploitation is, as stated earlier, in accordance with uneven initial endowments and he does not work out the mechanism of exploitation. This sort of explanation can be extended to any and every mode of production and almost fails to capture the specificity of capitalist relations of production. Though he states that exploitation is unavoidable under capitalist relations of production, his explanation of its importance for the theory of distribution is minimal, or even insignificant. He attempts to explain it through the concepts of `pre-contractual exploitation' or `bargain exploitation' and `post-contractual exploitation' which is again divided into `corporeal exploitation', `authority exploitation[1] and `class exploitation'. The common thread running through these concepts is the unequal relationship; in other words the weakness of labourer vis-a-vis capitalist. It is needless to say that the unequal relationships impinges on the exploitation, but mere notation of the unequal initial endowments by themselves do not explain the process of exploitation specific to **a particular** mode of production. In this regard, Hodgson fails to explain the process of exploitation in the capitalist economy.

"If Marxists are to present a superior theory, they must, as a pre-condition, stop imagining that existence of (narrowly defined) exploitation explains the existence of profit. It does not" (1981b,p.17). So goes on the criticism by Steedman whose writings have become the spearhead of Sraffian attacks on Marxian analysis. Steedman is not alone in this endeavour. He is joined by Hodgson who says, "Surplus-value therefore cannot be regarded as the proximate cause of profits. The traditional account of profit determination in Marxist theory must be either recast or abandoned" (1981b, p.77). From this it is clear that for them production of surplus is of no use in explaining profits.[3]

At the same time, Steedman also says that they are not opposed to the surplus approach: "the physical quantities approach naturally does not deny that existence of surplus labour" (ibid). The main drawback of this analysis is that they directly identify profit and surplus value. They do not consider profit as the developed from that surplus product takes in the capitalist mode of production. They do not treat surplus value as the essence which takes the apparent form of profits on the surface of the capitalist economy. They completely keep aside the contradiction between the essence and appearance and as a result they directly seek to identify them without the necessary intermediate linkages. This is the same drawback that Marx identifies with Ricardo. Steedman writes, "It does, however, make very clear the fact that the existence of (narrowly defined) exploitation and the existence of profit are no more than two sides of the same coin; they are simply 'labour' and monetary expressions of the physical surplus. But Marxist writers only too often suggest that by relating profit to (narrowly defined) exploitation they have _explained_ the existence of profit. They have not, they have simply noticed both ways of expressing the existence of the surplus product! To explain the existence of profit is just _the same thing_ as to explain (narrowly defined) exploitation" (1981b, p.17). Here it is evident that for Steedman profit and surplus product are the same thing. (It is amazing that only in the next few sentences he would go a long way to say that one should stop imagining that existence of exploitation explains profits). By trying to identify the two things he kept aside the contradiction between the two. That is to say he is not concerned with the process through which surplus value passes through in order to take the form of profit. Marx, as is well known, considers the process as a continuous oscillation of essence and appearance. Because of the way profit is calculated it gives a misrepresentation that all segments of capital gives rise to surplus. This obscures the source of surplus. By identifying profit directly with surplus, Steedman, it appears, lays the foundation for mystification of surplus produced in the capitalist process of production.

Closely related to this direct identification of surplus with profit is Steedman's criticism that Marx unjustifyingly castigates Ricardo for identifying the rate of profit with the rate of surplus value on the belief that Ricardo ignored aggregate non-wage capital (1982,p.138). While the latter part though controversial can be proved that Marx was right, what is of immediate interest is that Marx's criticism of Ricardo for identifying essence and appearance. Marx argued that Ricardo directly identified profit with surplus value. Marx is of the opinion that profit should be treated as the developed form of surplus value and both should not be identified directly with each other. Intermediate linkages should be analyzed while examining the relation between profit and surplus value. Ricardo completely neglects these intermediate links. (Marx, 1968,p.165). When this aspect is taken into account Steedman's allegation will not stand.

Contrary to Steedman's allegation, Marx's criticism of Ricardo that he only took into account capital invested on wages, is not devoid of facts. Even Garegnani one of the supporters of the Sraffian analysis recognises this: "in determining the rate of profit Ricardo operated <u>as if</u> capital consisted entirely of the wages advanced for the year. In fact he saw the division of the product between wages and profits as the only factor capable of influencing the rate of profit, thus ignoring the independent influence exerted by the proportion between labour and means of production"[4] (1984, p.300).

Even more amazing is the way Steedman underscored the adding up theory of value: "Marx was not justified in criticising Ricardo for accepting Smith's resolution of prices into revenues" (1982, p.139). Once the adding up of different distribution values or revenues namely profit, wages and rent is accepted as forming total value of the commodity, it naturally leads to the ignoring of aggregate non-wage capital, because once the value is formed by the three components there will be no place for constant capital in the value or price. Besides this, adding up theory gives the wrong causation of value. In that case value being the limitation within which different distribution values are determined or derived, in turn it ends being caused by these distribution values. The causation is reserved. Here it is apt to underline what Garegnani says, "There are on the one hand, the 'apparent relations' or 'connections,' which are those perceived by the unsystematic observer and which are represented in Adam Smith's 'adding up' theory of prices, when 'instead of resolving exchange value into wages, profit and rent [he] constructs the exchange-value of the commodity from the value of wages, profit and rent, which are determined independently and separately'. In such an inconsistent representation of the economic system '[the] contradictory character [of capital] is **totally** concealed and effaced ... no contradiction to labour [is evident]'. There are, on the other hand, 'the real relations' constituting the 'intrinsic' or 'inner connections' of the bourgeois system. These are the relations brought to light by systematic scientific analysis. They centre on the constraint that binds changes in wages to changes in profits and rents and reveal the economic antagonism between classes. Now, for Marx, 'these inner connections' required, in order to be revealed, that the product be measured independently of its division between the three classes. Hence the role of Ricardo's measurement of values in terms of labour embodied in which, in Marx's own words, the value of the commodity 'does not depend upon its division into wages, profits and rents' and constitutes instead 'the limit... for the dividends which the labourers, capitalist and land lord will be able to draw from this value in the form of revenue, wages, profits and rents'" (1984, p.304).

The postulation of necessary and sufficient conditions for the existence of profit in mathematical/logical form also presents its own problems. When necessary and sufficient conditions are stated they are of biconditional form; e.g., A is the necessary and sufficient condition for the existence of B, the converse B is necessary and sufficient condition for the presence of A also becomes true. When this postulation is applied to analysis of profit it appears not only that the presence of surplus is the necessary and sufficient for the presence of profit, the converse also becomes true. But this poses problem for the analysis of source of profit. Because of this causation of profit becomes obscured. This becomes evident when Steedman writes, "The very fact that the proposition in question 'runs both ways' (r is positive if and only if S is positive) means at once that it does not constitute a theory of why r is positive. Any theory of why profits are positive will at the same time be a theory of why surplus value is positive" (1981a, p.58). He also says **that** his analysis, "shows how the physical conditions of production and circulation and the real wage ... determine the level of (narrowly defined) surplus labour which is positive if and only if the rates of profit and accumulation are positive" (1981a, p.200). In this apparently surplus labour is derived from the presence of positive profit rate. Only mathematically can one go from a value system to a physical conditions of production and wage data system and vice-versa validating Steedman's condition that relationship between profits and surplus value runs both ways, but epistemologically this becomes indefensible because of the asymmetry between the two systems. (Ian Hunt, 1982). At this instance it is better to remember Marx's words, "The rate of profit (and the associated prices of production), is not a mystery, as soon as we know the laws of surplus value. If we reverse the process we cannot comprehend mi l'un ni l'autre" (Alfred Medio, 1972, p.323).

Karl Marx's analysis that the value created by labour and the value paid for the labour-power are two different magnitudes and that labourer produces over and above the value required to obtain his real wage and that this difference constitutes exploitation appears to Sraffian as being narrow and unable to capture the reality. Steedman writes,"Marxist discussion has always laid great stress on 'exploitation', where the term is not given its everyday, multidimentional measuring (bringing in wages, conditions, the harshness of labour discipline and so on) but rather a narrow technical meaning" (1981b,p.17). Similarly Hodgson argues, "exploitation is rich and complex phenomenon. The one dimensional concepts of surplus labour and surplus value do not do it justice" (1981a, p.231). But what they want is already done by Karl Marx in his meticulous analysis of the emergence of the class of proletariat through the examination of the primitive accumulation and the analysis of the labour process where labourer as the active participant acting through the instruments of labour (his tools) on the objects of labour creates new value while at the same time preserving the values congealed in the instruments as well as objects of labour. Karl Marx comes to the conclusion of the exploitation of labour only after analysing the 'everyday multidimensional meaning[1]. Without analysing the 'wages, conditions, the harshness of discipline and so on' Marx could not have reached this conclusion. As mentioned earlier, Hodgson tries to give his own picture of exploitation through the concepts of 'pre-contractual exploitation' and 'post-contractual exploitation'. But Marx's analysis of the process of alienation achieves more than Hodgson and Steedman bargain for. Their analysis only helps to muddle up the concept of exploitation. Sraffians' criticism that Marx was concerned with the narrow technical meaning of exploitation becomes baseless once we recognise that Marx understood that the mere technical possibility of surplus labor was not enough and that to turn the possibility into reality workers must be forced to divest themselves of the surplus labour. This is clear from what Marx said, "though the existence of surplus-labour presupposes that the productivity of labour has reached a certain level, the mere possibility of this surplus-labour (i.e, the existence of that necessary minimum productivity of labour), does not in itself make it a reality. For this to occur, the labourer must first be compelled to work in excess of the necessary time, and this compulsion is exerted by capital" (1968, p.406).

In keeping with his suggestion that exploitation as the explanation of profit must be abandoned and proper theories of the persistence of surplus must be advanced, Steedman attempts to explain the emergence of surplus/profit with the help of a physical quantities approach. He assures us that his analysis based on physical quantities do not deny that exploitation is the source of profit. He argues that the relationship between the surplus labour and the existence of profit can be established quite independently of Marx's value concept, that it is simple to show how profit will be positive if and only if there is surplus labour i.e., capitalist exploitation with the help of alternative and coherent solutions, and that they bring to the light the fact that the determinants of the profit rate are precisely the determinants of surplus value which Marx analysed so intensively.

Steedman shows that conditions of production (A inputs and B outputs) and the real wage (W) are enough to explain the existence of exploitation/surplus. (Steedman,1981a,p.33-67; 194-200). These are the same variables that he uses to explain the determination of prices and the rate of profit. He also says that to explain the existence of profit is to explain exploitation. **Here, which** way causation runs does not concern him. It can be said that Steedman's interest in exploitation of labour is short- lived as he, later, comes to the conclusion that labour is in no **way** different from other commodities in producing surplus[5].

After having explained that physical conditions of production and the real wage are enough to show that surplus is in fact the source of profit, Steedman[6] comes to the crux of the problem. He realises that the problem is to explain why real wages and conditions of production bear such a relation to one another that surplus, profit and growth capacity exist and continue to exist in a capitalist society. (Steedman, 1981a, p.59,200; 1981b,p.17). In other words, the need is to advance 'proper theories of the persistence of surplus'. From this it is obvious that Sraffian physical quantities approach fails in achieving this aim. After strenuous efforts to explain that physical conditions of production and real wages are enough to determine surplus, Steedman realises that the above explanatory variables themselves need to be explained. This is the same thing that critics of Sraffian analysis like Anwar Shaikh wanted to know from them: "But what then determines this physical production data?" (1981, p.280) Sraffian analysis is not equipped to answer this.

The variables that the Srafians use only denote the technical possibility of the production of surplus. Through these technical relations they show that productivity of labour has reached a certain level capable of producing surplus. The problem is to examine the relations of production that intervene to appropriate this surplus. The capitalist relations of production are to be examined to explain the persistence of the surplus. The need is to set forth, "historical justification for capital" (Marx, 1968, p.405). For this Sraffians will be compelled to return to Marx.

It is the extended reproduction of capitalist relations of production which can explain why real wages and conditions of production bear such a relation to one another that surplus, profit and growth capacity exist and continue to exist in a capitalist society. The Sraffians, who treat the production process as a technical process of conversion of inputs into outputs and who refuse to acknowledge the unigueness of labour-power and process of exchange between capital and labour, cannot comprehend this.

## ANALYTICAL MARXISTS' ANALYSIS

The trace of advocacy of the surplus approach to profit, which we find among Sraffians, cannot be found among the

Analytical Marxists. They deny any role for the surplus labour in the explanation of the existence of profit. The contention that exploitation of labour or surplus labour form the bedrock of the phenomenon of profit do not find any place in this analysis. Morishima's postulation of the Fundamental Marxian Theorem which has come to be treated as a modern and rigorous explanation of relation between exploitation of labour/surplus labour and profit only meets ridicule in their hands. Elster writes, "Morishima has proved as a 'fundamental theorem' of Marxian economics that positive profits are possible if and only if there is a positive rate of exploitation. This equivalence, however, does not show that exploitation is a condition for the possibility of profit, no more than correlation in general can show presence of causation. In fact, similar fundamental theorems can be proved with respect to steel or any other basic commodity. The central fact underlying these theorems is that profit, interest and economic growth are possible only because man can tap external sources of raw material and energy ... Obviously and tautologically profits are possible only because workers do not consume the whole net product, which in some circumstances amounts to their being exploited. This, however, does not prove that the workers have a mysterious capacity to create *ex nihilo*. To summarise, Man's ability to tap the environment makes possible a surplus over and above any given consumption level. Whether this surplus should be used for more workers consumption, for capitalist consumption or for investment is a further question that bears no relation to the issue of the ultimate source of profit" (1985,p.141). Similarly Roemer writes, "The FMT is robust, the error lies in the inference that its veracity implies that profits are <u>explained</u> by the exploitation of labour. For, as many writers have now observed, <u>every</u> commodity (not just labour-power) is exploited under capitalism" (1986b,p.265). It is not that they are only opposed to Morishima's analysis. They in general, do not subscribe to the idea that exploitation of labour explains the existence of profits and they look at the concept of exploitation with a lot of scepticism. For instance, Roemer writes, "There is in general, no reason to be interested in exploitation theory, that is, in tallying the surplus value accounts of labour performed versus labour commanded in goods purchased... all commodities are exploited under capitalism not only labour-power and so the exploitation of labour does not explain profits". And, "the exploitation of labour is not the explanation for profits and accumulation any more than is the exploitation of oil or corn or iron" (1986b, p.262 and 266). Roemer also writes, "Exploitation based on the accounting socially necessary labour time is not a concept of rock bottom interest in Marxian political philosophy... surplus labour accounts do not always correspond to our intuitive notion of exploitation. The discrepancy between the labour expended by a worker and the labour embodied in the commodities which his wages are capable of purchasing turns out not to be a reliable statistic of the ineguality in the ownership of the means of production" (1986a, p.139). Given this stand, it is no wonder that the bourgeois view that each factor earns its appropriate returns appears as possible.

In consonance with this, they go a step further and say that exploitation of labour has nothing to do with capital accumulation. This is because, in their opinion every commodity is exploited in a surplus producing economy and labour power does not hold any unique role in this regard. As a result of this, they clearly state that capital accumulation can be explained as a technical fact by choosing any commodity as a value numeraire. (Roemer, 1986b,p.102). They consider any emphasis on the labour process as the centre of Marxian analysis of exploitation and classes as being misplaced, as it "can lead to faulty, or at least to a non-materialist analysis" (Roemer, 1984,p.198). They want to shift the focus from the domination of wage labour by the capitalist in the labour process to the way initial unequal distribution of endowments or property relation are maintained.

For this, the Analytical Marxists largely depend on Roemer's analysis of 'General Theory of Exploitation and Class' (1982b). In this he strives to show that exploitation can exist even without the presence of labour-power as a commodity and labourer as the owner of that commodity in the market. Though at some places Roemer argues that his explanation of exploitation, in terms of general equilibrium models, is the closest to Marx's explanation of it through the unique nature of labour-power and surplus value, his basic conviction is that exploitation in capitalism could be better explained without any reference to labour power or labour values. Labour values and the consequent analysis of exploitation of labour in the production process, in his view are antiquated tools which could not hold up against modern standards of generality and rigour. Roemer, along with other Analytical Marxists, has come to locate exploitation in the unequal property relations or initial endowments. He contends that exploitation should be conceived of as an injustice in the distribution of income resulting from a distribution of endowments which is unjust.

Before he embarks upon the proof of the invalidity of Marx's explanation of exploitation, Roemer places before himself a new problem - which in fact settles the issue: How to explain the presence of exploitation in socialist countries? To solve this problem he calls upon a change of view for the phenomenon of exploitation: "The institutional dimension we are now required to vary is one labelled 'ownership of the means of production', not the one with which Marx was concerned, labelled 'coerciveness of institution of labour exchange", and Marx "required a theory of exploitation that is robust even when one relaxes the institutional specification of an economy concerning the coerciveness of its institution of labour exchange, we require a theory of exploitation that is robust even when one relaxes the institutional specification concerning the private locus of ownership of the means of production" (Roemer,1984,p.185-6). The result of this treatment is that the emphasis has shifted from relations of production to property relations or differential endowments.

Armed with this alternative, Roemer sets out to search for exploitation in the capitalist economy, and claims to have taken Marx's model as the point of departure: "Since the Marxian exploitation is the kind of exploitation we best understand, a natural approach to conceiving of general theory is to perturb the institutional environment in which Marxian exploitation continues to exist. How robust is the exploitation phenomenon with respect to changes in its institutional habit?" (Roemer,1984, p.187).

At the first instance, Roemer conceives of a model representing pre-capitalist subsistence economy. All producers, in this model, participate in production, but without a labour market and accumulation (but with differential endowment i.e., 'different vectors of produced goods'!). The one who puts in more than the socially necessary labour time, under this dispensation, is exploited by the one who puts in less than socially necessary labour time. This is a result of superior initial endowment of the means of production of the exploiter who will be able to produce goods embodying the market value of his subsistence package by working less time than the exploited. Exploitation, in this model, is mediated entirely through the market for produced commodities and the cause of exploitation is located in the distribution of initial endowments or property relations. This result, Roemer claims, "forces us to reconsider the claims of classical Marxism that the labour market and the extraction of surplus lobour at the point of production are the central loci of exploitation" (1984, p.190). He explains that in this model exploitation emerges logically prior to accumulation and **any institute** of labour exchange.

The introduction of the labour market into the model serves a single purpose: `decomposing society into classes', which was not possible in the previous case even though there was exploitation. Class configuration, under this, system, is endogeneous to the participants of the economy who relate themselves to each class according to their optimising solutions, with the given endowment constraint. This gives rise to what Roemer calls, `Class Exploitation Correspondence Principle (CECP)• while hirers of labour are classified as exploiters, sellers of labour are classified as exploited. When compared to the previous mode, no substantial change is noticed here. Exploitation is still shown to be the result of differential endowments and not because of the hiring and selling of labour-power. The only function of the labour market is to mediate exploitation, while this function in the first model was done by the market for produced goods.

In the next step Roemer attempts to show that this class-exploitation correspondence can be generated even without any institution for labour exchange. Here he substitutes a credit market for labour market. The poor producer in order to reach the optimum position, has to borrow from the well endowed one, who in turn has to lend in order to reach his optimum: lenders form into an exploiting class while borrowers become an exploited class. So to prove the existence of exploitation let alone labour values, labour exchange is also not necessary. Roemer claims: "The heresay is complete: Not only does exploitation emerge logically prior to accumulation and institution for labour exchange, but so does the articulation of exploitation into classes" (1984, p.196).

Besides these models in a subsistence economy, Roemer also examines the system with accumulation where all agents want to maximise their revenue. An individual is exploited, under this dispensation, if the bundle of commodities he/she consumes contain less time than the time he/she spent in production. The converse is the case with the exploiter. In the words of Roemer, "an exploited producer is one who cannot possibly command as much labour value, through the purchase of goods with his revenues, as the labour he contributed in production, and an exploiter is one who unambiguously commands more labour time through goods purchased no matter how he dispenses his revenues." (1986b, p.96).

Roemer also contends that though surplus is also produced under socialism and feudalism as it is in capitalist mode of production, classical Marxist theory does not adeguately distinguish among differences in nature of surplus produced in these modes of production, and that this can be successively done with the help of property relations and game theory approach (Roemer, 1984,p.209).

## A CRITICAL APPRAISAL

A close examination of Roemer's models clearly shows that they are arbitrarily formulated and are scarcely in consonance with the spirit of Marx's analysis. Apart from internal inconsistency, when related to Marx's analysis these models are arbitrarily formulated and are also ahistorical[7]. In these, the historical specificity of the capitalist mode of production is lost as they are reduced to pre-capitalist models, attributed with the features of capitalist economy.

Roemer's treatment of the game theoretic models is ahistorical not just because the models are not specified properly, but in them the time element is left out. As a result they remain static and fail to explain the transition from one model to another. (Nadvi, 1985,p.1481 and Ranadive, K.R. 1987,p.PE-3) Roemer also accepts this criticism saying that it is the limitation of social science itself (Roemer, 1986 a,p.138). It is to be remembered that it is he who claimed that the approach of methodological individualism and game theory is largely one that is useful in a dynamic setting (Roemer,1982a,p.514).

Another issue related to this is that of endogenity of the process. Roemer claims that in his models exploitation emerges through endogeneous process. He also explains that exploitation is the result of the inequality in the initial endowments. In his model alongwith preference and technology, initial endowments are given. That is to say the initial endowments, or what is popularly referred to, in Marxian economics as 'primitive accumulation' or what he calls 'the vector of produced goods' is left unexplained. In other words initial endowments remain an exogenous factor. It is the initial unequal distributation of endowments that explains the existence of exploitation. That is to say that the roots of exploitation lay in the exogeneous factor of initial endowments. Then to say at the same time that exploitation emerges endogeneously and that initial endowments which leads to exploitation are given will not be correct. In order to absolve himself of these charges he says, "The historical process which gave rise to the initial endowments where my model begins is not a subject of my analysis. That is a topic for a historian" (1986a,p.138). This shows that Roemer's stand that the approach of methodological individualism and game theory is largely one that is useful in dynamic setting, that it is concerned with how one gets from one situation to another and that it is of paramount importance for statements about transition is of no consequence. (Roemer 1982a,p.514-7).

It is based on these models that Roemer builds his case against Marx's explanation of exploitation. The given inequitable endowments of property relations, through the exchange of commodities between individuals, is said to generate exploitation. The failure to account for the origin of the 'given' endowments erodes the explanatory power of these models. Because of this property relations approach the contradiction between big capitalists and small capitalists may also be described as exploitation of the later by the former there by sidelining the exploitation of proletariat by the capitalists for which introduction of capitalist relations of production is a must. This approach can only lead to the mystification of exploitation. In the absence of the examination of production conditions this will lead to `metaphysical or juridical illusion' (Marx, Collected

Works, vol.39,1982,p.99). Further coerciveness of labour exchange, property relations and relations of production are interrelated ones and property relations cannot be abstracted from the other two. The given property relations can only be explained as the outcome of particular relations of production. The neglect of the relations of production can lead to obscuring the real meaning of the property relations. This applies to Roemer's explanation of capitalist exploitation through unequal property relations. In his analysis property relations become the all important thing and relations of production pale into insignificance. As argued by Lebowitz, differential ownership by itself could not explain capitalist exploitation and capitalist relations of production were to be brought into the picture (Lebowitz, 1988, p. 205-9). The capitalist mode of production requires more than differential ownership. Under it capital has seized possession of production; and means of production and product are owned by the capitalists. Labourer, the owner of labour-power has to sell it to the capitalist for a wage and work under its guidance to whom the final product belongs. It is this wage labour-capitalist relations of production, but not differential endowments that characterise the capitalist mode of production and that can only explain capitalist exploitation. In this regard the labour theory of value helps as a stepping stone in the explanation of extraction of surplus value or exploitation under the regime of capitalist relations of production. Karl Marx's labour theory of value, through considering capitalist economy as consisting of immense collection of commodities, through explaining the substance and magnitude of value with the help of socially necessary labour time, with commensuration of labour time made possible as a result of particular form, abstract form, taken by labour under capitalist relations of production and distinguishing between use value and exchange value of labour, through explaining that aim of capitalist producer is the production of exchange value but not use value, through division of the working day into necessary labour time, expenditure of labour needed to obtain labour-power in the market, and surplus labour time during which labour works over and above them needed, tries to explain the presence of exploitation in capitalist production. As commented by Khalid Nadvi, the labour theory of value provided "the proof of the existence of capitalist exploitation" (1985, p.1484).

The burden of Roemer's models is that for the presence of surplus, exploitation of labour is not necessary and that surplus labour accounts do not always correspond to our intuitive notion of surplus. But the very construction of these models helps to disprove Roemer's contentions. This is the case whether we examine the pre-capitalist subsistence models or one where accumulation is introduced. This arises because of Roemer's failure to separate labor magnitudes from expropriation of surplus. His conception that the one who puts in larger than necessary labour time is exploited by the one who puts in less than necessary labour time invariably brings in labour value magnitudes. As argued by Ronald Kieve (1986,p.562), Roemer's definition of exploitation was not only wholly dependent upon and derived from the labour theory of value, but the models of exploitation he had constructed gain whatever credibility they had from the theory he had set out to disprove: the objective validity of the labour theory of value shatters the very structure of those models.

Labour is the eternal condition of Man's existence. It can be said that labour is the mode of existence of Man. The fact is so obvious that Marx sarcastically remarks that, even a child knows that a nation cannot exist without labour even for a few weeks (Marx and Engels 1975, p.196). Man, through labour, by acting on nature tries to produce things necessary for his/her existence. In the process of struggle with nature productivity of labour reaches a certain stage when man can produce surplus over and above that needed to satisfy his/her necessities. While interacting with nature or entering into relation with nature people also enter into relations among themselves. In other words, people work under definite relations of production. According to the extant relations of production wealth produced in a society is distributed among different classes. While one class has the monopoly on the conditions of production, another class is denied the ownership of it and is compelled to work under monopoly class for its existence. While one class appropriates the surplus, another class is given only bare minimum things. The former is the exploiting class, and the latter the exploited class. These exploiting and exploited classes take different forms under different modes of production depending on different relations of production: slave, feudal and capitalist. Accordingly, surplus produced also take different forms. Under capitalist relations of production this surplus takes the form of profit. In other words profit is the form that exploitation of labour takes in the capitalist society. The Analytical Marxists recognise only first part of this explanation. This becomes clear when Elster (1985,p.141) says that profit is possible because man can tap external resources. The way produce is distributed among classes is of no concern to him. This distribution of produce among classes, for him, does not explain profits. They take into account only technical relations and refuse to consider the particular relations of productions under which these technical processes take place. This attitude of theirs comes out clearly when they (Elster, 1985,p.141; Roemer, 1986b,p.262) examine Morishima's Fundamental Marxian Theorem[8]. They all have praise for Morishima's modern and rigorous analysis. But they do not like to accept that exploitation lies behind profits. The reason they adduce is that correlation in general cannot show causation. In that case then they too have to abandon all their mathematical models on which they base their refutation of Marx's contention that exploitation is the source of profit. The Analytical Marxists' opposition to Marx's analysis of profit arise from their neglect of relations of production particular to capitalist mode of production. It is not mere 'inequality in the distribution of productive resources', but it is inequitable capitalist relations of production where labourer is alienated from the conditions of production and is forced to put his capacity to labour, labour-power, on sale that leads to the formation of profits.

Related to this, the Analytical Marxists argue that the labour process need not be examined to account for exploitation and that it is wrong to search for coercion at the level of process of production where surplus is extracted from laborers. They consider the labour process as a technical process in which inputs are transformed into outputs, but not as a process of value creation. Besides this Roemer (1986b,p.99) also makes it quite clear that his analysis is market dependent as opposed to Marx's production dependent analysis. In other words only market mechanism can explain the presence of profits. This is a reflection of their reliance on methodological individualism and neo-classical analysis. As a result of this, they neglect the sphere of production and rely on the sphere of circulation. They leave the essence and stick to appearances. They find comfort only in the fetish world of the capitalist market. In opposition to this, Marx's value analysis facilities the consideration of labour process as valorization process. It helps the integration of spheres of production and circulation: while surplus value is created in the sphere of production, it is realised in the sphere of circulation. Through the integration of these spheres Marx's analysis helps to demystify exploitation in capitalist society.

In this background, Roemer's comment that Marx did not adequately distinguish among different types of surplus production appears baseless. Surplus labour takes different forms in different modes of production and credit should go to Marx for delineating the nature of different forms of this surplus. It is to **be noted** that Marx also recognised that surplus would also be produced in a socialist system and it would be used in a planned way to serve the interests of the proletariat. (Tony Smith,1989,p.336).

While criticising Marx's dialectical method Elster alleges that Marx springs labour-power, as a unique commodity, as a surprise on unsuspecting readers (Elster,1985,p.39-45). Opposition of Elster and other Analytical Marxists to Marx's explanation of profit arises from their near hostility to Marx's method of dialectics. It is with the help of dialectics that Marx recognises the contradictory nature of the capitalist mode of production where two antagonistic classes are to interact in the production process under unequal relations of production. Only the examination of this antagonistic relations of production can capture the origin of profits. Marx's method instead of mesmerising people, makes them aware of the fundamentally contradictory and transient nature of capitalist mode of production.

## UNIQUENESS OF LABOUR-POWER

**Within** the analysis of the exploitation of the labourer as the source of profit, Marx's contention that labour power has the unique capacity of producing over and above its exchange value has come under scathing criticism. Both the Sraffians and the Analytical Marxists deny that labour power as a commodity possesses any peculiar characteristic of creating value over and above what is needed to acquire it. Both of them argue that any other commodity that goes into the production of every other commodity can be used to explain the phenomenon of profits, without resorting to the exploitation of that peculiar commodity 'labour-power'. They even talked in terms of an energy theory of exploitation, a steel theory exploitation, and a corn theory of exploitation.

Reviewing Sraffa's work Joan Robinson commented: "the commodities produce themselves with a physical surplus." (1965, p.8). This finds its echo in the writings of other Sraffians like Steedman and Hodgson, leading to the conclusion that not only labour-power but other commodities also are capable of producing surplus. One of these aspects comes out when Steedman refuses to acknowledge the distinction between labour and labour-power. He writes, "Let us refer to whatever it is that workers sell to capitalists as 'it', thus postponing the question wheather 'it' is best described as labour, as a labour-power, or as disposal over the workers time by definition, 'it' is exchanged but <u>'it' is most certainly not produced, let alone produced for the explicit purpose of sale'</u>. Thus 'it' is not a product and the question how 'it' can be a product which exchanges according to the 'law of value[1] and yet allow for the existence of a surplus is thus simply a <u>non</u>-question... Interestingly, Marx repeatedly gives oblique recognition to this fact, for he often refers to labour-power as a 'peculiar commodity[1]; and he takes the value of this "peculiar commodity' to be different from that of commodities in general by containing a historical and moral element. In each case Marx is recognising, in roundabout fashion, that it is actually inappropriate to call labour-power a commodity at all! 'Labour power is a commodity and thus has a value' is at best a figure of speech, a somewhat forced analogy, which enables one to give the semblance of a solution to a 'problem' which actually requires no solution whatever. While the concept of labour power was intended to give greater coherence to the 'law of value' Py bringing labour under its sway, it actually reduced the coherence of Marx's discourse, by forcing him to use the concept of commodity in a merely metaphysical manner at a crucial point within his theory" (Steedman,1982, p.149-50).

Steedman further writes, "For Marx, however, the concept of labour-power seemed to do more than solve the (non-) problem which he emphasised in the *Critique*. It was supposed to assist in revealing the origin of surplus value, to provide a basis for discussing absolute and relative surplus value and to expose the 'false appearance' of the wage as payment for a full day's work" (Steedman,1982,p.151). But "Nor does that concept assist in explaining the existence of surplus" (Steedman, 1982,p.152).

Then the formalisation developed by Steedman on the basis of Sraffa's analysis comes in handy for Hodgson to prove that labour-power is in no way unique from other commodities. The following is the way he adopts the formalisation: "The material inputs of a capitalist economy are presented in the usual matrix form. One column (or row) is added to the nth position to represent the labour inputs in each industry, and one row (or column) is added in the nth position to represent the real wage, in the words, the 'inputs in the domestic sphere of economy. A zero occupies the diagonal at the nth position. This augmented matrix is sufficient to determine prices and the rate of profit.

"If we wish to calculate the amounts embodied in each commodity we detach the nth column and nth row, leaving the original material inputs. The embodied - labour values are calculated with a well-known expression that includes the truncated matrix and the vector representing the labour inputs. The point, however, is that we can formally carry out the same operation for any row and corresponding column. Detach, say, the forty fifth row and forty fifth column. We assume that the forty fifth commodity is for example, lubricating oil. The forty fifth column (or row) gives the inputs of lubricating oil. This vector along with new, truncated matrix is used in the same expression to calculate the quantatives of ' embodied lubricating oil'.

"The point of this formal algebra is to demonstrate that the role of labour as a source and measure of value is indiscernible from that of any other commodity. Any other 'source' may serve as well in the formal determination of prices. The relative price system remains the same whether we start from labour or anything else. At the formal level there is simply no difference" (Hodgson,1981b,p.82). Using a similar formalisation Hodgson goes on to prove a corn theory of exploitation, a steel theory of exploitation and a electricity theory of exploitation.

Hodgson also argues, "We cannot simply assume that labour creates all values and then conclude that due to the existence of surplus value it is demonstrated that the working class is exploited. Such a conclusion follows, tautologically, from existing assumption... Regarding exploitation, a heuristic assumption does not provide a conclusive argument" (1982b,p.261). He attributes Marx's explanation of the unigue nature of labour power to the monistic interpretation of the phenomenon, the 19th century technology in which labour was the predominant part of the labour process, the resultant predilection of Marx and classical economists to reduce costs to labour, and the then prevailing notion of 'fairness'. (Hodgson, 1980, p.260-2; 1982b,p.59,80-82).

Unlike other members of his school, Hodgson intends to take note of the peculiar character of labour-power as variable capital, but the explanation he adduces to it meets the same fate as that of the above. He attributes variable nature to labour-power not because of its ability to produce over and above its exchange value but to indeterminate quantity of work done by the worker on the shop floor as a result of the subjective relations between the labourer and the capitalist which he terms as class-struggle. Hodgson argues that resort to this peculiar character of labour-power to explain exploitation is not correct. He argues, "exploitation is a rich and complex phenomenon. The one dimentional concepts of surplus labour and surplus value do not do it justice" (1981a,p.231).

The primacy bestowed on 'labour-power', as a unique commodity that produces more value, over and above what is needed to obtain it, is disputed by Analytical Marxists also. Roemer argues, "Labour power as a commodity is not unique in its magical property of producing more value than it embodies. Indeed, in an economy capable of producing a surplus, any commodity has this magical capacity. If we choose corn as the value numeraire and calculate embodied corn values of commodities and the embodied corn value of corn, we can prove that the economy is capable of producing surplus if and only if corn is exp]oited, in the sense that corn value of a unit of corn is less than one. There is absolutely nothing special about labour-power in this regard". (1986b, p.100), (Also see Roemer,1982b, p.183-188).

The Analytical Marxists argument is further advanced by Elster who argues that labour need not be a component of all goods and there may be other common something that can explain exchange values. He says, "As to the first objection an economy worked by highly trained monkeys could have well defined relative prices and or well defined rate of profit, with no labour being used. The Von Neumann growth model can in fact be understood in this light. More specifically imagine a fully automated economy" (Elster,1985,p.139-140). In his opinion utility or usefulness and scarcity fit into the agenda of common something

(Elster,1985,p.140-141). Here the neo-classical elements make their full appearance. But this is not enough. In his opinion it is the motives of individual economic agents which can explain the phenomenon of accumulation. It will do better to quote the passage in full because of its methodological implications:

"Marx tries to perform with a conceptual sleight of hand the task to which Max Weber devoted vast empirical studies to explain the emergence of the reinvestment motive in early capitalism. No short-cut, however, is possible - unless one already has answers. The explanation of saving and investment must be found in the motives of individual economic agents. It cannot be derived from a conceptual analysis of money.

"Having deduced capital - that is self expanding value - from the conception of money, Marx has to explain how the creation of surplus is possible. In well known dramatic pages in Capital - I Marx sets the scene for a derivation of labour-power as the condition of possibility for the existence of a general surplus, as opposed to the surplus that any commodity owner may realise at the expense of others ... the deduction is invalid, since any commodity may be taken as the one whose exploitation makes the economy productive and hence makes a surplus possible. Yet this is a honest mistake, unlike the fundamentally misguided reasoning that underlies the attempt to deduce capital from money. Still, even had the derivation of labour from capital been successful, it is hard to see what insight would thereby have been gained. Surely the demonstration would not provide an explanation of the presence of exploited labour in the production process, since the premise - the existences of capital - is itself derived in such a shaky manner.

"The defects of the conceptual deduction are linked to those of methodological collectivism. It is infact, difficult to decide whether the self determination of capital is conceptual or behavioral - or whether we are meant to conclude that this very distinction is superseded. In arguing against these practices one encounters the familiar difficulty of refuting a confused position which by its very incoherence, resists being pinned down sufficiently to allow a precise rebuttal" (Elster,1985, p.39).

In proving that labour-power is in no way different from other commodities and that other commodities are also capable of producing surplus, both the Sraffians and the Analytical Marxists follow similar formalisations. They reduce the element of labour to a bundle of wage goods needed for its subsistence. In this they reduce labour to 'an animal. Because of this labour is indistinguishable from the commodities used as means of production. Labour disappears from the scene and only wage goods remain in its place. In the resulting eguation system only goods remain. Certain goods used as inputs automatically lead to output of goods. Commodities are produced by means of commodities! If only labour-power is not treated as a commodity. In this exercise to equate labour-power with other commodities like corn and steel they confuse an accounting property with a distributional relation, or in other words they confuse a technical relation with social relation. When they try to explain exploitation in terms of corn or steel values in the sense of corn or steel values being less than one or when they describe labour-power as if it is a product of labour industry it is to be construed that either they attribute distributional relations to inanimate things or reduce labour-power to an inanimate thing. Net outcome appears to be the substitution of technical relation for social relation as in their conception technical relations generate all outcomes that social relations generate in Marx's analysis. This approach leads to misconceptions about reality, because the real wage of labour does not represent a technical datum but a distributional relation in the social production, and the payment for the use of corn or steel as objects or instruments of labour out of net-product does not represent their innate productivity but the appropriation of a share of net-output by non-producing class, i.e., capitalists.[9] The significance of Marx's analysis, in this regard, lies in facilitating the clear understanding of this social relation wherein the labouring class is exploited by the capitalist class.

In their efforts to disprove Marx's contention that exploitation of labour-power is the source of profit the critics set aside the distinction between variable capital and constant capital. In the process they lose track of the secret of surplus value. They end up arguing that not only labour-power but also every other commodity is capable of producing profit, contrary to their own remonstrations that they agree with the surplus approach. (See Marx, 1956, p.222-223; 1971, p.179).

Another common thread that runs through the writings of both the Sraffians and the Analytical Marxists is that Marx first assumes that the labourer produces surplus value and then tautologically comes to the conclusion that labour is exploited and exploitation is the source of profit. Contrary to this Marx (1973,p.274-309) clearly explains the qualitative difference between labour-power and other commodities. Instead of assuming the uniqueness of labour-power Marx derives it from the relations of production particular to the capitalist mode of production and the nature of exchange between capital and labour. The distinction between simple exchange of commodities and exchange between capital and labour shows the unique nature of the commodity labour-power. Marx's analysis of uniqueness of labour-power helps to demystify the trinity formula according to which each factor earns its own income. Marx's analysis of surplus value and formation of profit clearly shows that while workers get only subsistence wages, capitalists obtain, after paying for inputs, net-output for their control over the conditions of production. Contrary to Steedman's criticism Marx's analysis of the nature of labour helps to obtain a coherent picture of the capitalist economy.

As pointed out above Hodgson argues that Marx had chosen labour-power because of the then prevailing technical conditions.[10] This argument is completely wrong. As opposed to this. "The choice of labour over other possibilities is not merely the result of negative process of elimination, but rather it is based on the positive appraisal of the central position of labour among the human activities which order social relations, and therefore exchange relations" and Marx's, "choice of labour value framework was not tactical but fundamental: it was not a matter of finding the easiest path into the minds of the contemporaries, but of developing tools to reveal laws of social reality that are hidden from a casual viewer. It was far Marx... a flatter of transcending the commonsense view of the world, not succumbing to it for tactical reasons" (Laibman, 1980,p.286-7). Marx attributes the uniqueness to labour-power not because of technical conditions prevailing during his time but because of its place in the capitalist relations of production.

Further, Roemer adds that the labour market does not exist at the level of abstraction traditionally employed in classical Marxian value theory. Under the generalized commodity production of capitalism labour-power also becomes a commodity and the labour market becomes a component part of the explanation of dynamics of the capitalist economy and it cannot be left out while explaining any facet of capitalist production. It is under capitalism that the labourer becomes a commodity, unlike other modes of production like slave or feudal modes of production when labour was turned into the property of the owner or was tied to the land, which can be freely bought and sold as it is freed from the instruments of production and is forced to put itself on sale. It is the wage labourer, who owns the commodity labour-power and lives by selling it, who makes all the difference to the capitalist mode of production. To abstract from this crucial element is to totally distort the picture of the capitalist economy. It is the examination of the nature of this unique commodity that gives vital clues as to the dynamics of the capitalist economy. To attribute arbitrariness to this exercise is to totally neglect Marx's method of analysis wherein the abstraction is a product of real historical process. It is only by passing over or even totally opposing this process that Analytical Marxists claim that any other commodity, like corn or steel, is capable of producing surplus in a surplus producing economy. Though they concede that without the presence of some commodities capable of producing over and above than what is needed to replace them on the market, the generation of surplus and accumulation of capital cannot be explained, their method of ruling out the peculiar character of labour-power is totally flawed.

Though Roemer says that what is to be taken into consideration is the theory of history rather than the theory of value, as the theory of value is only a corollary of the theory of history, and that it is more rewarding to look at history as the struggle of one class against another class rather than as struggle of man against scarcity which may entail a corn theory, a steel theory, etc., depending on development of the society, he neither specifies to which theory of history he subscribed when he tries to describe corn or steel or other commodities theory of exploitation nor theory of value which is a corollary of his theory of history. Here it is to be noted that whatever commodity unit is taken as numeraire it will only serve the purpose of an accounting device. Even if labour-power is taken as a mere numeraire it also serves the same purpose. This numeraire business is of no help in accounting for the creation of value or origin of surplus. Marx's value analysis, instead of elevating labour as the all important numeraire, through expounding capitalist relations of production brings into relief the role of labour vis-à-vis capital. Marx delineates the process through which wage labour emerges and the way labour takes the form oi abstract labour under the regime of capitalist relation of production. It is this wage labour and abstract labour that forms the bedrock of Marx's analysis of value and exploitation, not labour as such. With capitalist relation of production as the background, what ever commodity is taken as numeraire it should be possible to explain that it is the exploitation of labour-power that holds the key to the dynamics of capitalist economy.

The methodological influence of neo-classical analysis becomes quite apparent in the writings of Elster, one of the Analytical Marxists. In his opinion the explanation of accumulation, or what he calls savings and investment, must be found in the motives of individual economic agents. According to this explanation accumulation takes place not because the capitalist class exploits proletariat and converts the resulting surplus value into capital accumulation, but because 'rational' individual economic agents think it fit to take place. Here analysis of the class behaviour of agents is relegated as is the case with Analytical Marxists and examination of rational behavior of the individual agent takes the centre stage. Surplus arises not because of exploitation of the labourers but because of the rational individual's decisions. In the explanation of surplus and profit the defects of Marx's analysis can be traced, in Elster's opinion, to Marx's faulty methodology, what he calls methodological collectivism. In his opinion it must be replaced by methodological individualism. Here it need to be pointed out that there can be no rational individual carrying on his activities according to set non-contradictory principles, immune from the surrounding totality. The individual, to a large extent, derives his nature from the society of which he is a member. This is the case more so with class divided society like capitalist society. One has to be on one or the other side of the class relations. One can be either a capitalist or a labourer, exploiter or exploited. (Rosdolsky, 1977, p.200). Capital accumulation, hence surplus production can be explained only by exploitative class relations, not by the rational motives of individual economic agents.

Engels writes, "In our present day capitalist society, labour-power is a commodity, a commodity like any other commodity and yet quite peculiar commodity. It has, namely, the peculiar property of being a value creating power, a source of value, and, indeed **with** suitable treatment, a source of more value than it itself possesses" (Marx and Engles, 1975,p.148). As a result of the formalisation adopted by Sraffians and Analytical Marxists labour-power is not treated as a commodity, let alone a peculiar commodity. Instead it is turned into a bundle of wage goods. Because of this, "the distinction between variable and constant capital, which decides everything, is blotted out, hence the whole secret of the production of surplus-value and of capitalist production, the circumstances which transform certain values and the things in which they present themselves into capital are obliterated" (Marx,1956, p.222-3).

## Positive Profits and Negative Surplus Value

In the presence of joint-products and fixed capital, Steedman argues, positive rate of profit and prices will take place even in the presence of negative surplus value, and the bundle of commodities appropriated by capitalists actually has a negative value in aggregate. He says that surplus value, defined as total living labour minus the total labour embodied in the worker's real wages- where each commodity value is defined in Marx's additive way - will be found to be negative, even though the rate of profit and prices of production will be found to be positive (Steedman,1981a, p.150). In this exercise in the tradition of Sraffian analysis, Steedman's aim is to show the futility and irrelevance of Marx's value analysis. He writes, "The implication of this result should be clear enough: commodity values and surplus value, as Marx defined them, are not merely irrelevant to the determination of the profit rate (and prices of production) but actually lead to results which deprive such value magnitudes of any significance which Marx might have sought to attribute to them. Marx's concept of additively defined values should be abandoned" (1981a, p.150). He also assures us that such an abandonment in no way leads to the rejection of a materialist account of capitalist economies and their working (Steedman, 1981a, p.162).

To demonstrate this Steedman uses a model of the process of production, both processes being joint-production processes, which produces positive quantities of each commodity. Also wages are paid at the end of the period. In this model it is also assumed that the real wage bundle contains for every 6 units of labour 3 units of the first commodity and 5 of the second, $p_i$ being the price of the first commodity, $p_{ii}$ the price of the second commodity and r the rate of profit. The model can be represented by the following equations:

$$(1+r)5p_i+1 = 6p_i+1p_{ii} \quad \text{———} \quad 1$$

$$(1+r)10p_{ii}+1 = 3p_i+12p_{ii} \quad \text{———} \quad 2$$

$$3p_i+5p_{ii} = 6 \quad \text{—} \quad 3$$

From these equations it can be calculated that

$r = 20\%$, $p_i = 1/3$ and $p_{ii} = 1$

Then from the given specification of the model he attempts to calculate labour values and surplus value. Here $l_i$ stands for labour value of the first commodity and $l_{ii}$ for labour values of the second commodity. He takes recourse to simultaneous equations:

$$5l_i + 1 = 6l_i + l_{ii} \qquad \text{———} 4$$

$$10l_{ii} + 1 = 3l_i + 12l_{ii} \qquad \text{———} 5$$

From this he calculates that $l_i = -1$ and $l_{ii} = 2$.

Then he substitutes these values into the equation of wage bundle and net investment or surplus, to calculate the value of labour-power and the surplus value appropriated by the capitalist. He also avers that if the calculations are correct we must find that (V+S) = 6 = total labour employed (ibid, p.154).

$V = 3x(-l)+(5x2) = 7$

$S = 5x(-l)+(2x2) = -1$

$V+S = 7+(-l) = 6$

From this it is evident that while the surplus value (-1) is negative, rate of profit (20%) is positive. This enables Steedman to conclude that "with the joint production, the existence of positive surplus value is neither necessary nor a sufficient condition for the existence of positive profits" (1981a,p.155).

In his discussion of Morishima's criticism Steedman makes it clear that the contentious issue is the interpretation of Marx's concept of value. Paradoxically at the same time he affirms that he has no quarrel with Morishima on the latter's Generalised Fundamental Marxian Theorem (GFMT). Under GFMT Morishima tries to prove that even in this presence of fixed capital and joint-products Fundamental Marxian Theorem that exploitation and surplus value are necessary and sufficient conditions for the existence of profits. Steedman disputes that Morshima's concept of 'true values' is completely consistent with Marx's basic definition of value[1] (1976, p.607).

Steedman's presentation of the issue of positive profits in the presence of negative surplus value at a first glance appears to be quite impeccable and sounds the death knell of Marx's theory of profits, not only of Marx's labour theory of value. But a closer look at his analysis shows that, it is riddled with many inconsistencies. Above it is seen that the two processes produces both of the two commodities, they are joint production processes. From it, it can be seen that while in the first process one unit of labour employment leads to net product of one unit of each commodity, another process with the employment of one labour unit leads to net of product of 3 units of the first commodity and two units of the second commodity. That is to say with regard to both of the commodities, the second process is more productive that the first process. In other words the first process is inferior to the second process. Under normal economic conditions no one will invest in the first process as, with regard to both of the commodities, the second process is more productive. If one transfers the investment from the first process to the second process the capitalist will benefit absolutely. If on the other he/she transfers from the second to the first process, he/she will incurr losses. In this conditions it will be no invention to say that, in the given distribution of labour, there will be negative surplus value. The negative

**surplus value** is the result of the presence of absolutely inferior processes in the economy. This was also pointed out by Wolf-Stetter, "a necessary condition for the coexistence of one negative labour value with the existence of a Sraffa-price system is, in a stationery state, that one of this activities is absolutely inferior; but not absolutely inferior in an economy growing with a golden rule rate of profit" (1976,p. 868) . The fact that the phenomenon **of** negative values is not specific to joint product process, but also to the single product process, when two processes produces the same commodity and one of it is absolutely inferior to **the** other is pointed out by Farjoun (1984,p.21). In the first process because of the hilly terrain with the help of two bags of corn two labour days leads to the production of 4 bags. In the second process, where fertile land is used, 3 bags of corn and two labour days leads to 9 bags of corn. The net product is as follows:

| | Labour days | Net product (bags) |
|---|---|---|
| Process I | 2 | 2 |
| Process II | **2** | **6** |

**From this** it is evident that second process is superior and the **first** process is inferior one. Normally only process two will **be undertaken. If** the process two is not sufficient to meet the social demand, the first process, through inferior, will also be undertaken. But in that situation differential rent will enter the picture. It is paradoxical that Steedman, a neo-Ricardian sidesteps the possibility of the presence of differential rent as pointed to by Ricardo. To quote Farjoun, "In general it turns out that problems arise either in a joint or non-joint production table only if one of the processes used is strictly worse for each and every one of its net products than a combination of other existing processes" (1984, p.21).

Now without taking the help of Farjoun or others, we can rely on Steedman himself to prove the futility of his exercise. In order to drive the meaning of negative values of the first commodity he alters the distribution of labour. Here in order to derive the same profit rate (in terms of commodities) he alters the real wage bundle to 6 units of the first commodity and 3 units of the second commodity. But it is to be noted that here the altered real wage bundle is not germane to the explanation. In this exercise he reduces the total labour units employed to 5 from 6. While he employees 3 units of labour (previously 4 units of labour) in the first process, 2 units of labour (previously 1 unit of labour) is employed in the second process. The outcome is as follows:

| | Inputs | | | | Output | |
|---|---|---|---|---|---|---|
| | Commodity I | Commodity II | Labour | | Commodity I | Commodity II |
| Process I | 15 | 0 | 3 | ——> | 18 | 3 |
| Process II | 0 | 20 | 2 | ——> | 6 | 24 |
| Total | 15 | 20 | 5 | ——> | 24 | 27 |

In this the net product is (9+7). Even when the amount of labour employed is reduced the net product of the first commodity increased by one while the net product of the second commodity remained the same. In the previous use where 6 units of labour were employed the net product was (8+7). In this case the reduction of labour instead of leading to reduced net product resulted in increased net product. From this it is evident that under normal conditions of capitalist production and accumulation the first process is not preferred because of its absolute inferiority. Steedman describes this,"Thus, by comparison with the first economy, the second has the same net output of commodity 2, yet produces one more unit of commodity 1, even though employment is one unit smaller. This is the meaning of the result that commodity 1 has a value of -1". He further says, "there is nothing strange about a negative value. It follows that there is nothing strange about negative surplus value" (Steedman,1981a,p.159). Certainly there is nothing strange about it. If a process that is not socially necessary is employed it will lead to negative surplus value, or in other words it wi]l drain the already produced surplus or accumulation. This is what Marx meant by socially necessary labour. Steedman has to labour so much in order to reinvent the proverbial wheel. From Steedman's example it can be shown that as we shift labour from the first process to the second process the net product goes on increasing.

## Fixed capital

This phenomenon of positive profits in the presence of negative surplus values is not restricted to the case of pure joint-products only. It was explained that up to this stage, in the models, all capital was treated as circulating capital. Once fixed capital is introduced, negative surplus value and positive profits will emerge. This result is based on the particular way fixed capital is treated. Steedman (1975), who made this phenomenon well known, argued that fixed capital should not be treated on the basis of linear depreciation and that it should be treated as a special case of joint-production. Once used fixed capital is treated as a case of joint production, he pointed out, the co-existence of negative surplus value and positive profits would become reality. This case was initially pointed out by Morishima. (1973,p.181-3). His contention for grafting Marxian economics on to the von Neumann stock and resulting in the Marx-Von Neumann flower is based on treating used fixed capital as a joint-product. This treatment was initiated by Sraffa (1960) and von Neumann (1945). In this Sraffa - von Neumann tradition at the end of the production period[11] two products will come out of the process: the commodity proper for which the production process is meant and the used fixed capital. In this at the end of the production period the remaining used fixed capital is treated as a new commodity. Used fixed capital is treated as output along with newly produced products. Thus fixed capital is treated as a representative of joint-products. In determining values, used fixed capital and newly produced commodities are treated similarly. No distinction is made between them. In value determination fixed capital and newly produced commodities are treated symmetrically.

Following the symmetrical treatment of used fixed capital and newly produced commodities, wherein used fixed capital is included along with the newly produced products in the output matrix: newly produced ones being on the diagonal and used fixed capital being off diagonal, and solving the resultant simultaneous equations Steedman (1981a,p.163-73) comes to the conclusion that rate of profit can be positive with respect to price even when rate of exploitation defined in terms of value is negative.

The main problem with the above explanation is the undifferentiated treatment of used fixed capital and newly produced commodities. In this treatment used fixed capital is treated as a commodity even though it never enters the sphere of circulation. The remaining used fixed capital at the end of the production period leaves the sphere of production and enters the sphere of production without ever touching the sphere of circulation (Swanson,1986,p.50). To be a commodity, a product has to pass through both the spheres of production and circulation. Unlike the treatment of Sraffa - Von Neumann tradition used fixed capital is neither produced in the process being examined nor it ever passes through circulation. The value of elements of fixed capital, like any other commodity, is determined by the process in which it is produced, but not by the process into which it used fixed capital, along with the transferred exchange value consumed and remaining use value also should be taken into reconsideration. (Marx, 1954,p.196-7; 1956,p.160; Savran, 1984,p.218).

## Conclusion

Marx's whole endeavour was to unravel the mysteries that abound in the capitalist mode of production. Because of the nature of commodity exchange, capitalist relations of production are concealed in fetishistic shroud. Marx was of the opinion that mere examination of the appearances on the surface was not correct and what was needed was the examination of the essence that lay behind the appearances. For him, appearances were only the form that essence took on the surface. The aim of scientific research should be to reach this essence. This method characterised Marx's analysis of the source of profit.

The major argument of the critics against Marx's explanation of exploitation of labourer as the source of profit is that not only labour-power but also any other commodity is capable of producing surplus and labour-power is not unique in any way. They come to this conclusion on the basis of formalisation where labour-power is reduced to a bundle of wage goods and is treated like any other commodity. The distinction between constant capital and variable capital is not taken into account. As a result, the whole secret of production of surplus value and of capitalist production is obliterated.

Critics also treat production of commodities as a technical relation where workers convert inputs into outputs. They do not recognise that people while acting on nature in order to reproduce material conditions of existence, commodities in the case of capitalism, also enter into relations among themselves. That is technical relations take place under the regime of particular relations of production. Because of the neglect of capitalist relations of production in their analysis, critics succumb to the fetishism of the bourgeois market mechanism.

## NOTES

1. Here only Marx's analysis of the phenomenon of profit is taken up for consideration. Other theories that try to explain profit like marginal productivity of capital, risk, uncertainty, and time preference theories are not considered.

2. Here interest and rent, the other claimants on the surplus value produced in the capitalist economy, are not considered separately.

3. Here Steedman's work (1981a) is taken as a representative of Sraffian analysis. Even among the supporters *of* Sraffa's analysis there are some who do not agree with the analysis of Steedman and Hodgson in regard to the explanation of the source of profit. For example Garegnani (1984,p.311) concedes that the Sraffian analysis, on which Steedman, Hodgson and others depend, does not exhibit the source of profit correctly.

4. **Also** see Marx, 1968,p.463-467.

5. The question of uniqueness of labour-power is further considered in a separate section. Before that here is a **digression:** See Steedman (1981a,p.59). Steedman uses two different formulations to express exploitation/surplus/

profit.

$$\text{I.} \qquad L > a(I-A)^{-1}w \qquad \text{or} \qquad L > v$$

$$\text{II.} \qquad \lambda^{PF}(A^{+}) = \lambda^{PF}(A + L^{-1} w.a) < 1$$

The first formulation means that total value created is greater than the value of wages or value of labour-power. Here the surplus appears to be product of labour. The second formulation means that gross output is greater than inputs, inputs consists of both material inputs and wages or subsistence. Here net output cannot *be* attributed clearly to any portion of inputs. As such instead of showing the origin of surplus it only obscures the issue. In this formalisation nature of variable capital is not noted. Here L stands for total values posited, a labour inputs w real wages, V value of labour-power, A inputs and $A^{+}$ the augmented input matrix.

6. Steedman is also apprehensive that Marx's 'assertion' of the existence of a surplus can as well be adopted by the neo-classicals. He says, "Many theories unattractive to Marx-ists have, of course, been put forward in explanation of **that persistent** relation, in terms, for example, of 'capital scarcity', 'time preference' and so on" (1981b,p.17). This apprehension is a result of his assertion that 'any theory of **why** profits are positive will at the same, be a theory of why surplus value is positive' (Steedman,1981a,p.58)

(Italics mine). While explaining how neo-classical can be included in this classification he reverses the relation between surplus and profit: instead of deriving profit from surplus, surplus is derived from profit. Contrary to Steedman's allegation Marx, instead of asserting the co-existence of surplus and profit, `explains' how surplus value is produced, how surplus value takes the form of profit and the contradiction between the two (Marx, 1959,p.48). Before Steedman Samuelson also made a similar comment, "The tools of bourgeois analysis could have been used to discover and expound the notion of exploitation if only those economists had been motivated to use the tools for this purpose" (1971,p.421).

7. See chapter - I, section on Analytical Marxism. Also see Kieve 1986,p.560-563, and Tony Smith, 1989,p.336.

8. Roemer (1981) also attempts to provide a proof of Morshima's Fundamental Marxian Theorem in his own way, (p.15-17). In this exercise also reproduction appears more as a technical possibility than the reproduction of relations of production. Also his generalisation of FMT (p.47-50) appears to be less than general as joint-products are kept out. The only saving grace of this work when compared to later writings (1986b) is that he considers exploitation as an important aspect of capitalist society.

9. Presentation here to a large extant depends on Alcorn and

Gliecher (1987).

Also see Marx, 1956,p.211,222-231.

The issue becomes even more clear if we take note of Elster's proposal to replace the labourer with a well-trained monkey or a robot.

10. As opposed to Steedman and others within the Sraffian tradition Hodgson argued in favor of taking into consideration the variable nature of labour. But the variable nature that he attributes to labour is of no consequence in explaining surplus production. Hodgson attributed variability to capital spent on labour-power on the basis that while labour-power hired is a specific quantum, the labour done is unspecific and hence variable. (1981a,p.231, 1982b,p.194).

11. The production period is a part of the production process. The production process constitutes multiples of production periods. The production period conforms to the turnover time of circulating capital and the production process conforms to the turnover period of fixed capital.

## CHAPTER -3

## RATE OF PROFIT

Marx represents the rate of surplus value as the ratio of surplus value to the necessary labour or as the ratio of surplus value to the capital spent on labour-power, i.e., variable capital $S^1 = S/V$, where $S^1$ represents the rate of surplus value; S and V stand for surplus value and variable capital, respectively. This can also be written as $S = S^1V$. Marx represents the rate of profit as the ratio of surplus value to the total capital invested. When profit is taken as equivalent to the surplus value in magnitude, since the former is only the form taken by the latter on the surface, this can also be represented as the ratio of profit to total capital. Symbolically, $\pi = S/C$ : where $\pi$ stands for rate of profit, C for total capital, constant (c) and variable (V) capitals combined together. The rate of profit $\pi$ can also be represented as $S^1/K+1$, where $K$ stands for organic composition of capital c:V.

For the capitalist it is the rate of profit, which appears to be significant, as it measures his gain over total capital. Even to exploit the labour-power through expenditure on variable capital, he has to advance constant capita] meant for means of production. Without advancing variable capital, the capitalist cannot make constant capital operative. In his eyes, total capital contributes to the expansion of value. (Marx 1959, p.41-2). For the calculation of the rate of profit, surplus value, whatever its origin, is a surplus over the advanced total capital. Marx also explains that because of the competition among capitalists there comes to prevail a general rate of profit towards which all other capitalists converge under the pressure of competition. This rate of profit represents the surplus value allotted to various quantities of capital, proportionately to their maginitude, irrespective of its composition, the equal aliquot share of total surplus value going to equal masses of capital.

Here it is to be noted that the rate of profit pertains to the capital in the economy as a whole, rather than to any single individual capitalist. Taking note of this, Marx writes, "Profit as we still regard it here, i.e., as the profit of capital as such, not of an individual capital at the expense of another, but rather as the profit of the capitalist class, concretely expressed, can never be greater than the sum of the surplus value. As a sum, it is the sum of surplus value, but it is this same sum of values as a proportion relative to the total value of the capital, instead of to that part of it whose value really grows, i.e., is exchanged for living labour. In rts immediate form, profit is nothing but the sum of the surplus value expressed as a proportion of the total value of the capital" (1973.p.767).

The rate of profit is determined by two factors: the rate of surplus value and the composition of capital. Because of the influence of composition of capital, the same rate of surplus value may be expressed in different rates of profit. A rising rate of surplus value may be expressed by a declining rate of profit and a declining rate of surplus value may be expressed by a rising rate of profit. The rate of surplus value should not be identified with the rate of profit, but the latter must be derived from the former through necessary intermediate links. (Marx 1971,p.33, Rosdolsky. 1977, p.374)

The rate of profit, Marx explains (1959, p.49-50; 1973,p.762), is always smaller than the rate of surplus value. This is explained with the help of the equation $\pi = S^1 V/C$. From this we can express the following proportion: $\pi : S^1 = V:C$. The rate of profit is related to the rate of surplus value as the variable capital is related to the total capital. The above expression shows that the rate of profit is always smaller than the rate of surplus value, as the variable capital is always smaller than the total capital, except in the extraordinary condition when variable capital equals total capita] in which case the rate of surplus value also equals the rate of profit.

Dialectical relation between the law of value and the rate of profit:

The issues that became part of the wider debate on the transformatioin of values into prices are related to the consonance of this formulation of profit rate with the labour theory of value also as explained by Karl Marx. Regarding the relation between these two categories Engels wrote, "Equal average rate of profit can and must come about, not only without a violation of law of value, but on the very basis of it" (Marx 1956, Preface.p.19). Similarly Marx stated, "If one did not take the definition of value as the basis, the average profit and therefore also cost prices would be purely imaginary and untenable ... The determination of this surplus value itself, however, only arises out of the determination of the value by labour-time. Without this, the average profit is average of nothing" (1968,p.190). Marx, at the same time, was aware that the relation between the two was not that simple. He underlined the contradiction in the realisation of the relation between the two: the law of value and the general rate of profit, the relation between the abstract and concrete expressions of the phenomenon. Regarding this problem of value and its form Marx wrote, "Market value equates itself with real value by means of its constant oscillation, never by means of an equation with real values as if the latter were a third party, but rather by means of constant non-equation, the general law acts as the prevailing tendency only in a very complicated and approximate manner, as a never ascertainable average of ceaseless fluctuations" (1959,p.161). Marx carefully tries to avoid the mistakes of the classical economists in directly relating the rate of profit to the law of value without any intermediate links. He analysed the 'complicated social process' that intervenes in the formation of the rate of profit on the basis of the labour theory of value.

The contradiction that sounded the disintegration of Classical Political economy is the one between the law of value and the law of the general rate of profit. It was established that labour was the sole source and substance of value and the value of the commodity was determined by the amount of labour needed for its production. Then, the equalisation of the rate of profit leads to the formation of prices which deviate from values. Because of this, it appears that the rate of profit contradicts the law of value. In other words, the attempt to express the phenomenon of profit in terms of the category of value, to apply the labour theory of value to profit meets with a contradiction.

This contradiction is even more apparent in the writings of David Ricardo. Ricardo's law of value established that living human labour was the source and substance of value, an affirmation that was an enormous advance on the road to the objective truth. But profit was also value. In trying to express it theoretically, i.e., through the law of value, a clear contradiction was obtained. The point was that profit was newly created value, or rather part of it. That was an indisputably true analytical determination. But only new labour produced new value. How did that tie up with the quite obvious empirical fact that the rate of profit was not determined at all by the quantity of living labour expended on its production? It depended exclusively on the quantity of capital as a whole, and in no case on the size of that part spent on wages. And it is even more paradoxical that the higher the profit the less living labour was consumed during its production.

In Ricardo's theory, the law of average rate of profit, which established the dependence of the rate of profit on the quantity of capital as a whole, and the law of value which established that only living labour produced new value stood in a relation of mutually exclusive contradiction. Nevertheless, both laws determined one and the same object: profit. Here was a problem that was impossible to resolve on the principle of formal logic. And if thought had arrived here at an antimony, and had landed in a logical contradiction, it was difficult to blame dialectics for it. The formal logic justified a general law, in the present case the law of value, only when it was demonstrated as an immediately general empirical rule under which all facts whatsoever were subsumed without contradiction.

It was found that there was in fact no such relationship between the law of value and forms of its mainfestation. As soon as one tried to treat profit theoretically, i.e., to understand it through the law of value, it suddenly proved to be an absurd contradiction. If the law of value was universal, profit was impossible in principle. By its existence it refuted the abstract universality of the law of value, the law of its own particular existence.

The formal method holds out two solutions as a way out-of this contradiction: one is to change the meaning of value in such a way that the concept of profit can be included in it without any contradiction; another is to change the concept of profit in such a way that it can be included in the sphere of application of value analysis without any contradiction. The attempts to set aside these contradictions mark the beginning of the end of Ricardo's analysis as well as of classical political economy. Ricardo's successors, in order to uphold the determination of profit, qualified the definition of value. In order to maintain formal, logical consistency they tried to bring the universal formula of the law in agreement with empirically unquestionable state of things, with that which is identical with the fact, i.e., to alter the expression of value in such a way as to be in consonance with its empirical form of manifestation, the existence of a general rate of profit. In other words, in order to stick to the canons of formal logic they tried to make the concepts of value and profit agree directly without any contradiction. Such attempts at changing the conception of value led to the disintegration of classical political economy. While examining such an attempt of James Mill, a disciple of Ricardo, Marx commented, "What he tried to achieve is forma], logical consistency. The disintegration of the Ricardian school 'therefore' begins with him" (1971,p.84). Besides this as mentioned above another way is to change the concept of profit. In this direction profits were defined in such a way that the source of profit in exploitation disappeared and profit appears to orginate in reality from many other factors (Marx 1971,p.147; Ilyenkov, 1977,p.327).

Those who are working within the bounds of formal method when they encounter such contradictions, try to explain it away as **the** result of shortcomings in the existing concepts and definitions, and formulation of a universal law. That is, in this kind of exercise, they view contradictions as being the result of deficiencies in thinking and not because of the contradictory nature of economic reality. In order to overcome these shortcomings, in the true spirit of formal analysis, they try to make concepts and definitions more precise. Marx explained this treatment:"Here the contradiction between the general law and further developments in the concrete circumstances is to be resolved not by the discovery of the connecting links but by directly subordinating and immediately adopting the concrete to the abstract. This moreover is to be brought about by a verbal fiction. *Py* changing the correct names of things." Further, "The phenomenon is very simple as soon as the relationship of surplus-value and profit as well as the equalisation of profit in a general rate of profit is understood. If, however, it is to be explained directly from the law of value without any intermediate link, that is if the profit which a particular capital yields in a particular branch of production is to be explained on the basis of the surplus value contained in the commodities it produces, in other words on the basis of the labour directly expended in the production of commodities, that is a much more difficult problem to solve than that of squaring the circle, which can be solved algebraically. It is simply an attempt to present that which does not exist as in fact existing" (1971,p.87) This explaining away of the difficulty through verbal fiction can only lead to further unresolvable problems.

The contradictions that engulfed classical political economy cannot be addressed by the formal method. Karl Marx, with the help of dialectics, attempts to examine these contradictions. Marx, instead of attempting to save either the law of value or the rate of profit through arbitary formulations, recognised that 'general law of value stood in a relation of mutually exclusive contradiction of a real object.' (Ilyenkov, 1977,p.325). Marx also recognised that whenever attempts were made to keep aside these contradictions and relate the categories directly, it led to unresolvable contradictions. (Marx , 1971,p.87)

Marx clearly showed that classical economists'-Ricardo's and Smith's - problems arose as they failed to recognise the contradiction between the law of value and the rate of profit. Regarding Ricardo Marx commented, "Instead of postulating this general rate of profit, Ricardo should rather have examined how far its existence is in fact consistent with the determination of value by labour-time, and he would have found that instead of being consistent with it, prima facie, it contradicts it, and that its existence would therefore have to be explained through a number of intermediary stages, a procedure which is very different from merely including it under the law of value" (1968,p.174). Marx was of the opinion that Smith, when compared to Ricardo, was in a better position as he was, to some extent, aware of the antinomy, but was not able to overcome it, "It is Adam Smith's great merit that it is just in the chapters of Book-I where he passed from simple commodity exchange and its law of value to exchange between materialised and living labour, to exchange between capital and wage labour, to the consideration of profit and rent in general - in short, to the origin of surplus value - that he feels some **flaw** has emerged. He senses that somehow - whatever the cause may be, and he does not grasp what it is - in the **actual** result the law is suspended: more labour is exchanged for less labour (from the labourer's stand point), less labour is exchanged for more labour (from the capitalist's stand point). His merit is that he emphasises - and it obviously perplexes him - that with the accumulation of capital and the appearance of property in land - that is, when the conditions of labour assume an independent existence over against labour itself - something new occurs, apparently (and actually, in the result) the law of value changes into its opposite. It is his theoretical strength that he feels and stresses this contradiction, just as it is his theoretical weakness that the contradiction shakes his confidence in the general law" (1963,p. 87-8) . Marx's attempt was to unravel the contradiction that shook the foundations of classical economics.

## Marx's Analysis of Contradictions :

The contradictions that surfaced in classical economics did not completely disappear in Marx's analysis. Instead, these contradictions were represented as a necessary reflection of the contradictory nature of concrete economic reality. Marx did not treat the contradiction between general, abstract law of value and its concrete manifestation of rate of profit as shortcomings in thinking or inexactitudes of the concepts and definitions. He explained it as being a reflection of the nature of the object itself. Marx in the three volumes of the Capital develops a whole chain of mediating links between the abstract and the concrete expressions of the phenomena. These connecting links instead of doing away with these contradictions as something subjective, prove them as being a necessary character of the object. Marx following the dialectical method, demonstrated that contradictions between the law of value and the rate of profit were not logical ones, but arose from the nature of the capitalist economy and accordingly attempted to examine how those contradictions were resolved in reality.

Any system in motion or in the process of change includes contradictions as the principle of its self-movement. Any method that attempts to come to grips with motion has to recognise the contradictory nature of the process, and instead of resorting to 'verbal fiction' as done under formal logic, must investigate concrete conditions to know how these contradictions are resolved in reality paving the path for higher forms of development. Only dialectical method holds out a method that can capture the contradictory nature of reality. As described by Ilyenkov, "Dialectics proceeds from diametrically opposite view. Its solution of the problem is based first of all on the assumption that the objective world itself, the objective reality is a living system unfolding through emergence and resolutions of its internal contradictions. The dialectical method, dialectical logic demand that, far from fearing contradictions in the theoretical definitions of the object, one must search for these contradictions in a goal-directed manner and record them precisely - to find their rational resolution, of course, not to pile up mountains of antinomies and paradoxes in theoretical definitions of a thing" (1982,p.244). The dialectical method helps to comprehend the essentially dynamic nature of the phenomena and the contradictions that charactrise these dynamics.

Different sectors or industries in the economy are characterised by different compositions of capital. Because of this difference in compositions of constant and variable capital, surplus value produced per unit of capital in different sectors or industries differs. Under the formation of the general rate of profit, surplus value is distributed among the capitals not according to the surplus produced in each sector or industry but according to the share of its capital in total social capital. Because of this, distribution of surplus value on the basis of size of capital, but not on the basis of surplus value produced, values of commodities differ from their prices. If the commodities were sold at their values, the rate of profit in different sectors will differ according to the productivity of labour and composition of capital. This contradiction between the law of the value and the rate of profit does not invalidate the law of value but shows the result of the capitalist competitive process.

Capitalist competition achieves the equalisation of profit rates, Marx explains (1968,p.29-30), by regulating average prices. As a result of this process the average prices are either above or below the value of the commodities so that no commodity yields a higher rate of profit than any other. It is wrong to say that competition among capitals brings out a general rate of profit by equalising the prices of commodities to their values. As opposed to this, the average rate of profit is achieved by converting values of commodities into average prices, in which a part of surplus value is transferred from one commodity to another. The value of a commodity equals the quantity of paid and unpaid labour contained in it. The average prices of a commodity equals quantity of paid labour it contains (both materialised and living) plus an averge share of unpaid labour. The latter does not depend on whether this amount was contained in the commodity itself or on whether more or less of it was embodied in the value of the commodity. On account of this process of formation of the general rate of profit, prices tend to deviate from values.

The mutually exclusive nature of the labour theory of value and the general rate of profit was expressed by Marx as follows: "Owing to the diversity in the organic composition of capital which first manifests itself in the immediate productive process as the difference between variable and constant capital and is later enlarged by differences arising from the circulation process - the mere existence of a general rate of profit necessitates cost-prices that differ from values" (1968, p. 176). As capitals of equal size, irrespective of their compositions of capital, period of circulation or turnover, yield profits of equal size the prices of production of commodities deviate from values. If commodities are sold at their values, instead of a genera] rate of profit, different rates of profit will come to prevail. The concept of general rate of profit implies prices that deviate from values.

While examining the antinomy between the law of value and **the rate** of profit Marx recognised the place of the composition of capital. Marx (1954,p.149-153; 1968,p.29) noted that the average price and value of commodity can coincide, and the surplus value produced in a sphere can equal the average profit when the relationship of various components of capital in the sphere is the same as that which exists when the total sum of capitals, the capital of the capitalist class, is regarded as one magnitude on which the whole of surplus value is calculated, irrespective of the sphere in which it has been created. Equal amounts of capital containing different proportions of variable to constant capital lead to commodities of uneqeual values and different rates of profit, and exchange process has to intervene in the formation of the general rate of profit. Capitals of equal magnitude containing similar proportions of different components lead to, as surplus value is not redistributed, equal values and prices, and rate of profit equal to average rate of profit.

Instead of subsuming the rate of profit under the law of value directly, it has to be explained through a number of intermediary links. A complex social process impinges upon the formation of the general rate of profit which leads to the deviation of prices from values. The concept of labour-power is a crucial link in comprehending the mutually exclusive contradiction between the law of value and the general rate of profit. This contradiction surfaces with labour-power itself becoming a commodity. (Marx, 1963,p.88). The recognition of the dual nature of labour, its exchange value and use value, its unique capacity to create value , and the consequent production of surplus value forms the basis of the explanation of the rate of profit on the basis of the law of value. With the emergence of labour-power as a commodity, the conditions of labour also acquire an independent existence over and against labour itself. Constant capital, dead labour, a creation of labour itself comes to control living labour. The competition among capitalists, composition of capital, i.e., proportion of constant to variable capital and circulation or turnover of capital go a long way with the concept of labour-power in explaining the formation of the rate of profit on the basis of and at the same time its contradiction with the law of value.

## Tendential Process:

The formation of the general rate of profit is a tendential process, where different rates of profit in different branches tend to gravitate to it through the process of exchange of commodities and competition among capitalists. In the same way, as prices equate themselves with values by means of constant oscillation and value of commodities exists only in up-and-down movement of commodity prices, the general rate of profit forms the centre around which different rates of profit in different branches fluctuate. Marx explains that the general rate of profit, "exists indeed as an ideal average figure in so far as it serves to estimate the real profit; it exists only as an average figure, as an abstraction, in so far as it is established as something which is in itself complete, definite, given. In reality, however, it exists only as the determining tendency in the movement of equalisation of the real, different rates of profit, whether of individual capitals in the same sphere or of different capitals in the different spheres of production" (1971,p.463). The formation of the general rate of profit through competition, which implies transfer of surplus value from one branch to another, presupposes different rates of profit in different brahcnes with equal magnitudes of capital. The process of equalisation of the rate of profit is a complex phenomenon which involves many factors like fluctuation of market prices, competition among capitalist of different branches, distribution of total social capital among different branches, composition of capital among different branches and turnover periods.[1] Because of the complexities involved in the process of formation of the general rate of profit, its tendential nature, and dynamic as well as the contradictory and transient nature of capitalist economy, a disequilibrium situation appears to be the ever present condition.

In the debate that ensued regarding the validity and viability of the Marxian understanding of the capitalist economy, the issue of consistency of Marx's analysis of prices of production and rate of profit, of derivation of prices from values, which is commonly referred to as the transformation problem, occupied centre stage. The Sraffians, the Analytical Marxists and Morishima, who attempt to reinterpret Marxian economic analysis, invariably deal at length with the consonance of Marx's value analysis with the formation of rate of profit.

## Sraffian Analysis of Rate of Profit:

In recent times the Sraffians emerged as bitter critics of Marx's formulation of the rate of profit (as a part of the transformation problem).[2] Their criticism is largely based on Sraffa's work, which holds quite a similarity with Bortkeivicz's work of more than half a century before. Besides these two, Cambridge particularly the Kaleckian flavours can also be found in their **works**. The latter spirit, to a large extent, is reflected in the works of Joan Robinson and Hodgson. Among them while Robinson argued that a solution to Marx's transformation problem could be found in the work of Sraffa, Steedman and Hodgson vehemently differed from this viewpoint arguing that Sraffa's analysis along with the analysis of Bortkeivicz show that there is nothing to be transformed as labour values and its attendent categories are redundant and physical conditions of production are sufficient to calculate prices along with the rate of profit, and that Marx's calculation and description of the rate of profit does not hold good under modern rigorous analysis.[3]

In the Sraffian critique of Marx's analysis of the rate of profit, two arguments take a prominent place:

1. Only simultaneous equation method can help to explain the correct rate of profit and prices of production, and
2. conditions of production and the wage rate alone are enough to calculate correct prices of production and the rate of profit **and** labour values play no role in this analysis, labour **value related** analysis is inconsistent.

The confidence that logic and method are on their side appears quite prominently in the writings of the Sraffians. This is even more evident in the writings of Steedman. He is emphatic that Marx's labour theory of value and its related categories' "irrelevance is logically impeccable". He argues, "The Sraffan based critique of Marx cannot be met head on and rationally rejected, for the simple reason that it is correct". He also says that the Sraffa based critique is in keeping with Marx's materialistic analysis. "Sraffa - based results are not only correct but derive from arguments which do not depend on ignoring or rejecting Marx's basic materialist framework" (Steedman 1981a, p.25-26). He even goes to the extent of saying that Marx's value analysis comes in the way of successful application of materialist analysis to social problems. Steedman extends these views to his analysis of Marx's rate of profit. Similarly Hodgson comments, "Marx aimed to explain the empirically given equilibrium prices, but he failed to do so. The works of Bortkievicz and Sraffa are logically consistent attempts to show the derivation of prices from underlying relations in the economy. They succeed in providing an equilibrium solution when Marx failed" (1974,p.372).

It is the emphasis on the simultaneous equation approach that becomes the hallmark of the Sraffian response to the problem of transformation of values into prices and the formation of the general rate of profit. Hodgson argues, "Had he [Marx] analysed the problem mathematically it would have been evident that only simultaneous determination of the magnitudes was possible." (1974,p.363). In Steedman's words, "From a formal standpoint

Marx's error lay in trying to determine first the rate of profit and then normal prices of commodities (or prices of production as Marx called them) ; the fact is that the profit rate and prices of production have to be treated simultaneously within the theory" (1981b, p.14). Though he expressed doubts regarding the overall treatment of Marxian economic analysis by the Sraffians, Garegnani as one of them also felt that the rate of profit determined by the ratio of surplus value to the value of total capital may not hold because of the divergence of value from prices. The shortcoming in Marx, which as he says Marx was aware of, is that competition will distribute profits in proportion to prices of constant and variable capitals and not in proportion to the 'values'. He further says, "Marx seems to have left the question there. Had he attempted to correct the 'error', he would soon have found that the price equations modified estimating the capitals at their prices must determine not only the prices of production but also rate of profit," so "in the price equations the uniform rates of profit can only be determined simultaneously with relative prices of the two commodities." He also says, "The size of surplus value does so change relative to capital. This surplus value is in fact the price of production of the surplus product, and cannot but change relative to that of social capital. When, with the distribution of surplus value, relative prices in general come to diverge from relative 'values'... the profit rates is but the relative value of those two composite commodities and it will not be equal to the ratio between the quantities of labour embodied in them any more than the relative prices of any two commodities" (Garegnani, 1984, p.305-323). Though Garegnani brings into the picture the 'surplus equation method' to capture the transperancy of the system, he considers it as an equivalent to the 'price-quation method'.

Also in Sraffian considerations, the physical quantities of inputs and outputs, and the bundle of commodities constituting real wages are enough to determine the prices of production and the rate of profit. Steedman writes, "First, those data suffice to determine, proximately, the rate of profit and prices of production. Second, the rate of profit does not, in fact, depend on all those data, but only on real wages and the direct and indirect conditions of production of those wage goods...Third, no quantities of embodied labour play any necessary role in the determination of either the rate of profit or prices of production" (1981b, p.15). He is of the opinion that physical conditions of production holds key to the analysis: "The physical analysis is actually the only possible foundation for value analysis and that the physical analysis far from being a terminus to enquiry precisely points to the issues which require further investigation" (Steedman, 1981a, p.66). Steedman claims himself to be the inheritor of the tradion of Dmitriev, Bortkievicz and Sraffa. He says, "they show that profit rates and prices depend on real wages and production conditions, just things that Marx emphasised... unlike that of Marx, are logically coherent... No one has presented a direct logical criticism of these solutions and that for the simple reason that there is no logical criticism to be made." (Steedman, 1981a, p.33). He also says, "that the production process is thus a social process and that the process is initiated and controlled for the sole purpose of making profits does not, of course, alter the fact that the physical inputs, the labour done and the physical outputs produced stand in certain necessary relation to one another. The following analysis will generally start from such conditions of production." (Steedman, 1981a, p.17). He says that since Marx's various labour time magnitudes are entirely derivative of the physically specified real wages and production conditions, these latter physical quantities being fully adequate to the determination of the profit rate and the prices of production, it follows at once that the labour time magnitudes are of no significance for that determination. He writes, "not only can one build the theory of profits and prices around physical schema, rather than the value schema, but one is forced to do so," and "This conclusion, it should perhaps be emphasised, is the conclusion of an argument in logic; should anyone wish to challenge it, they must do so either by finding a logical flaw in the argument or by rejecting explicitly and coherently one or more of the assumptions on which it is based." (Steedman, 1981a, p.48-49).

With this simultaneous equation system, and given conditions of production and real wage rate, Sraffians try to account for the rate of profit. Steedman uses the following equations to explain his argument (1981a, p.51-2)

$$(1+r)\ (p^m A+ma) = p^m \qquad (1)$$

$$p^m\,[I-(1 + r)A] = (1+r)ma$$

or

$$p^m = m(1 + r)a[I-(1 + r)A]^{-1} \quad (2)$$

$$mL = p^m w \quad (3)$$

on post multiplying both sides of (2) by w and taking account of (3), and after dividing through by m,

$$L = (1+r)a[I-(1+r)A]^{-1}w \quad (4)$$

In these equations A stands for the matrix of produced means of production, where the $j^{th}$ column shows the inputs used up in industry j, **a** stands for row vector of the level of employment in each industry, L for total employment, r for rate of profit, $p^m$ for the row vector of money prices, m for the money wage rate and v for the column vector of the real wage bundle obtained by the workers. In the above equation system $A_1$ $a_1$ L and w are known magnitudes and r is the unknown magnitude. On the basis of this equation system Steedman argued that rate of profit is determined fry the physical conditions of production, expressed by $A_1$ a and L, and by the workers real wages w.

It was contended that Marx's analysis of the rate of profit and prices of production was internally inconsistent and that Marx's formula for the rate of profit $S/c+V$ did not confirm to the correct rate of profit. In Marx's formula the three elements: surplus value, constant capital and variable capital were valued in labour embodied terms. Marx explained that because of **the** way surplus was distributed among the capitalists according to **their** share in total capital, prices tend to deviate from values. If prices are not proportional to values, then the rate **of profit calculated** in value terms will not be equal to **the one** calculated in price terms. As the correct rate of profit is determined by the ratio of surplus to the total capital valued in price terms, Marx's determination of the rate of profit in value magnitudes which differ from prices, it is pointed out, is internally inconsistent. According to this explanation, as the rate of profit is equal to the price of gross output minus the price of the inputs, divided by the price of those inputs, and when prices are not equal to values, the rate will not equal the value of gross output minus the value of the inputs, divided by the value of these inputs. In other words Marx's value based rate of profit is not the correct one. As a result of deviation of prices from values and the inconsistency of Marx's value rates of profit from actual price rate of profit, total surplus value calculated in value terms will not equal total profits calculated in terms of prices. In short total profit is not equal to total surplus value.

Steedman argued that values were derivative of the conditions of production. The same conditions of production are enough to determine the rate of profit and prices of production. As values are derived from conditions of production and the conditions of production are enough to calculate rate of profit, no reference to values are necessary to determine rate of profit. Not only values are not necessary but also any reliance on them will lead to inconsistent results.

## A Critical Appraisal:

The Sraffian analysis as represented by Steedman and others can be described as a positivist attempt to do away with the contradiction, the contradiction between the universal law (law of value) and universal empirical rule (rate of profit). They decline to accept that because of the nature of the capitalist mode of production, "a universal law (law of value) stands in the relation of mutually exclusive contradiction to the empirically universal form of its own manifestation, with the law of average rate of profit" (lyenkov, 1982,p.242). Instead, they attribute the contradictions to the shortcomings in Marx's analysis, particularly in Marx's analysis of the law of value, as is natural to those who find causes for the contradictions in the inadequacies of reasoning, concepts, definitions, terms, expressions, categories, etc. With this they embark upon the task of correcting Marx, to get rid of the shortcomings that plague Marx's value analysis by reconciling the universal law and its universal empirical manifestation through modifying the definitions of the categories of profit and value. In this their aim is to make the universal law to be in consonance with its empirical manifestation. In the process they come to the inevitable conclusion that the universal law as represented by the labour theory of value should be discarded. It is no wonder that to Steedman the transformation problem appears as a non-problem, in fact, a spurious one.

A simultaneous equation system comes in handy to the Sraffians to 'correct' Marx and set right the 'shortcomings' that bedevil his analysis. Though this equation system helps them to create an elegant model of equilibrium prices and profit rates, it conceals the real process of valorisation in the capitalist economy and also of passing of value into its opposite: prices. Because of its treatment, values and prices appear as two different categories which needs the prop of an arbitary numeraire to come together. This analysis helps only to obscure the formation of the rate of profit.

An important drawback that appears in the simultaneous method vis-a-vis Marxian analysis is its preoccupation with static method and its failure to deal with the dynamic situation which is the main concern of Marxian analysis. In fact, Sraffa (1960, Preface) makes it abundantly clear that his analysis as a critique of neo-classical theory mainly deals with the situation where change is not postulated. Later, those who try to address Marxian analysis from a Sraffian perception use the same simultaneous equation method. Though Sraffians may object to this, it is to be kept in mind that in their models reproduction goes on at the same scale. As Freeman explains, "the economy does not merely reproduce itself, it reproduces itself identically. Its past, present and future are locked in a self-sustaining circle" (1984, p.224). Because of this treatment, the intrinsically dynamic and contradictory nature of capitalist accumulation is obliterated.

Another important drawback is, because of this simultaneous equation method, notwithstanding the ever going on of accumulation, values/prices represent a never changing phenomenon. The prices of the goods remain the same both at the starting as well as at the end of the production process. Sraffians even ridicule the notion of input values/prices being different from the values/prices of outputs (Steedman 1981 a, p.43-4). But the real economy presents ever changing values and consequently prices as a result of constantly changing production methods in response to the requirements of the capital accumulation. As Ernst writes, "In this (neo-Ricardian) conception, the value of commodities used as means of production in a period is determined simultaneously with the value of the output of that period. Yet when we observe that the means of production used in period t were produced in period t-1, the neo-Ricardian determination of their value seems suspect. There would be no need to consider this if the conditions of production did not change from period to period. However, in Marx's idea of the accumulation of capita] the techniques of production change as productivity increases. Since increases in productivity are here assumed to occur on a regular basis, we are consistent with Marx in treating the value of means of production as fully preserved in the output of a period" (1984,p.88). The Sraffian analysis, in sum, obviates the analysis of the intertemporal changes in the value magnitudes. According to the simultaneous equation method prices of inputs and outputs are determined at the same time as if both are the outcomes of **the** same process. Contrary to this prices of inputs are determined by the process in which they are produced, but not by the process into which they enter as means of production.

More than the simultaneous equation method what runs deeper in Sraffian analysis of Marxian economics is the notion of equilibrium and acompanying concepts (Hodgson 1974, p.372). The concepts of a uniform, equilibrium rate of profit and perfect competition are an invariable part of their analysis. The Sraffians adopt an idealised picture of the capitalist economy on the basis of arbitrary (violent) abstractions. As opposed to this Marx through determinate abstractions takes into account the factors that capture the typical nature of the capitalist economy. Accordingly he considers capitalist economy as one in never ceasing motion. The assumptions that production goes on unchanged day after day, that the same commodities are produced over and over again, that the same prices and uniform rate of profit prevail are unreal. A disequilibrium situation is the ever present character of this economy. The process of formation of the general rate of profit is considered as a 'prevailing tendency'. Because of concentration and centralisation tendencies inherent to the capitalist accumulation process each capitalist tries to garner as much market as possible and push the rest out of that competition. This also is reflected in capturing the profits, which form the basis of the next round of accumulation. In this kind of situation where disorder is the order of the day the general rate of profit, instead of being an absolute category, functions as a proximate guide. Marx's rate of profit exists in the up-and-down movement of prices.

The social nature of production process does not find a place in the Sraffian analysis. The Sraffian's do not see the production process as a valorisation process, but as a technical process where inputs are automatically converted into outputs. In analysing the rate of profit on the basis of physical conditions of production they do not take into acccount the interaction between different spheres. Even here their conditions of prodution represent only technical relations. They derive the rate of profit directly from conditions of production without any intermediate linkages. As a result the necessary contradiction between the rate of profit and the underlying value relations disappears. This is reflected in their denial of any role for value magnitudes in the formation of the rate of profit. While deriving the rate of profit from the conditions of production the uniqueness of labour power is obliterated as it is treated like any other commodity. As a result of this surplus does not appear as a result of relations among people but of relations between inputs and outputs: instruments of labour and objects of labour on one side and produced commodities on the other. Instead of surplus labour and surplus value, surplus products become the focal point. Surplus product appears to originate from every portion of capital. As wage labour is reduced to a bundle of wage goods and constant capital is treated as a constellation of means of production, the specific nature of the capital-wage labour relation is obscured. In other words, the basic character of the capitalist economy is set aside. Profits like wages becomes simple purchasing power of particular commodities. They no longer signify class relations.

The only saving grace of Steedman is that he does not claim to have provided a new solution to the transformation problem. But at the same time he makes an equally extreme claim that there is nothing to solve in the transformation problem. Previously, there were efforts to link up the value system and price system through various invariance postulates (however arbitary these postulates may be). In this exercise it was accepted that the value system along with the price system existed and that there was a need to relate the two. It was an effort to map values on to the prices. But what is needed is to recognise that in the capitalist process of production values are transformed into their opposite prices. Prices are the phenomenal form of values. Values and prices are not separate or distinct entities but one and the same, one bring the essence and the other brings the form through which the former exists or moves.

When we move on to Steedman and his elucidation of the Sraffian tradition, what we have is the complete snapping of a connection between the two systems. Or to use the expression of Samuelson (1971,p.400), writing one equation, erasing it and then writing the other (correct!) equation, calling the erasing process the transformation.

Unlike the Sraffians' representation value and price systems are not two separate, unconnected phenomena. The conception that these two are separate come to have hold over the analysts because in the capitalist market commodities are exchanged according to prices and not according to labour values, and prices deviate from values. This impell analysts like Steedman to claim that, price magnitudes being the significant phenomenon and value magnitudes contradicting the significant phenomenon, there is no need to look at the value system. This contradiction between values and prices, as noted by Marx, instead of showing the self-contradictory nature of the theory, only shows the contradictory nature of the system which the theory tries to examine. The apparent deviation occurs because the surplus value produced is not distributed among the capitalists according to the surplus produced by each capitalist, but according to the share of each capitalist in the total social capital.

The issue of internal inconsistency of Marx's analysis of the rate of profit and the law of value as raised by the Sraffians shows the methodological divide that separates Marx's analysis and Sraffians' examination of it. Marx explains the contradiction between the rate of profit and the prices of production on one side and the law of value on the other as a necessary outcome of the formation of the rate of profit through the inversion of subject and object, and instead of brushing aside this contradiction as theoretically unjustifiable he upholds it as a victory of the dialectical method in unravelling the mystery that eluded the classical economists in understanding the capitalist accumulation process. Marx with the help of the dialectical method aims at comprehending the contradictions that characterise the capitalist economy. The contradiction that he notes between the law of value and the rate of profit is an important one. As opposed to this Sraffians' efforts are directed towards achieving formal consistency, where contradictions are not allowed. As a result the contradiction between the rate of profit and the law of value is unacceptable to them and accordingly they set up a formal model that they believe does away with this contradiction. They may be successful in developing formally consistent models, but in the process they also move far away from reality, reality that is beset with contradictions.

In order to uphold the formal consistency, Sraffians advocate separation of value and price calculations as they think that prices can not be explained by values. For them prices arise directly from the conditions of production and any reliance on value analysis leads to inconsistent results. In Marx's analysis value and price form part of a single integrated system of categories reflecting the nature of capitalist economy where spheres of production, distribution and circulation form part of process of production in capitalism. Values produced in the sphere of production are realised *ar>* prices in the sphere of circulation. In the same way, surplus value produced in the sphere of production is realised as profit in the sphere of circulation. The formation of the rate of profit and prices of production signifies the distribution of surplus value produced in the sphere of production. This helps to explain the fetish nature of commodity production where value seems to arise from the relation between commodities rather than from relations among people, and profit seems to arise from every part of capital. The price forms that we come face to face on the surface are the result of interaction of these spheres of activity. The formalisation that the Sraffians follow completely conceals this complex process of formation of the rate of profit. They set aside the social nature of the process of productoin and treat it as a technical process. The results that they obtain may be consistent with the technical relation between inputs and outputs, but it cannot be said that these results capture the real nature of the capitalist economy. This is so because 'commodities are not exchanged simply as commodities but as products of capital'.

Because of the capitalist process of production, distribution and exchange, the general law of value and its empirical form of manifestation, general rate of profit stands in a relation of mutually exclusive contradiction. Any attempt to relate values and rate of profit directly without intermediate linkages, will further lead to intractable contradictions. But Sraffiains, following formal analysis, consider these contradictions to be the result of shortcomings in Marx's analysis. In order to overcome these shortcomings they attempt to reinterpret Marx's economic analysis in such a way that these contradictions disappear. In the process of removing these contradictions they also remove basic elements or building blocks of Marx's ecconomic analysis. Formal analysis holds out two ways of overcoming these contradictions: First is to alter the general law in such a way that it is in consonance with the empirical facts. Second is to alter the expression of facts. Sraffians make use of both ways. According to the first method, the general law stands in a relation of mutually exclusive contradiction with its own empirical manifestation, the former is to be altered in such a way that is in consonance with the latter. In other words if thought contradicts facts thought is to be altered in order to make it to be in consonance with facts or phenomenal forms. Here the law of value the general law of capitalist production stands in contradiction with rate of profit. So the need, according to the formal analysis, is to alter the law of value. The Sraffians do not simply alter, but completely reject the law of value. The second method is to change the expression of facts themselves. Here the expression to be changed is that of profit. Profit is considered as the form that surplus value takes in the sphere of circulation. Surplus value is the result of exploitation of the labourers in the production process where labour produces more value than is needed to obtain the labour-power. The Sraffians repudiate the contention that labour-power is the unique commodity capable of producing surplus value, and that surplus value is the source of profit. They argue that labour-power is in no way unique, and in a surplus producing economy any commodity that goes into the production of every commodity can be described as capable of producing surplus. That is to say any factor is capable of being a source of surplus, not only labour-power. In other words, profit cannot be explained on the basis of Marx's law of value. The law of value, according to which the value of a commodity is determined by socialy necessary labour time, and profit as the form of surplus value forms building blocks of Marx's economic analysis. Once divested of these, in order to make it formally consistent, Marx's analysis is ripe to be absorbed 'into pre-existing analyses that are in fact predicated on its absence'

**Marx** explains that the rate of profit and prices of production are to be derived from value through a number of intermediate stages. Here the recognition that because of the capitalist relations of production labour-power appears for the first time as a commodity on the market forms a critical part. Labour-power, like the other commodities it produces, has a dual nature: it has exchange value and use value. While exchange value,to **put** it crudely, is cost of production of labour-power, its use value is to create more value. Sraffians in building heir models do not recognise this. In fact as explained earlier they repudiate it. They treat labour-power like any other commodity. Labour-power becomes a part of the physical conditions of production. Sraffian models, because of this treatment of labour represent technical relations but not social relations between agents of antagonistic classes in the production process. These models stand for reproduction of physical conditions of production but not reproduction of wage relations. Profit in the Sraffian models arises not because labourer is exploited by the capitalist but because inputs are converted into outputs productively. While Marx's rate of profit arises from social relations of production specific to the capitalist mode of production, Sraffians' rate of profit arises from technical relations, physical condition of production. These two rates of profit represent two different realms of analyses.

Profit is only the transformed form of surplus value. Quantitatively they represent the same magnitude. The Sraffians **argue that** as prices deviate from values, total profits being **a** price category cannot equal total surplus value. This criticism comes from their conception that prices and values are two seperate and unconnected systems. Contrary to this, prices and values are elements of the same relation. Price is the form that value takes in the sphere of circulation. Though the prices and rate of profit are influenced by the sphere of circulation as well as by the sphere of production, the sphere of cirtulation is constrained by the sphere of production as circulation is only a segment of capitalist process of production and reproduction. The sphere of circulation only circulates the value already produced in the sphere of production, but it cannot alter their magnitude. So also in the sphere of circulation profit is realised which is already produced in the sphere of production. The sphere of circulation itself does not give rise to new values to alter the relation between profits and surplus value. The conclusion that total profit cannot equal total surplus value because prices deviate from values is to be attributed to the misunderstanding of the process of formation of prices and rate of profit. This process only redistributes the surplus value already produced, but it does not alter the magnitude.

The Sraffians also argue that as Marx's rate of profit is not equal to the equilibrium rate of profit, it cannot be considered as consistent. The Sraffians' equilibrium rate of profit emerges from their simultaneous equation system. They formulate this equation system on the assumption that the equilibrium rate of profit and prices of production prevail. Based on this assumption, the normalisation leads to equilibrium prices and rate of profit. In other words, they assume what they want to explain. In this model, the social process of formation of prices from values is not taken into account. Prices and rate of profit is given independent of values as they are derived directly from physical conditions of production and values do not play any role. Further these simultaneous equations by themselves cannot explain the rate of profit and prices. They need the help of one or other invariance postulate. Each invariance postulate is as good as or as bad as any other postulate. Because of this the solutions to the equilibrium prices and rate of profit are clouded by the arbitrariness of these invariance postulates. These solutions, apart from the assumption of equilibrium rate of profit, also depend on constant rate of returns (Alberracin, 1984). This shows the constraints within which Sraffians' equilibrium rate of profit exists.

As opposed to this Marx, explicitly taking into account the dynamic nature of the system as well as different sizes and organic compositions of each capital, explains the formation of the rate of profit on the basis of competition among capitalists to gain as much cake of surplus value as possible. In this the rate of profit appears as a prevailing tendency rather than as a static equilibrium magnitude. It is the Sraffians' equilibrium rate of profit which is inconsistent with capitalist reality, but not Marx's. The equilibrium rate of profit with which Sraffians are obsessed has nothing to do with the real world. (Alberracin, 1984,p.201; and Naples, 1989,p.137-144). The rate of profit which stands for the share of each aliquot part of capital in the total profit is formed by the complex interaction of the spheres of production, distribution and exchange. Marx's analysis of the rate of profit and conversion of values into prices attempts to comprehend this complex process.

The Sraffians argue that given physical conditions of production are enough to calculate prices and the rate of profit and thus labour values are not needed to achieve this. It is to be said that the given physical conditions of production and the technical relations related to them only stand for the possibility of profit and grounds for the existence of a rate of profit. The physical conditions of production give us only the possibility. In order to turn the possibility into reality the relations of production specific to the capitalist mode of production are to be brought into the picture. Under the regime of capitalist relations of production, workers are compelled to carry on the physical conditions of production to its logical end and produce surplus value. Because of these relations of production and the exchange process related to it, concrete labour is reduced to abstract labour and individual labour is turned into social labour. Through this mechanism, only the surplus value produced is distributed among the capitalists to form the rate of profit. Only Marx's value analysis could capture this formation of the rate of profit. The Sraffians could raise the issue of inconsistency and redundancy of Marx's value analysis because they attempt to directly relate technical relations and phenomenal forms and neglect social relations and relations among the spheres of production, distribution and exchange which could explain this complex process that links the technical relations and the phenomenal forms.

Views of the Analytical Marxists:

The Analytical Marxists, do not consider that the employment of labour has anything to do with the production of surplus value. (Roemer, 1981,p.52). According to them, individuals' motives only can explain this phenomenon. It flows from their reliance on methodological individualism according to which only individuals' actions can explain macro-phenomena. This is also reflected in their analysis of the rate of profit. Here,the neo-classical concepts of equilibrium and perfect competition also play an important role. This comes out clearly from their comments on methodology (Parijs, 1983).

The improvement that Roemer claims to have made over the existing analysis consists in introducing the financial market to explain the formation of a single uniform rate of profit on the economy as a whole. Here it appears that he takes into account only the money capital circuit in explaining the mechanism, disregarding the presence of the commodity capital circuit and the production capital circuit. His emphasis on neo-classical tools leads him to assert that the existence of an equilibrium profit rate is to be explained as a consequence of individual capitalists' accumulation behaviour. This naturally impell him to underscore the the role of financial market: "The argument here shows that it is not 'competition' in some vague sense that equalises profit rates, but precisely the existence of capital market" (Roemer, 1981, p.71). In the process, he also obscures the relationship between profit and interest by saying that individual profit rates are all equal to the economy-wide rates of interest. Here it is doubtful whether he is addressing capital as a whole or only commercial capital. Consequently the distinction between capital as such and commercial capital also becomes vague. His explanation of the equalisation of the rate of profit through marginal rates of profit also brings into open his dependence on neo-classical categories. Though he mentions that the differential endowments of produced assets and the presence of a class of people who do not have sufficient endowments to produce themselves without selling their labour-power to the other asset holders are primary prerequisities to explain profit rates, his arguments that perfectly free entry and exit of the capitalist, that the capital market should be given due role in the profit rate formation and that labour-power is not the only unique commodity capable of producing surplus leads one to doubt Roemer's whole analytical exercise. The sphere of production and sphere of circulation combined together influence the conversion of surplus value into profit and the formation of the rate of profit. Profit is the form that surplus value takes in the sphere of exchange. Though sphere of exchange appears independent, its sphere of activity is limited by the sphere of production. In Roemer's analysis, only the sphere of circulation appears and it is not clear from where profit comes and where it goes. Contrary to Roemer's claims Marx also considers the role of financial capital in the formation of general rate of profit.

(1959, p.196). Besides the free flow of capital, Marx stresses the free mobility of labour-power from one sphere to another, from one production locality to another. Apart from this, the conception of competition should also be examined. In this analysis of equilibrium, Roemer adopts the neo-classical conception of competition where capitalists appear as autonomous individuals performing according to set non-contradictory norms in order to maximise the returns. As opposed to this, competition among the capitals which appears more like battle over spoils, spoils of exploitation of labour. This competition is tempered by the concentration and centralisation of capital inherent to the capitalist accumulation process. Roemer's conception of competition exists only in the realm of ideas but not in reality.

A *reductio ad absurdum* proof that equilibrium prices cannot be propontional to labour values in genera] is given by Elster, who like many others who attempted to relate values and prices, and surplus value and profit directly and mechanically, narrates the same 'shortcomings' of Marx that were repeated again and again, viz., that Marx did not take into account prices of inputs but only its values and, as such, the same commoditiy turns out to have different prices at the same time, that only price magnitudes, but not value magnitudes are significant as capitalists only use price magnitudes in their calculations, that the economy is not characterised by a uniform composition of capital. He explains, "he [Marx] derived the avarage rate of profit from the fundamental equation $[r = s^1/K+1]$, with all magnitudes defined with respect to the economy as a whole. There is no justification for this procedure, and it does in fact give the wrong results. The fundamental equation holds only when values and prices coincide because the organic composition is the same in all sectors, or when there is no surplus value. Next, Marx in a numerical example in Chapter III derived the prices by multiplying the values of the inputs by (1+r), that is by using the average rate of profit as a mark up on values. This, however, can only be called a howler, since the valuers are unknown magnitudes and hidden to the capitalist hence they cannot enter his calculations... The equilibrium condition must be that the capitalists in all sectors calculate the same rate of profit on the price costs" (Elster, 1985,p.134). In this 'new' proof of failure of Marx, Elster does not show anything that is new. Marx himself pointed out the role of the assumption regarding the uniform organic composition of capital and the need to transform value of inputs into prices. Prices deviate from values when, because of the different composition of capita] in different brahcnes surplus produced is distributed among different branches according to the size of capital of each branch. Naturally when composition of capitals is the same and there is no need to redistribute surplus and prices do not deviate from values and the rate of profit will be same. In the case of no surplus value being produced also prices do not deviate from values as no surplus value is distributed. At the same it is to be noted that there will be no rate of profit as there is no surplus value to be distributed.

In this attempt of Elster to provide a new proof, two things become quite apparent. One is his preoccupation with equilibrium. His attempt is to examine an economy in equilibrium and to derive an equilibrium rate of profit. It can not capture the real nature of the capitalist economy. The capitalist economy is a system in incessant motion passing through booms and slumps, coining out of one crisis to land only in another deeper crisis. Marx's attempt was to capture the essence of this crisis prone system. Accordingly, his rate of profit does not signify an equilibrium situation, but one that exists in the up and down movement of prices. This rate of profit equals approximately the proportion of surplus value that falls to each aliquot part of social capital. It stands for a tendential process rather than for equilibrium situation. Another thing that is apparant from Elster's analysis is the total separation of value and price elements. Values and prices instead of being separate entities represent the same thing: expenditure of abstract labour in the production of a commodity. Price is the only form that value takes in the sphere of exchange. In the same way profit is the transformed form of surplus value by way of rate of profit. In this context what is to be done is not to go in search of invariance postulates to map values on to prices, but to examine the process of transformation of value magnitudes into price magnitudes, to examine the dialectical relation between essence and appearance. This is what Elster does not do.

Morishima's solution to the transformation problem that 'Marx's incorrect procedure converges towards the correct result when 'iterated' appears to Elster (1985,p.134) as a mathematical curiosity. In his opinion it has no exegetical or substantive significance. But at the same time he did not even mention Anwar Shaikh's work (1977) where Shaikh presented exegetical evidence for the above form of solution. Elster further comments that Morishima's result is obtained under quite restrictive assumptions that do not seem to have any interesting relation to what Marx wrote or how the world is.

Given his criticism of Marx's analysis of the formation of the rate of profit and prices, Elster provides his own solution to the problem of formation of prices and determination of rate of profit. For this purpose he uses the following simultaneous equation model:

$$[a_{oj}(b_1^1+b_2^1\ p_2+\ldots b_n^1\ p_n)+a_{1j}+a_{2j}p_2+\ldots a_{nj}p_n]\ (1+r) = p_j$$

In this $p_j$ stands for prices of commodity j; $b_j$ is the amount of commodity i that the worker receives in return for an hour work; $a_o$ is number of workers, $a_i$, $i=1....n$, is inputs used in the production, r is rate of profit. Commodity 1 is taken as numeraire so that $p_1=1$. Here smaller parenthesis denotes outlay on wage labour and total parenthesis denotes total outlay on inputs. In this excercise the rate of profit and prices are derived simultaneously. As far as the formalisation is concerned there is nothing new in this solution as it is more or less a repetition of the Sraffian treatment. Similar to Sraffian analysis, Elster also resorts to the simultaneous equation method and the physical conditions of production determine price as well as the rate of profit. This equation system, as explained earlier, can only capture static dimensions and is incapable of addressing the dynamic situation with which Marx was concerned. The physical conditions of production only denotes technical relations between inputs and outputs and they conceal the social nature of the production process and the source of profit. As a result, the rate of profit appears as a mere mark up. Elster also uses the above formalisation to attack Sraffians (whom he refers to as neo-Ricardians) on an important aspect which will be dealt with later.

Elster (1985,p.135) attempts to derive implications of his 'new' finding. For this purpose he divides his interpretation into four parts as follows:

1. <u>The Local Identity Interpretation</u> : Prices are proportional to values.
2. <u>The Global Identity Interpretation</u> : (a) The sum of all prices equals the sum of all values. (b) The totality of surplus value equals the totality of profits.
3. <u>The Hegelian Interpretation</u> : (a) Values can be determined independently of prices, but (b) prices cannot be determined independently of values.
4. <u>The Ricardian Interpretation</u> : Prices are independent of the composition of final demand.

Elster dismisses the first two interpretations, local identity and global identity interpretations, as confused and trivial. This judgement follows directly from his treatment of the relation between values and prices (i.e., transformation problem). Through the third interpretation, what he calls the Hegelian interpretation, Elster attributes completely false theory to Marx. He turns Marx's dialectical relation between content (values) and form (prices) into deterministic relations and then tries to demolish them. Through this he lays the foundation to uphold that one can derive prices and rate of profit directly from the technological coefficients, without any reference to value magnitudes. This is in no way different from Sraffians' similar claim.

It is with regard to the fourth interpretation that Elsters' original contribution comes out. It is also here that methodological individualism and neo-classical influences, the bedrock of Analytical Marxism, make their presence felt. He terms it as the Ricardian Interpretation according to which prices are independent of the composition of final demand. By this he implies that Marx did not examine the role of demand in the formation of prices. Again attributing a false theory to Marx, Elster provides a repudation of it: "In the equations from which the rate of profit and prices were derived, the consumption coefficient $b_i^1$ appear as coefficients of the unknown price variables. Hence a shift in demand will affect the solution of the system contrary to the Ricardian view". (1985,p.137) More than being contrary to Ricardian view , its significance for Elster lies in the possibility of injecting the impact of individual decisions on macro-phenomena. For him the neo-Recardian (Sraffian) simultaneous equation system is not sufficient to overturn the Marxian theoretical edifice. He needs to smuggle in neo-classical elements to complete the act. Contrary to Elster's claim, Marx clearly takes into account the play of supply and demand forces.(Marx, 1973, p.136-9; 1959, p.173-200). The problem with Elster lies in his preoccupation with an equilibrium approach reflecting neo-classicals and attributes the same to Marx. Marx takes into account the constant fluctuations that characterise the capitalist economy and accordingly takes into account supply and demand factors also to explain the movement of market prices around prices of production. At the same time Marx also recognises that cost of production, in its turn, influences the fluctuation of supply and demand. But Elster intends to use demand factors in the determination of prices of production themselves. This will be no wonder if we remember that for Elster (1985,p.138-140) utility/ use-value can be the source of exchange value. Sraffa's attempts, on whose work Sraffians (neo-Ricardians) depend, were precisely to attack this and the consequent distribution analysis. The significance of Elster's attempts lie in combining these two diametrically opposite theoretical analyses to achieve his aim: the demolition of the Marxian edifice. Though it is a fact that Sraffians through their simultaneous equation approach and neo-classical affinities attempt to disprove Marx's analysis of the rate of profit, it is doubtful how far both analyses can be combined, keeping in view Sraffa's aim of presenting a critique of neo-classical analysis[5].

This aspect of giving importance to demand and subjective choice also finds place in John Roemer's analysis. He says, "both subjective utilities and class struggle can be thought of as having a role in determining prices. There is no logical contradiction in admitting a place for both approaches". He even gives primary importance to consumption rather than exploitation in the explanation of the rate of profit: "Although the profit rate is a well-defined function of the consumption bundle it is not a well-defined function of the rate of exploitation." He goes on to prove the theorem: "If the organic compositions of capital of technology {A,L} are not all equal, then. for any e>o, there always exists b b c £ such that e = e(b ) = e(b ) but n(b ) = rc($b_2$)", which means that one cannot conceive of $\pi$ as a single-valued functions of e, as b varies. (Roemer, 1981, p.162-163) In this expression A stands for material inputs, L for labour inputs, e for rate of exploitation, $\pi$ for rate of profit, ℬ for the set of consumption bundles. The proof of this theorem, as provided by Roemer, itself hinges on the assumption either that the profit rate is zero or an equal organic compositions of capital in all sectors. This sort of interpretation is based on the understanding that Marx adopted purely subsistence theory of wages and that if wages are made endogenously variable, Marx's theory cannot hold. But contrary to this Marx explains that besides the subsistence needs of labourers historical and moral elements also enter in the determination of wages. Changes in wages lead to changes only in the ratio of nercessary labour to surplus labour. Apart from this, though the rate of profit is determined in the sphere of circulation, it is based on the surplus value produced in the sphere of production, as the later provides the limits to the former. Though changes in wages or configuration of wage bundles may lead to changes in the rate of profit, it does not mean that exploitation as a determinant of profit rates disappears. Given the organic composition of capital, changes in wages lead to changes in the rate of profit only through changes in the rate of exploitation.

While it is true that Marx also took demand into account, the meaning he gave it is different from the one given by neo-classical economists and Analytical Marxists. According to the Analytical Marxists demand is determined by isolated individuals' preferences and subjective utilities. In Marx's analysis consumption and demand is influenced by historical and social conditions under which production is carried on. Demand is determined by the distribution of social income among different classes of people. The Analytical Marxists' formulation follows from their basic argument that independent individuals' behaviour determines macro phenomenon. This shift of their focus from classes to individuals is opposed to the fundamental Marxian understanding of social development. The individual, to a great extent, is formed by the social and historical conditions under which he lives. To separate the individual from his historical and social coditions is to resort to a historical and asocial analysis.

The analysis of consumption which appear in the hands of Elster as a tool to criticise neo-Ricardians' (Sraffians) neglect of demand factor in the examination of price formation, becomes a tool in the hands of Roemer to deny a meaningful role for exploitation in explaining the formation of the rate of profit. Once it is noted that exploitation of labour itself does not have any place in Analytical Marxists' analysis, it will not be a surprise to see that it disappears from their analysis of the rate of profit. In their efforts to save the science of political economy from collapse because of 'contradictions' of dialectical analysis, the rate of profit as a measure of exploitation of labour becomes another casuality.

## The Primacy Question

Given the two rates of profit, the value rate of profit as calculated by Marx and the price rate of profit as derived from the simultaneous equation method, critics are of the opinion that the price rate of profit is more significant than the value rate of profit. Along with the simultaneous equation method and physical conditions of production approach this opinion is also common to both the Sraffians and the Analytical Marxists. The common argument put forward to support this is that capitalists use only the price rate of profit in their calculations and that the value rate of profit is not known to them: Joan Robinson writes, "When prices in terms of money are not exactly proportional to values, the share of net profit in proceeds is not exactly equivalent to surplus value. In that case, it is the calculation in terms of money that is operational, for the decisions of the businessmen who control investment and the distribution of income are influenced by profits, not by values" (1979,p.282).

Steedman writes, "Now if these two profit rates differ, which is the significant one? Which will affect capitalists decisions? And which will tend to be made uniform, as between industries, in a compititive economy? The answer is self-evident; it is the money rate of profit which effects decisions and tends to be equalised. The 'value rate of profit' used by Marx is of no concern to capitalists, it is unknown to the capitalists and their is no force acting to make it equal as between industries. The implication is clear, S/(c+v) is not a significant rate of profit in a capitalist economy, and it does not. equal the actual money rate of profit." (1981a,p .30)

Hodgson writes, "The capitalists will calculate their rate of profit in terms of prices, not values. Money capital movements between firms will be in equilibrium when the rate of profit in price terms in equal in each firm... Capitalists are not aware of, or disposed towards, any calculation in terms of embodied labour values. Hence the rate of profit that tends to be equalised to form a general rate of profit is in terms of prices, not values" (1974,p.363).

Similarly, Elster also writes, "This, however, can only be called a howler, since the values are unknown magnitudes and hidden to the capitalist; hence they cannot enter into his calculations. To confuse value and profits is to commit the dialectical sin of mixing essence and appearance. The equilibrium condition must be that the capitalists in all sectors calculate the same rate of profit on the price costs of the factors of production, not on their costs in value terms" (1985,p.134)

When these critics talk about the equilibrium rate of profit and prices they mean the rate of profit and the prices that prevail in the idealised equilibrium conditions of the capitalist economy, the rate of profit and the prices that arise from their simultaneous equations that have nothing in common with the capitalist reality. The rate of profit and prices that they refer do not belong to the magnitudes that prevail in the actual market conditions. This comes out clearly from what Steedman says, "Sraffa considers only 'prices of production', his book containing no reference to market prices... The same is true of the present work," and "The prices considered throughout the work are always prices of production, for market prices are never considered" (1981a, p.13,20). Capitalists' actual decisions are based on the prices and rates of profit that prevail in the market and not on the equilibrium prices and rate of profit. Capitalists are in the dark as much about the equilibrium price rate of profit as they are about the value rate of profit. Using their own yardstick it should be stated that the equilibrium rate of profit and prices are 'unknown to the capitalists' and as such are of no concern to them'. As a result, they should not be considered as significant or primary.

The aim of the science is to apprehend the essence that lies behind appearances. If appearances are to satisfy us, it marks the end of science. If it is to know the prices that capitalists use in their calculations it is better, as Freeman (1984,p.246) remarks, to visit the nearest grocer rather than indulge in intricate theoretical analysis. Unlike the critics mentioned above Marx did not base the success of his theory on whether capitalists were aware or made use of his categories. He took unearthing the essence that explains the laws of motion of capitalist economy as his aim. He was aware that capitalists are blissfuly unaware of the process at work. To quote Marx, "But this is a process which occurs behind his [capitalist] back, one he does not see, nor understand, and which indeed does not interest him. The actual difference of magnitude between profit and surplus value - not merely between the rate of profit and the rate of surplus value - in the various spheres of production now completely conceals the true nature and origin of profit not only from the capitalist, who has a special interest in deceiving himself on this score, but also from the labourer. The transformation of values into prices of production serves to obscure the basis for determining value itself. Finally, since the mere transformation of surplus value into profit distinguishes the portion of the value of a commodity forming the profit from the portion forming its cost-price, it is natural that the conception of value should elude the capitalist at this juncture, for he does not see the total labour put into the commodity, but only that portion of the total labour for which he has paid in the shape of means of production, be they living or not, so that his profit appears to him as something outside the immanent value of the commodity. Now this idea is fully confirmed, fortfied and ossified in that, from the standpoint of his particular sphere of production, the profit added to the cost-price is not actually determined by the limits of the formation of value within his own sphere, but through completely outside influencs. The fact that this intrinsic connection is here revealed for the first time; that up to the present time political economy... either forcefully abstracted itself from the distinctions between surplus value and profit, and their rates, so it could retain value determination as a basis, or else abondoned this value determination and with it all vestiges of a scientific approach, in order to cling to the differences that strike the eye in this phenomenon- this confusion of the theorists best illustrates the utter incapacity of the practical capitalist, blinded by competition as he is, and incapable of penetrating its phenomena, to recognise the inner essence and inner structure of this process behind its outer appearance" (1959,p.168). Marx makes it clear that what capitalists see is at variance with the real nature of capitalism. He shows that we should be interested about not what capitalists see but what they do not/cannot see. Instead of taking the perceptions of the capitslists at their face value, Marx investigates their material basis. Because of their conception that profit emerges from the sphere of exchange capitalists are not able to recognise the inner nature of the capitalist production process. This is in consonance with the fetish nature of the capitalist market relations of which capitalists are captives. The critics by pointing out that what capitalists know is significant show that they also are not free from the influence of the fetishism. The rate of profit, as explained by Marx, that emerges as a result of the intrinsic nature of the capitalist economy should be of significance to us in understanding its laws of motions, rather than the one that arises from an equation system that does not mirror actuality.

## MORISHIMA'S ANALYSIS

Like many other economists of diverse hues, Morishima also attempts to relate labour values to prices and to derive an 'equilibrium' rate of profit. Morishima's work (1973; 1974) surfaced earlier than the works of the other two streams examined here. Yet, unlike the other two streams, he does not advocate a wholesale overthrow of labour value analysis, but would like to absorb Marx's analysis with 'stringent' conditions. In this exercise, Morishima adopts von Neumann's equilibrium balanced growth path and cost-price inequalities. Like many others he also, within his own formalisations, treats values and prices seperately and tries to find out some invariance conditions that will relate them to each other unambiguously. He explains that though Marx's analysis is marred by confusion, Marx 'almost' got a correct solution. In a way, Morishima's attempts are directed towards clarifying and correcting this solution.

While Marx tries to account for the contradiction between the law of value and the general rate of profit as the basic nature of the capitalist mode of production, Morishima tries to bring out a harmonious result out of his mathemetical treatment. Consequently he writes, "he [Marx] often confused an account in terms of values with the corresponding account in terms of price, in spite of the obvious fact that price and value are dimensionally different; the former is measured in terms of money or some other commodity taken as numeraire, the latter in terms of labour-time. Therefore a rigorous treatment of the transformation problem is possible only by normalising prices so that they are dimensionally identical with values" (Morishima, 1973,p.73). He also argues that in deriving the rate of profit as $r=S^{1}V/C$, Marx did not fully recognise that prices and the rate of profit are variables in the price system, while values and rate of exploitation are variables in the value system. That is to say, Morishima treats values and prices as two systems, rather than as content and form of the one and the same thing. Thus he also plods along the beaten path that the two are separate systems and are to be related with the help of some invariance postulate. In its place what is needed is the treatment that prices are the form of value and it is in the form of prices that values move, that because of the capitalist production and circulation process values are transformed into their opposite: prices. Similarly, the rate of profit is formed both on the basis of and in contradiction to the law of value. Instead Morishima goes in search of concepts and definitions in order to relate the law of value and rate of profit directly. Morishima resorts to this in spite of his recognition that Marx was motivated by a desire to unravel the deceptiveness of capitalist accounting in terms of prices. (Morishima 1973, p.74,84-5).

**Further,** Morishima considers the transformation problem to be one of traversing from simple commodity production to capitalist extended production. He argues that values represent simple commodity production and prices corresponds to capitalist society: "Marx started the sequence $p_o = \Lambda$ because values would give the long run equilibrium prices in the society of 'simple commodity production' (as the classical labour theory of value claims) and so these values could not be very far from equilibrium prices in capitalist society," and, "At one end of the Marxian transformation we have the long run equilibrium prices set of the classless 'simple-commodity production' economy and at the other the long run equilibrium price set of the capitalist economy" (Morishima, 1974b,p.624). Regarding simple-commodity production he writes, "But it is not an actual historical (pre-capitalist) economy but an imaginary fictitious one which is introduced because it is heuristically useful in the proof "(Morishima and Catephores, 1978,p. 173-4). He is of the opinion that this comparison helps to understand the effects on prices of a change in the social structure from one type of economy to the other. Marx **was** not concerned, as far as the formation of rate of profit is concerned, about what happens at the point of transformation of one type of economy into the other, but he was concerned about the conversion of value magnitudes into price magnitudes that takes place **all the** time in the capitalist economy. In the process of exchange particular use values of the commodities are abstracted **from and they** are treated as possesing exchange value. In the same process, the concrete nature of the labour spent is **abstracted from** and it is treated as common abstract labour that forms the substance of value. This value and abstract labour are products of capitalist relations of production. Marx was concerned about the transformation of this value into price in the process of redistribution of surplus value among aliquot parts of capital to form the general rate of profit.

Contarary to the explanation of Morishima (1973,p.74) Marx did not generalise the classical labour theory of value, but he exposed the contradictions in classical analysis as they were unable to comprehend the contradiction that emerged between the general rate of profit and the law of value in the process of capital accumulation[6]. In accounting for this contradiction, Marx takes different organic compositions of capital in different industries as the typical nature of the capitalist economy. In other words Marx's analysis is based on the recognition that the organic composition of capital is not identical among different industries. Based on this, Marx comes to the conclusion that prices deviate from values as the general rate of profit is formed out of distribution of surplus value among different units of capital on the basis of each capital's share in the total social capital.

Morishima is of the opinion that Marx's conclusions like the rate of profit $\pi$ is identical with the ratio of surplus value to total capital S/(c+V), sum of prices of outputs is equal to the sum of their values, and total profit equals total surplus value can be upheld. At the same time he feels that Marx's analysis is incomplete and needs revision in order to make these conclusions valid.

In order to overcome what he feels to be incompleteness of Marx's analysis of the rate of profit and prices of production Morishima follows iterative method. He explains that initial magnitudes in Marx's analysis are in value terms and the rate of profit is calculated on these value magnitudes. If value magnitudes differ from prices, the cost of production in value terms does not correspond to price terms and the rate of profit will not correspond to the equilibrium rate. The prices that Marx obtained represent only a first approximation. The costs of production are to be recalculated on the basis of the prices that Marx obtained as a first approximation. The new prices and rate of profit are obtained on the basis of the revised costs of production. This process of recalculation goes on until correct equilibrium prices and rate of profit are obtained. To express this procedure Morishima (1974b,p.624) uses the following equation[7]:

$$Y_t = \frac{\wedge Y_{t-1}}{\wedge MY_{t-1}} MY_{t-1}$$

In this process an arbitrary non-negative, non-zero vector $Y_0$ is taken as the starting point. From this other values $Y_1$, $Y_2$ and so on are calculated on the basis of the above formula until stationary solution $\bar{Y}$ is obtained. Form this $\wedge\bar{Y} / \wedge M\bar{Y}$ is calculated which is equal to $1+\bar{\pi}$. This rate of profit is substituted in the price equation $P_t = (1+\bar{\pi})p_{t-1}M$.[8] The resulting sequence of prices lead to the long-run equilibrium price set. But this process is fruitful only along the balanced equilibrium growth path.

In his analysis of rate of the profit, Morishima assumes equilibrium prices and an equilibrium rate of profit and examines the condition under which they become real. Morishima explains that **the** equilibrium rate of profit $\pi$ can be identical with individual rates of profit $\pi_i = S_i / c_i + V_i$, and profit equals surplus value and prices equal values if and only if identical value compositions of capital prevail in all industries. He states that profits $\pi_1, \ldots, \pi_m$ are proportional to surplus values $S_1, \ldots, S_m$, if and only if compositions of capital are equal $\frac{c_1}{V_1} = \frac{c_2}{V_2} = \frac{c_m}{V_m}$

$$\lambda_i - (C_i + V_i) = S_i \quad (i = 1, \ldots, m)$$

$$p_i - (C^p_i + V^p_i) = \pi_i \quad (i = 1, \ldots, m)$$

$X_i$ stands for values, $c_i$ and $V_i$ for value magnitudes, and $c_i$ and $v^p_i$ for priced magnitudes of constant and variable capitals respectively. Since $S_i = a\,\pi_i$ (a stands for proportionality) we obtain

$$(\Lambda - \alpha p)(I - M) = (S - \alpha\pi) = 0$$

Here M stands for input matrix. As I-M is not singular from the above expression we obtain $\Lambda = \alpha p$, i.e., prices are proportional to values. From this we have $c_i = \alpha c^p_i$ and $V_i = \alpha v^p_i$

From this proportionality of values and prices we get

$$\frac{\pi_i}{c^p_i + v^p_i} = \frac{S_i}{c_i + V_i} = e\frac{V_i}{c_i + V_i}$$

The equalisation of rate of profit also signifies identical value composition of capital. This is equal to the expression of

$$e\frac{v_1}{c_1+v_1} = e\frac{v_2}{c_2+v_2} = \dots e\frac{v_m}{c_m+v_m} = \pi$$

Substituting this rate of profit in value and price equations

$$(1+\pi)(c_i+v_i) = \lambda_i \quad (i = 1 \dots m)$$

$$(1+\pi)(c_i^p+v_i^p) = p_i \quad (i = 1, \dots, .)$$

$$s_i = \pi(c_i+v_i)$$

$$\pi_i = \pi(c_i^p+v_i^p)$$

Since $c_i = \alpha c_i^p$ and $v_i = \alpha v_i^p$ we obtain $S_i = \alpha\pi_i$.

That is to say profits are proportional to surplus values.

This condition of equal composition of capital appears restrictive and accordingly Morishima weakens it into 'linear dependence of industries'.

$$\pi(c+v)M = SM \quad \text{or} \quad (\pi(c+v)-S)M = 0$$

In this expression the matrix M is singlular, i.e., $|M| = 0$. In this matrix each column represents input coefficients, for both capital and labour for each industry. The linear dependence and singularity of the matrix implies that one of the columns of the matrix is a linear combination of other columns. He explains that Marx normalises prices such that costs of production could remain unaffected by the conversion of values into prices and that such a procedure is possible only under the assumption of linear dependence of industries. He denotes equilibrium prices obtained through Marx's algorithms $q_1 \ldots q_m$. These are proportional to equilibrium prices $p_1, \ldots p_m$, i.e., $p = \alpha q$. From this $c_p + V_p = \alpha(c_q + V_q)$. The equilibrium condition is expressed as :

$$q_i = (1+\pi)\,(c_i^q + V_i^q).$$

**Because of the** linear dependence of industries, cost of production remains unchanged in spite of transformation of values into prices $c_i + V_i = c_i^q + V_i^q$.

From $\pi = \dfrac{\sum_{i=1}^{m} S_i Y_i}{\sum_{i=1}^{m} (c_i + V_i) Y_i}$

and the above expression of equilibrium conditions and costs of production the following equality is obtained:

$$\sum_{i=1}^{m} q_i Y_i = \sum_{i=1}^{m} (c_i + V_i + S_i) Y_i = \lambda_i Y_i$$

This means that sum of the prices of outputs in terms of the Marxian prices **q** is equal to the sum of their values. Similarly the following equality is obtained:

$$\sum_{i=1}^{m} \pi_i^q Y_i = \sum_{i=1}^{m} (q_i - c_i^q - V_i^q) Y_i = \sum_{i=1}^{m} S_i Y_i$$

This means that total profit equals total surplus value. These **equalities** are possible, Morishima points out, only under **the restrictive** assumption that industries are linearly dependent.

Morishima explains the relationship **between the rate** of **profit and the rate of** exploitation with the help of **the following equation** system:

$$p_I = (1+\pi)\,(p_I A_I + WL_I)$$

$$p_{II} = (1+\pi)\,(p_{II} A_{II} + WL_{II})$$

Here $n$ is the equilibrium rate of profit, $p_I$ prices of capital goods, $p_{II}$ prices of wage and luxury goods, $W$ the wage rate per hour of labour. Further the wage rate can be depicted as

$$W = p_{II}\, WB$$

B stands for the bundle of wage goods and $W$ units of the bundle. The same can be represented as

$$W = p_{II}\, D$$

D represents the bundle of commodities demanded by the labourers with the given wages. The above prices equations can also be represented as:

$$p_M = (1+\pi)\,(p_I A_I + p_{II} DL_I)$$

$$p_{II} = (1+\pi)\,(p_I A_{II} + p_{Ml} DL_{II})$$

In matrix form $p = (1+\pi)pN$

when $p = (p_I, p_{II})$ and $N = \begin{bmatrix} A_I & A_{II} \\ DL_I & DL_{II} \end{bmatrix}$

From this equilibrium output can be represented as:

$$Y = (1+n)\, NY$$

With the help of the above equation system, once the real wage is given prices and the rate of profit 77 can be derived. Otherwise if the rate of profit 77 is given prices and real wages can be derived.

In value terms, the wage rate is expressed as

$W = \Lambda D$

The **wage** rate represents the necessary working time. Surplus working time is the excess of the daily working time on the necessary working time. It is represented as $I - \Lambda_{11} D$.

Given this rate of exploitation is expressed as:

$$e = \frac{I - \Lambda D}{\Lambda D}$$

Morishima explains that rate of exploitation depends not only on the total working time but also prices in terms of the wage rate or what he calls labour time.

The value determining eguations are represented as:

$$\Lambda = \Lambda A + (1+e) \Lambda DL$$

$$\Lambda = \Lambda A + (1+e) \Lambda DL$$

With the help of the above price and value determination equations Morishima derives $n = e\, V/c+V$. But this is true, according to him, only along the balanced equilibrium growth path.

Further, Morishima points out that Marx's conclusions: sum of values equals sum of prices and total surplus value equals total profits, can be established only when the economy is in the state of long run equilibrium balanced growth (1974,p.627-8). Long run equilibrium growth takes place when capitalists do not consume and workers do not save i.e., when capitalists spend their **total profit on** capital expenditure, without using it for personal consumption.

$K^*$ represents aggregate capital in price terms and $gK^*$ represents the growth rate of $K^*$.

$$gK^*(t) = \frac{(\alpha_I c_I + \alpha_{II} V_I)\,\Delta Y_I(t) + (\alpha_I c_{II} + \alpha_{II} V_{II})\,\Delta Y_{II}(t)}{(\alpha_I c_I + \alpha_{II} V_I)\,Y_I(t) + (\alpha_I c_{II} + \alpha_{II} V_{II})\,Y_{II}(t)}$$

$a_I$, $a_{II}$ stands for proportion of prices to values in capital goods, and wage and luxury goods branches respectively. This rate of growth is also seen to equal the proportion of capitalists saving from the profits.

$$gK^*(t) = S_c \pi$$

In value terms aggregate capital is represented by K and its growth rate by gK.

$$gK(t) = \frac{\qquad}{(c_I + V_I)Y_I(t) + (c_{II} + V_{II})Y_{II}(t)}$$

This can also be represented as

$$gK(t) = a\,\frac{S(t)}{c(t) + V(t)}$$

In this equation a stands for accumulatioin of capital, i.e., that proportioin of surplus value which is left for investment after capitalists' consumption of wage and luxury goods.

Morishima explains that Marx's equations will hold only **when,** apart from equal organic consumptions of capital in different branches, there is balanced growth and capitalists do not consume. This implies that $S_c = a = 1$. This also leads to the condition where the growth rate in value terms and price terms are equal $gK=g^{*}K$. In this context, the growth rate equals the rate of profit which is referred to as the von Neumann growth equilibrium:

$$\pi = \frac{S(t)}{c(t)+V(t)} = e\frac{1}{K+1} = g$$

This condition implies equalisation of the sum of values and the sum of prices, and of the sum of surplus values and the sum of profits. Morishima concludes his analysis, "we may thus conclude as follows: Marx's transformation formula, that the ratio of surplus value to the aggregate total capital equals the rate of profit, holds true as a relationship along the Marx - von Neumann golden equilibrium path, but it must be replaced in all circumstances" (1973,p.158).

Notwithstanding all these efforts to vindicate Marx and to clarify, correct and generalise Marx's 'almost' correct solution Morishima (1973,p.159) states that Marx's value analysis need not be adhered to, because value categories are operationally meaningless, and production coefficients can be aggregated in terms of von Neumann equilibrium production - prices. The conclusions derived on the basis of the latter method are as good as the ones based on the former. As value categories are operationally meaningless and price categories are refutable, he concludes the former method can be rejected. As is the case with the other two streams of analysis, the Sraffian School and the Analytical Marxism, Morishima also comes to the conclusion that what 'strikes the eye' is more meaningful.

Morishima's efforts were directed towards developing a formally consistent analysis where Marx's equalities could be obtained without any contradiction. He situated his exercise within equilibrium analysis as he assumed that the equilibrium rate of profit and prices of production would prevail. Given these equilibrium prices of production and rate of profit Morishima examined under what conditions Marx's equalities could be obtained along with equality of individual prices and values. In his own words, he was in search of "special cases where first approximation gives the true prices precisely" (Morishima, 1973,p.77). These special cases turn out to be, apart from zero exploitation and equal organic compositions of capital, linear dependence of input matrix and von Neumann equilibrium balanced growth path. The conditions of linear dependence and balanced equilibrium growth, like zero exploitation and equal organic compositions of capital, are also restrictive in understanding the real nature of the capitalist economy.

Dumenil (1983), Lipietz (1982), Foley (1982) and Prabhat Patnaik (1989) attempted to overcome the constraints of Morishima's analysis. In order to do this they treat value of labour-power differently. Instead of equating wages to a bundle of commodities they treat it as a share of the value added (Lipietz, 1982,p.75), 'a certain fraction of the working day' [9] (Prabhat Patnaik 1989,p.556) Based on this altered treatment of the value of labour-power, they claimed that, Marx's equalities could be obtained along with equilibrium prices and rate of profit. This solution also is not without problems. (See Naples, 1989 and Gleicher, 1989). The problem arises mainly because, contrary to their beliefs and understanding, they also situate their exercise in an equilibrium situation, which is antithetical to the nature of the capitalist economy being characterised by constant oscillations. An equilibrium situation in the capitalist economy could be visualised only on the basis of some restrictive conditions (like standard proportions). These restrictive conditions invariably lead to the sidelining of one or the other basic feature of the capitalist economy.

The limitations of these restrictive conditions are also recognised by Morishima (1973,p.155-7; 1974,p.630).[10] But he does not see that these limitations arise because of their inability to capture the typical features of the capitalist economy. He attributes these shortcomings to Marx's 'confusions' saying that Marx's analysis of equilibrium prices and rate of profit can be obtained only under restrictive conditions. Morishima is pre-occupied with equilibrium conditions and as stated earlier his efforts are directed towards examining the conditions under which these can be realised. As opposed to this Marx was not concerned about the equilibrium prices and treated the general rate of profit as a prevailing tendency. Marx dealt with the general rate of profit that took place through the adjustment of prices as a result of redistribution of surplus value among different industries. Contrary to Morishima's (1973,p.61) comment Marx was not confused between values and prices, but recognised the relation between them. Morishima by trying to find circumstances in which the 'confusion' can be justified, sets aside Marx's problem. Instead of recognising the contradiction between the law of value and the general rate of profit Morishima attempts to relate both of them directly with the help of different conditions. But these conditions fail to give unambiguous answers. This leads him, not to the recognition of the futility of this formal analysis, but to the rejection of Marx's value analysis.

## CONCLUSION

The repudiation of Marx's analysis of the rate of profit and its relation to the law of value as being inconsistant by the critics is closely related to their method. They intend to derive the rate of profit without any contradiction from the law of value. Hence, Marx's explanation that the law of value and rate of profit are dialectically related and that the rate of profit and the related prices of production are to be derived from law of value through many intermediate stages, appears to them to be untenable. In the process of discarding dialectics as a method, they also do away with Marx's law of value and other related categories that hold the key to the analysis of laws of motion of the capitalist economy. Labour-power as a unigue commodity plays a crucial role in comprehending the contradictory relation between the law of value and the rate of profit. But the same labour-power, in the critics' analysis, is reduced to a bundle of commodities, and the labourer is transformed into a beast of burden. Along with this, the relations of production specific to the capitalist mode of production are set aside, thereby robbing the whole analysis of its historical nature. In the critics' analysis, the rate of profit emerges directly from the given physical conditions of production. As a result, the roles that different spheres - production, distribution and circulation - play in the formation of the rate of profit are neglected. The rate of profit is the phenomenal form that surfaces in the sphere of circulation as a result of the distribution of surplus value, created in the sphere of production, among the capitalists according to their share in the total social capital. Because of the influence of the sphere of circulation, new elements enter in to the formation of the rate of profit. Marx writes, "The actual process of production and the process of circulation intertwine and intermingle continually, and thereby invariably adulterate their typical distinctive features" (1959,p.44). Through the uniqueness of labour-power, the labour theory of value, the role of different spheres of activity and intrinsically dialectical nature of the social process, Marx attempts to distill the essence from these adulterated forms. As opposed to this, critics embrace the same adulterated forms as complete reality. If we take this into account, the critics' claims that they are concerned with the same issues with which Marx was concerned, that they take into account the same elements that Marx so 'intensively' examined, that their analysis is in keeping with Marx's basic materialist framework, and that their analysis is more coherent than Marx's, appear unconvincing.

## NOTES

1. **Marx** points out that general rate of profit is not just **an average** of different rates of profit. In his words, "The **formation** of the average rate of profit is, therefore, not merely **a** matter of obtaining the simple average of the different rates of profit in the various spheres of **production,** but rather one of relative weight which these diffrent rates of profit have in forming this average." (1959,p.162) He also points out that formation of the general **rate** of profit is a long drawn out process, "In spite of the great changes occurring continually, as we shall see, in the actual rates of profit within the individual spheres of production, any real change in the general rate of profit, unless brought about by way of an exception by extraordinary economic events, is the belated effect of a series of fluctuations extending over very long periods, fluctuations which require much time before consolidating and equalising one another to bring about a change in the general rate of **profit."** (1959,p.166) (Also see ibid,p.173-5).

2. **Anwar** Shaikh (1981,p.268) describes their work as being in the Ricardo-Marx-Sraffa-Keynes-Kalecki tradition. One may **add** the name of Bortkeivicz to this list.

3. **Within** the overall Sraffian approach to Marx's economic analysis there appears to be two trends: one represented **by Eatwell** (1974) and Garegnani (1984), and another represented

by Steedman, Hodgson and others. Garegnani and **Eatwell make their** presentation from a historical perspective. Steedman **and** others make their presentation largely from a mathematical **perspective.** Though Steedman and Hodgson also refer to classical political economy, they seem to stand at a distance from Garegnani and Eatwell who reached the conclusion that the usual Sraffian treatment of Marxian economics lacked the transparency or clarity that Marx's analysis displayed. At **the** same time Garegnani pointed to the relevance of the labour theory of value and related categories like constant capital and variable capital, uniqueness of labour-power, while Steedman and others refuted the unique place of these categories. While Steedman treated the transformation problem as a non-problem, both Garegnani and Eatwell pointed out its relevance in Ricardian as well as Marxian analysis.

As far as the method of solution to these problems is concerned Eatwell presents, a dissenting note. He distinguishes between Bortkeivicz's, Dmitriev's and Sraffa's solutions. This is contrary to Steedman's explanation who combines the three as forming a single heritage. Eatwell describes the former's approach as a simultaneous equation approach and the latter's as an aggregative approach. He is of the opinion that the simultaneous equation approach lacks clarity of the genesis of surplus, while the aggregative approach is in conformity with Marx's approach.

4. Freeman (1984,p.231-233), while defending **Marx's analysis against** Sraffians, also points out that Sraffians do not recognise the influence of demand factors which Marx took into **account. At** the same time he also criticises neo-classicals. He comments, "This outlook distinguishes him [Marx] both from marginalists, who only see the mechanism, and the neo-Ricardians, who only see the results. For the marginalists, the play of demand and supply is in some **mysterious** way the source of value and its regulator. They analyse only fluctuations, and not their objective context." This criticism against the Sraffians cannot be made accross the board as there are some like Joan Robinson and Amit Bhaduri (1980), and Hodgson (1982) who also recognise the influence of demand forces.

5. In the course of defending Marx's analysis of the rate of profit against the criticism of Sraffians, Anwar Shaikh (1981,p.292) made an interesting comment: "The neo-Ricardians, on the other hand, are safely ensconced within equilibrium analysis, conducted on the assumption of 'something like **perfect** competition'... It has been so successful **in** its **struggle** against neo-classical theory not merely because it is better than its adversary, but also because it is so similar to it." [Also see Frank Roosevelt, "Cambridge Economics as Commodity Fetishism" in Schwartz,J. (1977)].

6. Samuelson writes, "I have got the space to deal **with** the **defensive argument that** volume I's labour theory is a (needed

or un-needed?) simplifying first approximation... to my mind, the only legitimate first approximation would be that of Smith and Ricardo in which the labour theory is first introduced with zero surplus value or profits... but is then to be dropped as unrealistic. Vol I's first approximation of equal positive rates of surplus values, $S_i/V_i$, is not a simplifying assumption but rather - to the extent it contradicts equal profit rates $S_i/(V_i+c_i)$ — a complicating detour" (1957,p.891-2). Here Samuelson reflects a formal logical method according to which whenever essence comes into contradiction with its apparant manifestation, essence is to be sacrificed in order to safegaurd appearances. Because of this he comes to the conclusion that the labour theory of value is 'to be dropped as unrealistic.' Though Morishima (1973,p.74,84-6) here defends Marx's analysis he (p.159) ultimately comes to the conclusion that Marx's theory of value is to be given up.

7. Here the rate of profit $\pi = e \frac{\wedge DL\bar{Y}}{\wedge M\bar{Y}}$. While e stands for the rate of exploitation $\wedge DL\bar{Y}$ stands for wages and $\wedge M\bar{Y}$ for total cost of inputs on balances growth path.

8. Shaikh (1977) also made a similar attempt to arrive at correct prices through an iterative process. He pointed out that in the case of the 'correct' prices of production the money rate of profit would deviate from the value rate of profit. Yet the deviation of the money rate is systematic and

determinate and the money rate of profit would vary with value rate.

A similar attempt was also made by Kliman and McGlone (1988,p.71-76) But they pointed out that their procedure should not be interpreted as an iterative one, as iterative solutions illustrated only movements in prices, but not movements in values. They also pointed out that the difference between the magnitudes of the first period and the equilibrium solution should not be treated as deviations but as an incorporation of additional value into the social capital in the interim. This incorporation of additional value into capital, according to them, accounts for different profit rates in these periods.

9. Naples (1989,p.142) explains that in their analysis labour values and surplus values only play an interpretative role, but not a causal role. Gleicher(1989) also expresses reservations about their claims. He says that the above groups' analysis transformed the Fundamental Theorem into some thing of a macro-tautology and that while variable capital is conserved, constant capital is not conserved. Value expansion in production is robbed of explanatory power with respect both to price formation and the rate of profit. In his opinion there is no tendency in capitalist economies for the prices to be equal or proportional to the quantities of abstract-labour-times required to produce commodities and no numeraire can be constructed which can conserve value, and the pursuit of conservation of equalities is a pursuit of

will-o-the-wisp. Though he did not repudiate the labour **theory** of value and its impact on prices and rate of profit, he expressed reservations regarding the present effort to evolve numeraire to conserve valuer.

10. Morishima mentioned (1973,p.59) that Marx assumed that the value composition of capital might differ from industry to industry and as a result equilibrium prices deviate from values and that profits of industries are not proportional to their surplus values. He said that this treatment was the case with only part II of volume III of Capital, whereas in part I of the same value was concerned with proportionality of profits and surplus value implyinig equal value composition of capital. But this is contrary to what Marx did. Marx took the different composition of capital as a typical feature of the capitalist economy. The analysis in part I was also based on this diverse composition of capital. Particularly the Chapters III, IV and V specifically deal with this kind of analysis, while in Chapters I and II the general rate of profit emerges in the background of different compositions of capital.

## CHAPTER - 4

## TENDENCY OF THE RATE OF PROFIT TO FALL

When Marx deals with the tendency of the rate of profit to fall (TRPF), he is concerned with the tendency, the cyclical nature of the economy, but not with the secular, irrevocable and inevitable trend. Marx recognises that, while due to the contradictory nature of the capitalist accumulation, the rate of profit tends to fall, there were also some in-built features that save the economy from an imminent collapse and lifts it out of the slump. In Marx's analysis, TRPF appears as a manifestation of the dynamism of the capitalist society, as a corollary of its revolutionary role in the development of the forces of production. Marx makes it vividly clear that the capitalism resolves its contradictions through crises. The crises, through the elimination of inefficient capitals, lay the foundation for further accumulation on a firmer basis. Notwithstanding this, a large part of the discussion on TRPF proceeded on the notion that Marx had predicted an automatic collapse of the capitalist system. It may be that sometimes efforts were made to read what is not there into Marx's formulation of the TRPF. Many of those who tried to examine Marx's analysis of the trends in the profit rate took Marx's postulation to be one of a secular downward trend and any attempt to remind them that Marx also visualised contrary configurations only draws sarcastic remarks that it is an attempt to escape modern rigour (Parijs, 1980,p.12). Parijs (1980 and 1983) and Roemer (1981), basing themselves on the capitalists' 'rationality', ruled out any possibility for a downward trend in the rate of profit. In contrast to this, what Marx had intended was to highlight the contradictions that beset the capitalist system, the inherent barriers to its growth, crises that haunt the system, the system coming out of one crisis only to land sooner rather than later in a bigger and deeper crisis (Lebowitz, 1976,p.236). Emerging out of the womb of feudal mode of production, capitalism strives towards universal development of the forces of production, in the extended reproduction of itself. In this historical mission of ceaseless expansion, capital comes face to face with its barriers. The contradictory nature of the process of capitalist accumulation, and its relation to the process of circulation presents real barriers to the unlimited expansion of capital. Here it is to be noted that capital represents relations of production between the owners of means of production (capitalists) and owners of labour-power (wage labourers), but not a certain quantity of goods used in the production either as instruments of labour or objects of labour. This points to the basic difference between the approaches of Marx and others. While Marx treats the capitalist as a personification of capital involved in accumulation and reproduction of capitalist relations of production on an extended scale; and constrained by these conditions of accumulation and reproduction, others treat the capitalist as the one carrying on his/her business according to set universal and eternal principles of 'rationality' and in the process optimising his/her as well as society's returns without harming any section of the same society. It is against the background of capital accumulation that Marx examines TRPF.[1]

## Marx's Analysis

Marx's rate of profit can be written as $S/(c/V + 1)$, i.e., the rate of profit can be described as the ratio of rate of exploitation to the organic composition of capital. Marx argues that development of capitalist production is characterised by increased expenditures on constant capital vis-á-vis variable capital i.e., the organic composition of capital rises.[2] He explains that given the constant rate of exploitation, as the organic composition of capital increases the rate of profit begins to fall.

A rise in the organic composition of capita] is represented in two ways: the employment of a high proportion of constant capital in the total invested capital in comparison to the proportion of variable capital. In other words, relatively small quantity of living labour is required for the reproduction and expansion of given capital. Within the value of an individual commodity that portion which represents living labour decreases where as the portion of materialised labour or constant capital increases. This is because of the social productivity of labour, more commodities are produced per unit of labour employed. A rise in organic composition of capital is represented by greater productivity of labour, which is expressed in the relative decrease of variable capital and increase of constant capital. As a single unit of labour produces more units of a commodity it needs more constant capital in the shape of fixed as well as circulating capital like raw materials and auxiliary materials.

Marx explains that it is a law of capitalist production that its development is attended by a relative decrease of variable capital in relation to constant capital, and consequently to the total capital set in motion.

In the next step of the analysis, he gives up the assumption of the constant rate of exploitation and argues that even in the presence of a rising rate of surplus value because of the rising organic composition of capital the rate of profit begins to slide down; that even a rising rate of surplus value had a tendency to express itself in a falling rate of profit.[3] His argument is that as a result of the rising organic composition of capital, the ratio of variable capital to constant capital, as well as total capital comes down; and, as a result, the proportion of living labour in the value of a commodity comes down. With the reduction in the proportion of variable capita], though the rate of surplus value increases because of the improved social productiveness of labour, the total surplus value produced per unit of capital falls. This implies that the rate of profit falls.

He says that a falling rate of profit does not express a falling rate of surplus value, unless the proportion of the value of constant capital to the quantity of labour power, which sets it in motion, remains unchanged; or the amount of labour power increases in relation to the value of constant capital. In a way, Marx's argument depends on the analysis that the rise in the rate of exploitation as a result of improvement in productivity is offset by the rise in organic composition of capital. Further, Marx argues that failure of the classical economists to come to grips with the falling rate of profit phenomenon was because of their inability to distinguish between constant and variable capitals, and to grasp the phenomenon of organic composition of capital and its implication for the analysis.

Marx also mentions counteracting tendencies because of which the rate of profit may not fall. These counteracting tendencies are: the increasing intensity of exploitation, depression of wages below the value of labour-power, cheapening of the elements of constant capital, relative over population, foreign trade and increase in the stock of capital. It is also to be kept in mind that these causes may only obstruct the tendency, but they by themselves do not negate it completely. In other words, they would check the fall in the rate of profit but cannot prevent it altogether.

Marx also mentions that there are certain insurmountable limits to the intensification of exploitationn of labour-power. Marx explains that the tendency of the rate of profit to fall is inherent to the capitalist accumulation process. He says that a fall in the rate of profit and accelerated accumulation are different expressions of the same process in so far as both reflect the development of productivity. Accumulation, in turn, hastens the fall of the rate of profit, in as much as it implies concentrating labour on a large scale, and thus a higher composition of capital. On the other hand, a fall in the rate of profit again hastens the concentration and centralisation of capital. Thus, according to Marx, the tendency of the rate of profit to fall signifies the underlying dynamics of the capitalist mode of production.

Criticisms:

Analytical Marxists go to the extent of writing an obituary to Marx's TRPF theory. They are of the opinion that it is no use spending any more time on it. One of the causalities in their attack on the TRPF is the organic composition of capital. Conceptually, they are opposed to the category 'organic composition of capital' as they dispute the distinction between constant capital and variable capital. In their opinion, labour-power as a commodity is in no way different from other commodities in producing surplus and there is no meaning in terming the expenditure incurred on wages as variable capital. As a result of this mistaken representation, they argue,the conception of organic composition of capital hampers the growth of Marxian analysis. "Indeed", Roemer says, "the dogmatism that has been associated with the theory of the 'organic composition of capital' has been one of the heaviest palls on the development of a creative Marxian project to study the laws of motion of modern capitalist society" (1981,p.88).

Besides this, Analytical Marxists dispute Marx's analysis that because of the nature of capitalist accumulation process the organic composition of capital increases. For example, Parijs (1980,p.1-13) contended that there was no truth in arguing that individual profit maximising capitalists necessarily prefer labour saving technology to capital saving ones; that technical composition of capital rises in the course of capitalist development; and that with the technical composition of capital, organic composition of capital also rises. Okishio's (1961) analysis is a watershed in the long debate over the TRPF. To the Analytical Marxists represented by Parijis and Roemer, Okishio's analysis comes in handy to repudiate any meaningful role for the organic composition of capital. Parijs relying heavily on capitalists' rational behaviour, a la Okishio doubt the possibility of a rise in the organic composition of capital, considering it to be a contingent fact, rather than one stemming from the nature of the capitalist mode of production. In a similar vein Roemer argues, "if one believes Okishio's model, then there is no increase possible in the organic composition of capital so great as to reduce the rate of profit. What, then, is the point of tracking the organic composition unless one first consciously questions the postulates of the Okishio model" (1981,p.113). In fact, he considers the organic composition of capital as a chalice that must be cast aside.

However, much the organic composition of capital increases, Parijs argues that it is always possible for the rate of exploitation to increase by an even larger amount, thus nullifying Marx's falling rate of profit theory. He also says that a fall in the maximum rate of profit does not imply an eventual fall in the equilibrium rate of profit and that a rise in the organic composition of capital is incapable of causing a fall in the general rate of profit. He mentions that besides the organic composition of capital there are three other elements. viz., a fall in the length of the working day, a rise in the real wage, **and** a rise in the unit value of wage goods, which provided downward pressure on the equilibrium profit rate. Needless to say that this reflects profit squeeze hypothesis which postulates an inverse relationship between profits and wages. This stance is a natural corollary to accepting the validity of Okishio's theorem.

Analytical Marxists argue that the macro phenomenon should be explained by the behaviour of the micro units of the economy. In the same line, they explain that the equilibrium rate of profit is the outcome of the decisions of the profit maximising rational individual capitalists. They place their faith in the capitalists' 'rational' behaviour. They argue that capitalists will resort to technical progress only if it produces a higher rate of profit than the previous one. In this regard, they heavily depend on Okishio who concludes, "The proposition that the new technique satisfying cost criterion introduced in basic industries necessarily increases the general rate of profit cannot be compatible with Marxian law of the rate of profit to fall. This proposition states that, however large the organic composition of production may become, the general rate of profit must increase without an exception, only if the newly introduced technique satisfies the cost criterion and the rate of real wage remains constant. And we can safely say that every production technique introduced by capitalists reduces the cost of production in terms of prevailing prices and wages. Therefore, we must accept the conclusion that every technical innovation adopted by capitalists in basic industries necessarily increase the general rate of profit unless the rate of real wages rises sufficiently" (1961,p.92). In line with this, Parijs rather strongly emphasises, "under competitive capitalism, profit maximising capitalists are condemned to technical innovations which yield a transitional rate of profit superior to the initial general rate" (1980,p.11). Roemer distinguishes between viable technical progress and progressive technical progress(1981,p.97-109). While cost criterion is taken for analysing the viable technical progress, productivity criterion is taken for analysing progressive technical progress. He explains that rational capitalists in competitive markets do not follow progressive technical methods because in the long-run it generates falling profit rates, and that they adopt only viable technical progress under which the rate of profit would increase with each introduction of technical progress. Because of the rational behaviour of the capitalists, he argues, the profit rate would not fall due to the technical progress. He also mentions that the falling rate of profit as explained by Morishima on the basis of capital using - labour saving technology is not correct as it depends on neutral technical progress, the reason being capitalists do not choose neutral technical change. He also says that if other elements like class-struggle, growth of reserve army and other deviations are introduced into the model, 'the story becomes less definitive' (Roemer, 1981, p.97-109).

Criticising Shaikh's (1978) contention that once fixed capital is introduced into Okishio's model the important inference of it becomes wrong, Parijs argues that rational behaviour of capitalists rules out any fall in the rate of profit even if fixed capital is introduced into the model. He further argues that Shaik's contention can be upheld only in non-competitive, e.g., oligopolistic situations. Similar opinion is expressed by Roemer: "Falling rate of profit theories can exist if pure competition model is abondoned" (1981,p. 132). He also says that under the assumption of competitive capitalist economy, even in the presence of fixed capital technical change would lead to rise in the rate of profit. He says that if real wages remain unchanged, no matter how one complicates the technology, the competitive profit rate can rise only as a result of technical innovation.

With the help of Sraffa's analysis, Steedman not only attacked Marx's analysis of the source of profit and the formation of the uniform rate of profit, he also trained his guns on Marx's theory of TRPF. Though Steedman explains that under Marx's normal assumptions the falling rate of profit holds, he is of the opinion that when other influences are allowed the same becomes untenable. He says that under Marx's normal assumptions a rising value composition of capital is possible and that a rising rate of surplus value, a rising value composition of capital and falling rate of profit are mutually consistent. He develops an equation system whereby he equates the ratio of constant capital to variable capital with the ratio of the rate of exploitation to maximum rate of profit. Thereby, he concludes, that a rise in rate of exploitation and a fall in maximum rate of profit entail a rising value composition of capital and falling rate of profit. He also provides the necessary and sufficient conditions for the falling rate of profit, which he says, were very much sought after by Meek (Steedman, 1981a.p.124). According to him the rate of profit would fall if and only if the rate of change of the value composition of capital is more than the rate of change of exploitation. In other words, the rate of increase in the value composition of capital should be greater than the decrease in the wage rate which leads to rising rate of exploitation.

But Steedman says that mere assertion that the statement "over the time the rate of exploitation and the value composition of capital will increase, while both the maximum rate of profit and the actual rate of profit will fall" is mutually consistent, does not lead anywhere. Because, the correctness of the first three conditions do not automatically lead to the correctness of the final conditions. Besides this when other influences like differences in turnover periods of capital and/or value composition between sectors are allowed, it falls to smithereens.

Besides all these that the four propositions in question are mutually consistent, however, does not mean that any one of them is factually correct. Steedman argues that neither Marx nor any one knew the value composition of a single economy, let alone trends in it. He says that this is because in the case of Marx simply the relevant information is not available, while in the case of others mere fact that the increase in the mass of means of production per worker is not enough as it cannot be known a priori the value rate and money rate would move in the same direction. He also argues that the same case applies to the issues of the maximum rate of profit and the rate of exploitation. Steedman feels that though the rising organic composition of capital is hypothetically acceptable, it may not be 'factually correct'. He also remarks that as it is based on labour values, it is not a significant concept for the analysis of capitalist economies (Steedman, 1981a, p.117, 124, 136). With regard to this organic composition of capital Schefold (1976, p.819), whom Steedman mentions approvingly, while examining different kinds of technical progress like saving of labour, saving of raw materials, mechanisation, saving of capital goods and inventions, says that a secular trend of it can only be postulated under special historical circumstances and nothing can be said as to any definite tendency of it. In consonance with this Steedman's conclusion is that one cannot say anything regarding the trends in the profit rate based on Marx's value analysis.

Steedman attempts to examine this issue with the help of his own 'correct formulation' based on the alternative framework: $(l+r)l(I+rH)^{-}w = 1$. Here 1 and w are row vectors of labour values and the real wage bundle respectively. The sguare matrix H shows the physical capital stocks required, whether directly or indirectly for the production of the various commodities, while r stands for the rate of profit. Here the rate of profit is described as a function of 1,H and w. He says that over time as the changes in 1,H and w include both its magnitude and its constitution it is not possible to make any _a priori_ expectation about the movement of the rate of profit. He concludes this part of the analysis by saying that there are probably some forces at work tending to increase r and some tending to decrease r over time, and there is no rational basis for expecting one tendency to pevail rather than the other.

Steedman says that the technical progress would be relevant only if it leads to higher rates of profit at some given real wage rate, and that it is impossible for the rate of profit after technical advance to be less than before the advance. Further, the rate of profit would not fall unless the real wage rises. He even scoffs at the arguement that decentralised, individual decisions need not always lead, in aggregate, to the achievement of the commonly pursued objective and the consequent inference that while each individual capitalist would respond to new technical possibilities by seeking to maximise his/her rate of profit, the overall effect can be to lower the new uniform rate of profit.

He finds one of the possible reasons for the falling rate of profit in the niggardliness of nature in Ricardian vein: "technical regress can result only from worsening conditions in the productioin of food, raw materials, fuels, minerals, etc. With a given real wage, a falling rate of profit can therefore result only from the increasing niggardliness of nature" (Steedman, 1981a.p.129). He also says that these worsening conditions might lead some elements of 1 (labour values) actually to increase overtime and affect the rate of profit negatively (Ibid, 131). Along with this, he argues that Marx's emphasis on the rise in the organic composition of capital is an unfortunate consequence of Marx's concern to argue against Ricardo that a falling profit theory did not have to be based on the limiting role of agricultural land. Thus, Steedman even with the help of an 'alternative framework' fares no better than those who relied on Marx's value theory like Sweezy, Meek, or even recently Fine and Harris, in doing away with the indeterminancy that engulfs the analysis of the trends in profit rates. Added to this, he finds the limitations of nature as being accommodative of the falling rate of profit theory as opposed to Marx, who contends that the motion of capitalist economy is to be explained by the inherent nature of it. Not only this, the retreat to Ricardo appears to Steedman and others to be 'so topical' today.

Morishima attempts to give what he claims to be the first rigorous proof of the law. In this he takes into account the golden equilibrium total constant capital and golden equilibrium variable capital instead of actual total constant capital and variable capital. He also takes into account golden equilibrium output and golden equilibrium growth rate where the growth rate is equal to the rate of profit. He feels that Marx's specification of technical change/organic composition of capital is not sufficient for rigorous derivation of the law. In this regard he adds the assumption that after technical change industries within each department are identical in value composition of capital to the assumption that in each industry a rise in capital-input coefficients is accompanied by a decrease in the labour-input coefficients. With these, he infers the TRPF to be correct (Morishima, 1973,p.142-4). Here it may be pointed out that Marx did not assume the growth in organic composition of capital but explained it, and change in technology is treated as a part of accumulation process rather than as an autonomous phenomenon.

## A RESPONSE:

Before we take up the substantial issues three related issues need to be clarified. They are: critics' contention that Marx analysed the TRPF on the assumption of constant rate of exploitation which becomes infructuous once change in production methods is introduced, that there can be no limit to rise in rate of exploitation, and that Marx did not take into consideration cheapening of the elements of constant capital in the wake of changed technology.

Contrary to the critics' contention that Marx did not take into consideration a rise in the rate of exploitation, it can be said that though Marx starts the analysis with the assumption of a constant rate of exploitation, at the next stage he gives up that assumption and argues that even in the face of rising rate of exploitation the rate of profit would fall. Contrary to critics contention that he relegated the rise in the rate of exploitation/surplus value to the counteracting tendencies Marx took this into account in the chapter on "The law as such". Marx argues that because of the rising organic composition of capital, "the commodity contains less newly added labour, but its unpaid portion grows in relation to its paid portion" (1959,p.226). Marx argues that the tendency of the rate of profit to fall is bound up with a tendency of the rate of surplus value/exploitation to rise- The rate of profit does not fall because labour becomes less productive, but because it becomes more productive. Both the rise in the rate of surplus value and the fall in the rate of profit are but specific forms through which growing productivity is expressed under capitalism. Marx states that owing to the distinctive methods of production developing in the capitalist system, "the rate of surplus value, at the same, or even a rising, degree of labour exploitation, is represented by a continually falling general rate of profit" (1959,p.213). This clearly shows that, as against the critics' arguments, Marx in fact took into consideration the rise in the rate of exploitation as an integral part of the analysis.[4] This rise in the rate of exploitation and fall in the rate of profit are manifestation of the same phenomenon, i.e., growing productivity of social labour.

The critics (Robinson 1966, Parijs, 1980) also point out that the rate of surplus value can always increase and that however much the organic composition of capital increases it is always possible for the rate of exploitation to increase by an even larger amount, thus nullifying Marx's falling rate of profit theory. Contrary to this there are strict limits beyond which the rate of surplus value cannot increase. The working day cannot be extended beyond a limit because it may endanger the reproduction of labour-power and consequently reproduction of the relations of production. Then there is workers' opposition to any attempt to reduce their wages. Also the advances in technology may not reach those sectors of the economy where wage goods are produced like agriculture.[5] Though there is a possibility for the rate of exploitation to rise, the nature and necessity of capitalist production system itself would impose certain limits on the rise in rate of exploitation.

Some critics (Robinson 1966,p.35-6, Meek 1967,p.135) also point out that Marx did not take into account the impact of cheapening of the elements of constant capital and relegated it to a mere countertendency. But as opposed to this, Marx brings in the impact of changes in values consequent upon the changing technology and productivity of labour on the cheapening of the instruments and objects of labour, i.e, constant capital. He not only treats cheapening of constant capital as a counter tendency but refers to it in the formulation of the 'law as such'. Marx writes, "To this growing quantity of value of the constant capital - although indicating the growth of the real mass of use-values of which the constant capital materially consists only approximately - corresponds a progressive cheapening of products. Every individual product, considered by itself, contains a smaller quantity of labour than it did on a lower level of production." (1959,p.212) He also writes, "Since the development of the productiveness and the correspondingly higher composition of capital sets in motion an ever-increasing quantity of means of Production through a constantly decreasing quantity of labour, every aliquot part of the total product, i.e., every single commodity, or each particular lot of commodities in the total mass of products, absorbs less living labour, and also contains less materialised labour, both in the depreciation of the fixed capital applied and in the raw and anxiliary materials consumed. Hence every single commodity contains a smaller sum of labour materialised in means of production and of labour newely added during production. This causes the price of the individual commodity to fall" (Marx, 1959,p.226). This cheapening of the commodities also affects the commodities that constitute the constant capital as well. Further chapter - V of Capital, volume III "Economy in the employment of constant capital" deals specifically with the issue of cheapening of the constant capital. This shows that Marx did not relegate the issue of cheapening of the constant capital to a secondary position in the examination of the organic composition of capita] as alleged by many critics. Apart from all these, it is to be noted that the organic composition of capital is not merely related to the value of constant capital, particularly fixed capital, but is generally influenced by the total process of capital accumulation.

That part of the debate on the TRPF concerning the organic composition of capital which to a great extent is based on Okishio's analysis appears to be lop-sided as it identifies changes in the organic composition of capital with technical change and it in turn with capitalists' 'rational' behaviour. In this exercise analysis of technical change is completely kept away from the analysis of the capitalist accumulation process. It can be said that Dobb addresses such analysts when he says, "It would have been alien to his [Marx] whole historical method to suggest that any answer could be abstractly given or that any conclusion of universal application could be deduced mechanically from data concerning technical change treated in vacuo" (1972a,p.108). As opposed to such treatment, Marx links the changes in the organic composition of capital with the changes in accumulation process that is peculiar to the capitalist production.

The capitalist production process is simultaneously a process of accumulation. The distinctive methods developing in the capitalist accumulation process create an innate tendency for concentration and centralisation of capital in a fewer hands. This process of concentration and centralisation of capital influences the rise in the organic composition of capital. The same has been side-stepped by the critics who place their faith in the perfectly competitive nature of capitalism and the rationality of the capitalist. Because of the changing production methods the portion of variable capital comes down in relation to the total capital invested. In other words, a relatively small quantity of labour is needed to set in motion a larger capital. This also means that larger amounts of capital, particularly constant capital would be needed to employ a given variable capital. This implies concentration of capital. In analysing this process, it is also to be noted that the changed production methods are carried on in the context of already given produced production forces, or already accumulated productive capital (Reuten, 1991,p.85-88). The developing productive methods hold relevance only when they are examined in the background of the existing magnitudes. Those who treat technical change in vacuo completely neglect this time and space aspects of the changes. Marx writes, "The capitalist mode of production involves a tendency towards absolute development of the productive forces, regardless of the value and surplus value it contains, and regardless of the social conditions under which capitalist production takes place; while on the other hand, its aim is to preserve the value of the existing capital and promote its self-expansion to the highest limit (i.e., to promote an even more rapid growth of this value). The specific feature about it is that it uses the existing value of capital as a means of increasing this value to the utmost" (1959,p.249).

The essence of the capitalist process of production consists in the production of surplus value. A part or portion of the surplus value would be reconverted into capital, i.e., would be accumulated. This accumulation or the reconversion of a part of the surplus value into capital "is the immediate purpose and compelling motive of the capitalist production" (Marx, 1959, p.244). This also means continuous reproduction and expansion of the capitalist relations of production. This accelerating accumulation advances social productivity of labour considerably. This in turn will be represented in the relatively less living labour compared to dead labour or constant capital needed in the production. This in turn wil appear in a higher organic composition of capital. This rise in the organic composition of capital can in turn lead to greater accumulation. In this regard

Marx writes, "The same development of the productiveness of social labour, the same laws which express themselves in a relative decrease of variable capital as compared to total capital, and in the thereby facilitated accumulation, while this accumulation in turn becomes a starting point for the further relative decrease of variable capital" (1959,p.220). Marx also mentions that this process leads to an increase of the total employed labour-power. The changing methods of production and nature of the capitalist production process leads to greater accumulation of capital. As Marx explains, it "can express itself only in a growth of the total capital at a pace more rapid than that at which the rate of profit falls. For an absolutely increased variable capital to be employed in a capital of higher composition, or one in which the constant capital has increased relatively more, the total capital must not only grow proportionately to its higher composition, but still more rapidly. It, follows, then, that as the capitalist mode of production develops, an ever larger quantity of capital is required to employ the same let alone an increased, amount of labour-power" (1959,p.223). This continuous expansion of accumulation in its wake also brings in a very important characteristic of capitalist production viz., concentration and centralisation of capital. This concentration and centralisation of capital also leads to a higher composition of capital. Explaining this aspect of the capitalist production process Marx writes, "The development of capitalist production and accumulation lifts labour-processes to an increasingly enlarged scale and thus imparts to them even greater dimensions, and involves accordingly larger investments of capital for each individual establishment.

A mounting concentration of capitals (accompanied, though on a smaller scale, by an increase in the number of capitalists) is, therefore, one of its material requirements as well as one of its results... The causes which concentrate masses of labourers under the command of individual capitalists, are the same that swell the mass of the invested fixed capital, and auxiliary and raw materials, in mounting proportions as compared to the mass of employed living labour" (1959,p.219). The growth of the mass of invested capital "requires a simultaneous concentration of capital, since the conditions of production then demand employment of capital on a larger scale. It also requires its centralisation, i.e., the swallowing up of the small capitalists by the big and their deprivation of capital. It is again but an instance of separating - raised to the second power - the conditions of production from the producers to whose number these small capitalists still belong, since their own labour continues to play a role in their case. The labour of a capitalist stands altogether in inverse proportion to the size of his capital, i.e., to the degree in which he is a capitalist. It is this same severance of the conditions of production, on the one hand, from the producers, on the other, that forms the conception of capital. It begins with primitive accumulation, appears as a permanent process in the accumulation and concentration of capital, and expresses itself finally as centralisation of existing capitals in a few hands and a deprivation of many of their capital (to which expropriation is now changed)" (Marx, 1959,p.246). This process of concentration and centralisation of capital on the one hand, and rising organic composition of capital on the other reinforce each **other,** more so in the background of falling rate of profit. **Marx writes,** "Accumulation, in turn, hastens the fall of **the rate of** profit, **in as** much as it implies concentration of labour on a large scale, and thus a higher composition of capital. On the other **hand, a** fall in the rate of profit hastens the concentration of capital and its centralisation through expropriation of minor capitalists, the few direct producers who still have any thing **left to** be expropriated" (1959,p.241). Discussing Dobb's contribution to the analysis of capital, Anwar Shaik (1978) points out that a rise in the organic composition of capital is the cause but not conseqeuence of fall in the rate of profit. Though in principle this stand is correct, there is also a possibility that as a reinforcing mechanism a fall in the rate of profit may lead to a further rise in the organic composition of capital as it hastens the concentration and centralisation of capital. The trend that set in with the primitive accumulation of capital continues with the capitalist production process, leaving its imprint on the composition of capital. Changing production methods compelled by the capitalist accumulation process which **results** in the continuous expansion of capitalist relations of **production,** and concentration and centralisation of **capital as the innate nature** of capitalist accumulation lead to a higher organic **composition** of capital[6].

In this way the organic composition of capital rises as a necessary part of the continued accumulation process **under capitalist** dispensation. But this rise in the organic composition **of capital** cannot be denied or even supported on the basis of the individual capitalist's rational motives, as done by Roemer, Parijs and others basing on Okishio's model. Further they situate their analysis in the milieu of perfect competition where capitalists take decisions 'rationally'. In this analysis, it is the behaviour of the micro unit that determines the macro phenomenon and the influence of social and historical conditions are kept at bay. As opposed to this, Marx's anaysis clearly takes into account the influence of the material production process which is characterised by concentration and centralisation of capital, the anti-thesis of perfect compition and rational, non-contradictory behaviour of individual capitalist. The issue of the organic composition of capital is so not much about labour-saving versus capital-saving technology but about the capitalist accumulation process. The technical change that takes place in the capitalist production process will be propelled more by the necessity of the further expansion of the capitalist accumulation and reproduction of the capitalist relations of production on an even extensive scale rather than by the rational motive of the capitalists. In this context, to develop a critique of Marx's analysis of the organic composition of capital and the TRPF on the basis of capitalists' rational motives and on the criteria of perfect competition, while being basically static (Weeks, 1982), ill suits Marx's purpose of the study of the laws of motion of capitalist society. Further, Roemer derives the impossibility of the rise in organic composition of capital so great as to reduce the rate of profit from the assumption that rational capitalists take only those decisions that maximise the profit rate. For Analytical Marxists, like Roemer and Parijs, absence of a rise in the organic composition of capital becomes necessary/functional to maximise profits. A rational capitalist always takes decisions that maximises profit. To maximise profit there should be absence in the rise in organic composition of capital. So the rise in the organic composition of capital becomes impossible. Then can not the blame for blunders of functional explanation be laid at the door of Roemer and fellow Analytical Marxists? (Hodgson,1986). Similar may be the case with Laibman (1982,p.104) who saying that there are definite conditions, consistent with capitalists' micro-rationality in which a rising organic composition of capita] and falling rate of profit can occur, tries to save both Marx and Okishio at the same time. Here it is to be stressed that the parameters within which Roemer and Parijs examine, i.e, perfect competition and rational capitalist do not apply to Marx's analysis which highlights the basically imperfect nature of the capitalist production sytem. The same criticism applies to those who visualise the impossibility of a fall in the rate of profit and a rise in organic composition of capital as they think that a technical change cannot lead to a fall in the rate of profit. This may be because of the narrow view of technical change, where technical change takes place because of the maximum rate of profit seeking rational capitalist, rather than because of the necessity of the capitalist accumulation process.

The opposition to Marx's analysis of the TRPF is based on the argument that capitalists' decisions can only lead to a rise in the rate of profit. The rational capitalist would not take any decision that would lower the rate of profit. So also when capitalists introduce technical change it can lead only to a rise in the rate of profit, but not to a decline. This is based on the assumptions of the existence of equilibrium and perfect competition. Here capitalists take the decisions independently of the process of capital accumulation underway. But this is not in consonance with reality. Capitalists do not operate as autonomous independent agent acting on the basis of certain universal rules of logic.

The capitalist acts as a member of the class of the appropriators of surplus value. His/her aim is to corner maximum profit. In this act he/she is not only pitted against labourers, but also he/she is at war with fellow capitalists on sharing the surplus value produced. The postulate of perfect competition cannot capture this process of generation and distribution of surplus value and resulting accumulation of capital. This process of accumulation further leads to concentration and centralisation of capital[7]. In fact Marx pointed out the rationality of the typical capitalist, in times of crises "he [capitalist] deliberately lowers his rate of profit in order to drive the smaller ones to the wall" (1959,p.225), leading to further concentration of capital[8]. But this normal behaviour appears abnormal to those who base their analysis on the existence of equilibrium and perfect compitition.

Changes in the rate of profit depend on the surplus value produced and changes in the composition of capital. The capital accumulation process is characterised by a rise in the ratio of constant capital to variable capital. As the amount of variable capital, the source of surplus value, per unit of capital comes down, the amount of surplus value produced per unit of capital even in the face of a rising rate of exploitation also comes down. This implies that the rate of profit falls. Though the rate of profit falls, the absolute profit produced in the economy need not fall. As the level of accumulation of capital moves on, the amount of capital involved also increases. In an economy profit produced at a lower level of accumulation when total amount of capital is small, even in the presence of higher rate of profit, will be smaller than the profit produced at a higher level of accumulation when amount of capital is large, even though the rate of profit is low.

Marx's emphasis on social relations of production and acumulation process of capital underlines the dynamic nature of the issues that arise. The dynamic nature of the TRPF is an example of this. Due to the essentially equilibrium nature of their analysis, Sraffians and Analytical Marxists fail to grasp the essence of the issues at hand. The dynamic nature of accumulation and technical change as a part of it cannot validate the equilibrium framework of the Sraffians and the Analytical Marxists. The technical change as a part of the changing production methods affects prices. The prices at the beginning of the production cannot be equal to the ones that come into existence following the introduction of new technology. The attempts to examine technical change in terms of equilibrium

**prices fail as** they do not take into account the changing values/prices. Because of their resorting to equilibrium prices the Sraffians, the Analytical Marxists and other critics **attribute** changes in the rate of profit to changes in wages. The static nature of their analysis obviates the examination of the tendential process of accumulation and of the rate of profit. Marx's method of analysis helps to capture the contradictory tendencies inherent to the capitalist accumulation as manifested by the TRPF.

In keeping with the equilibrium approach, criticism of the TRPF is cast in static terms. Because of this we are given unchanging, stable prices and rate of profit. The tendential nature of the variables is neglected. The TRPF arises as a result of the dynamic process of capital accumulation. Once equilibrium conditions are visualised, conditions for the existence of the TRPF are spirited away. On the other hand, if the equilibrium approach and its static analysis is kept aside and dynamic nature of the phenomenon is taken into account, the existence of the TRPF becomes possible.

They treat all capitalists as being similar, in facing the same conditions and showing similarity in behaviour (Weeks, 1982,p.64). In reality, different capitalists control different magnitudes of capital and also different conditions of production. Besides these the state of development of forces of production and as such the capacity to appropriate surplus value are also diffrent. These do not imply equilibrium condition where all capitalists face identical conditions in the process of obtaining optimum rate of profit. On the contrary, it connotes the struggle among capitalists to appropriate surplus value, implying a basically disequilibrium situation. It can also be said that the situation is one of stratification of capitals (Weeks, 1981,p.205-207; Reuten, 1991, p.86-87), rather than aggregation of homogeneous units.

The specific conception of competition as equilibrating mechanism underlies critics' examination of the TRPF. The competition among capitalists does not always lead to stable equilibrium conditions. Because of the nature of capitalist relations of production, different stages of development of productive forces/technology under which different units of capital operate, capitalists' insatiable appetite for accumulation and consequent changes in organisation of capital competition appears more like war among capitalists to capture as much profit as possible. In such conditions the criterion that influences the introduction of technical change would be completely different from the one that applies to the perfect competitive conditions under the equilibrium analysis. The TRPF, being an outcome of dynamic disequilibrium process, cannot be accepted by those who are firmly entrenched in equilibrium analysis. The process of concentration and centralisation inherent to the capitalist accumulation process leads to the TRPF.

The increased use of fixed capital and, as an accompaniment of it, constant capital as compared to variable

**capital is an** outcome of the relation between capital and labour specific to the capitalist mode of production. With the possibility of increasing absolute surplus value becoming unavailable, the reliance is shifted to relative surplus value. This leads to perfecting the labour process through mechanisation. This tendency is strengthened by the process of alienation inherent to the capitalist relations of production. The alienation of direct producers from conditions of production that starts with the primitive accumulation of capital takes the form of concentration and centralisation of capital as accumulation of capital accelerates. The concentration of capital through employment of capital on a large scale leads to higher composition of capital. The centralisation of capital through progressive expropriation of direct producers and minor capitalists, and through increased expulsion of labour from the production process because of the changed methods of production also leads to higher composition of capital. Those who place their faith in perfect competition and equilibrium analysis by-pass this tendency natural to the capitalist economy.

Because of the nature of the capitalist development process even in the presence of a rise in the rate of exploitation/surplus value, there is tendency for the rate of profit to fall. The developed social productiveness of labour also influences the rate of surplus value. Yet the rise in rate of surplus value, because of limits to the working day and changing wage structure in the wake of changed production conditions may not be able to offset changes in the organic composition of capital. As Marx (1959,p.226) maintained the unpaid portion of newly added labour grows in its relation to the paid portion, but only within certain limits.

Because of the expanded accumulation of capital and the resultant change in organic composition of capital, expenditure of capital on labour-power as a proportion of total capital is on the decline. Opposed to this, the mass of constant capital and as a proportion of total capital, even after taking into account cheapening of the elements of constant capital, is on the rise. As the total living labour employed as a part of total capital expenditure is on the decline, total surplus value produced in relation to the total capital also comes down. Since the rate of profit is represented by the ratio of surplus value to total capital, the decline in the proportion of variable capital and consequently in the surplus value produced and rise in the proportion of constant capital and also of mass of total capital will be reflected in a fall of the rate of profit.

Even if the rate of exploitation rises, as variable capital vis-a-vis constant capital decreases, total surplus value may not rise to offset the increased mass of constant capital. As the denominator of the rate of profit (i.e., c+V) is growing more than the numerator of the rate of profit (i.e., S) and because of the changing production conditions the former increases while the latter decreases, the rising rate of surplus value is represented by a falling rate of profit.

It is not only that as accumulation accelerates it leads to large scale employment of means of production which in turn is possible only under the conditions of concentration and centralisation of capital, and thus leading to rise in organic composition of capital and fall in the rate of profit, but also a fall in the rate of profit itself in turn hastens the concentration and centralisation of capital as small capitalists are driven to the wall in the face of a falling rate of profit and their capital being appropriated by big capitalists.

Though because of the changing methods of production variable capital as a proportion of total capital declines, the total labour-power employed, in response to the expanded accumulation of capital, increases. As changing conditions of production facilitate further expansion of accumulation, it requires employment of more labourers in order to set in motion materialised labour under the new dispensation. Because of the growth of total capital, the amount of capital spent on labour-power under the previous composition of capital is not sufficient to employ labour-power needed to set in motion constant capital under changed methods of production. Because of the nature of capital accumulation expenditure on variable capital relatively, as a proportion of total capital declines, total or absolute amount of capital spent on variable portion increases. This signifies increased employment of labour-power.

As the total number of workers employed increases and also the rate of surplus value increases as a result of development of social productiveness of labour, the mass of surplus value and hence profit produced increases. In spite of the increasing organic composition of capital, the absolute mass of surplus value appropriated by capital grows. The TRPF signifies relative decline of surplus value/profit but not absolute decline. The fall in the rate of profit is not because of decline in absolute profit but because of its relation to increasing mass of capital employed. In other words, in spite of the TRPF, the total capital accumulated increases. As Marx writes, "on the whole a relative decrease of variable capital and profit is accompained by an absolute increase of both. This two fold effect... can express itself only in a growth of total capital at a pace more rapid than that at which the rate of profit falls" (1959,p.223). The TRPF and accelerated accumulation are different mainfestations of the same dynamics that propel the motion of the capitalist economy.

The criticism against Marx's analysis of TRPF arises mainly from the critics' failure to caputure the dynamic nature of the phenomenon as their analysis is concerned only with static conditions and the 'rationality' that they attribute to capitalists.

Analytical Marxists rule out any possibility for a downward trend in the rate of profit on the basis that rational behaviour of capitalists obviates any possibility for such an outcome. They are of the opinion that rational capitalists are 'condemned' to undertake only profit rising measures. Here they take a narrow view of technical change as a mere changed relation between instruments and objects of production, and fail to situate them as a part of the accumulation process. In attributing unquestioned rationality to the capitalists, in the tradition of neo-classicals, they totally neglect the essential nature of the capitalist production process.

Contrary to the analysis of Analytical Marxists, capitalism is not characterised by static equilibrium conditions, but by a dynamic disequilibrium process where because of the capitalist accumulation process, concentration and centralisation of capital set in. In these conditions, the criterion that capitalists follow is not the one as maintained by the Analytical Marxists. Capitalists attempt at capturing monopoly power over as much social capital as they could grab and profits related to it. In this process, they resort to cheapening of commodities and drive their competitors out of the market (Marx, 1954,p.586; Shaikh, 1978,p.245-6). In this process, during crisis period they even resort to deliberately lowering the rate of profit in order to drive smaller capitalists to the wall. The TRPF emerges as a logical outcome of the capitalist production process.

When it is pointed out (Shaikh, 1978,p.242-3) that the Okishian model, on which Analytical Marxists depend for their analysis, may not be applicable in the case of fixed capital as it is concerned with the situation where capital is equated with circulating capital, they again invoke capitalists' rationality to say that under given assumptions of perfect competition and capitalists' rationality whatever be the method of production, *i.e.,* whether fixed capital is used or not, the rate of profit would not come down. Others who addressed the problem of fixed capital vis-á-vis the Analytical Marxists and Okshio like Alberto and Persky,[9] and Laibman[10] fail to question the basis of the Okishian model and certify its basic soundness. The rate of profit cannot be analysed apart from the fixed capital, because as development of capitalist production progresses, as a characteristic of growing labour productivity fixed capital comes to form a significant proportion of constant as well as total capital. Mechanisation of the production process, as a result of the relation between capital and labour, increasingly involves intervention of instruments of labour or fixed capital in turning a greater mass of objects of labour or circulating capital per unit of labour into commodities. Marx's analysis of the TRPF to a great extent hinges upon a rise in constant capital which invariably consists of fixed capital along with circulating capital. Neglect of this aspect by the critis raises the question as to whether they are in fact examining Marx's analysis or something else. Roemer (1981,p.119-124) attempts to address this issue. But he takes into account fixed capital that lasts forever, which means that value of fixed capital would not be transferred to commodities produced and that it need not be replaced. This amounts to say that fixed capital does not exist as far as the analysis of value and rate of profit is concerned. This shows that their analytical apparatus is not successful in capturing the specificity of the capitalist dynamics.

More than capitalists' rationality it is their opposition to Marx's analysis of uniqueness of labour-power and the related analysis of the organic composition of capital that drive the critics to oppose Marx's analysis of the fall in the rate of profit. Both the Analytical Marxists and Sraffians repudiate the distinction between constant capital and variable capital and consequently set aside the category: organic composition of capital, arguing that labour-power is in no way unique in producing surplus value. By totally obliterating this vital distinction they rob the specificity of Marx's analysis. If we note their total sidestepping of the issues of uniqueness of labour-power/variable capital as the source of surplus value and the role played by constant capital in the production process, we need not wonder that they come to the concluisions that are completely opposed to Marx's[12].

Besides these, the Ricardian argument that the rate of profit falls as a result of rise in wages because of the limitations imposed by nature on the production of wage goods reappears in the works of Sraffians like Steedman (1981a,p.129-131). This is also reflected in the strict inverse relationship that they postulate between wage rate and profit rate. This is possible only if the movements in the rate of surplus value and rate of profit are identical. That is to say, the rate of profit falls only if the rate of surplus value falls. The rate of surplus falls when the worker has to work for a greater part of the day for himself and the time during which he works for capitalist gratis decreases. This is the case when values of necessaries and consequently wages rise. In other words, in this case the rate of profit falls only when the wages rise, via fall in the rate of surplus value. As opposed to this because of the development of social productiveness of labour values of commodities decline.[13] Reflecting this the time during which the worker has to work for himself decreases and surplus labour time increases, i.e., the relative value of labour falls and relative surplus value increases. In this phenomenon of the capitalist economy, the rise in the rate of surplus value and the expansion of accumulation is bound up with a fall in the rate of profit. The problem is to explain the fall in the rate of profit even in the presence of a rise in the rate of surplus value. Marx's analysis of the TRPF addressed this issue. The rate of profit falls even in the presence of a rise in the rate of surplus value as the organic composition of capita] increases with the development of the productive power of labour. This phenomenon surfaces as an inherent characteristic of the capitalist acumulation process, of capitalist relations of production, not because of the niggardliness of nature.

## CONCLUSION:

The TRPF, as an expression peculiar to the capitalist mode of production, is a logical outcome of the contradictory tendencies inherent in the capitalist economy. Contrary to those wh out a fall in the rate of profit on the basis of rationality of capitalists, the capitalist accumulation process contains the possibility for the rate of profit to fall. Fall in the rate of

**profit is** bound up with the expansion of accumulation of capital. Under the capitalist mode of production, development of social productiveness of labour contains an 'inner and necessary connection' between these two contradictory tendencies.

## NOTES

1. Along with the analysis of the relation between the rate of surplus value and the organic composition of capital as an explanation of the TRPF, there are two other explanations adduced to account for this. One of them is the inverse relationship between the wage and rate of profit. Here a fall in the rate of profit is attributed to the rise in wage rate. This is being referred to as the profit sequeeze hypothesis (Szymanski, 1984). Another problem is that of realisation of surplus value. This is being referred to as the underconsumption hypothesis (Weiskopf, et al, 1985) Regarding the profit sequeeze hypothesis see Marx (1968, p.192-203). Regarding the underconsumption hypothesis see Weeks (1979,p.283-4).

2. Regarding the distinction among technical, value and organic compositions of capital Marx explains, "The composition of capital is to be understood in a two fold sense. On the side of value, it is determined by the proportionn in which it is divided into constant capital or value of the means of production, and variable capital or value of labour-power, the sum total of wages. On the side of material, as it functions in the process of production, all capital is devided into means of production and living labour-power. This latter composition is determined by the relation between the mass of the means of production employed, on the one hand, and mass of labour necessary for their employment on the other. I call

the former the _value-composition_, the latter the _technical composition_ of capital. Bewteen the two there is a strict correlation. To express this, I call the value-composition of capital, in so far as it is determined by its technical composition of capital and mirrors the chaanges of the latter, the _organic composition_ of capital. Whenever I refer to the composition of capital without further qualification, its organic composition is always understood" (1954,p.574). In analysing the TRPF the necessity to take into account this distinction is underlined by Fine and Harris (1976,p.162), and Weeks (1981,p.198-9).

3. Joan Robinson (1966) argues that in response to technical change, the organic composition need not rise and rate of surplus value need not remain constant and that the outcome contradicts Marx's conclusions. Meek (1967,p.131-6) argues that Marx in fact took into account a rise in the rate of exploitation, but he did not take into account cheapening of elements of constant capital; the final outcome being indeterminate. Rosdolsky (1977) attempts to stick to Marx's falling rate of profit theory by explaining that it is a necessary outcome of capitalist production and constitutes the basic law of motion of capitalism.

4. When Marx discusses a rise in the rate of exploitation as a part of the counteracting tendencies, he refers to a rise in intensity of exploitation and lengthening of the working days. When he refers to the rise in the rate of exploitation

consequent upon the rise in the organic composition of capital, he discusses it as part of 'The law as such'. See Rosdolsky (1977,p.398-405) and Meek (1967,p.131-135).

Laibman (1982,p.98-100) attempts to rescue both Marx and Okishio at the same time. He attempts to develop falling rate of profit on the basis of a constant rate of exploitation with **the** argument that the Okishio-Morishima-Roemer tradition takes the wages as given to represent neutral class relations which, he says cannot represent it and that only a constant rate of exploitation can represent the said neutrality. But this analysis cannot stand in the face of a rising rate of surplus value and as such is susceptible to the criticisms of Joan Robinson.

5. See Rosdolsky (1977,p.407-411) and Lebowitz (1976).

6. **Many** supporters of Marx's formulation of TRPF while examining the organic composition of capital do not take this concentration and centralisation of capital into account. They attribute it either to rising wages consequent upon rises in the demand for labour in the wake of expanding accumulation and resulting fall in profit which leads to labour saving production methods or technical/engineering culture natural to the capitalist mode of production. Dobb (1972,p.123-125), Shaikh (1978,p.237-238), Laibman (1982) and Reuten (1991,p.82-84).

7. Though Harris,D.J. (1983,p.326-328) accepts **that** the treatment of monopoly is not a formal but a substantive one, he does not make any progress as the major conclusions of his analysis flow from the assumption of perfect competition. His analysis of this aspect in no way furthers our understanding from where Parijs (1980,p.12) and Roemer (1981,p.132) left after making similar comments regarding imperfect competition.

8. In this regard Shaikh points out, "But the point is precisely that within the battle of competition, the choice is not 'voluntary' in the above sense (at least, no more so than in any other type of war)... No side in a war voluntarily chooses to lose, and few combatants voluntarily choose to die, but one side does always lose, and many do end up dying. It is in the nature of warfare that it cannot be characterised by a series of 'voluntary' choices among congenial outcomes" (1978,p.245-246).

9. Alberto and Persky (1979,p.37-41), though argue that because of the imperfection of expectations that characterise the anarchy of capitalist production and because of the quickness of technical change which makes previous technology, through which super profits were expected, obsolete and realise reduced profits leading to fall in the rate of profit, attempt to explain that even if fixed capital is introduced Okshio's conclusions still remain robust.

10. **Laibman** (1982,p.100-1) describes **a** 'pure' **fixed capital case in** which there are no material flow inputs **and capital goods do not** depreciate, consequently no 'indirect labour', **which effectively** will mean no **fixed** capital.

11. Weeks (1982,p.66) recognises the limitations of the Okishian model in treating fixed capital. He attributes it to its static nature and its formalistic treatment of time where the past, present and future are perfectly interchangeable.

12. **Marx** attributes the failure of Ricardo and other **classical political** economists in analysing the falling raate of profit to their inability to conceive the organic composition of capital and the related issues. Marx writes, "When we consider, ..., that up to the present political economy has been running in circles round the distinction between constant and variable capital, but has never known how to define it **accurately**, that it has never separated surplus-value from profit, and never even considered profit in its **pure form** as **distinct** from its different, independent components, such as industrial profit, commercial profit, interest, and ground rent, that it has never thoroughly analysed the differences in the organic composition of capital, and, for this reason, has never thought of analysing the formation of the general rate of profit - if we consider all this, the failure to solve this riddle is no longer surprising." (1959,p.213-4).

13. **The mission** of the capitalist mode of production is **to unleash** forces of production. This **affects not only industrial** sector but also the agricultural **sector. (See Marx,** 1968,p.459-461).

# CHAPTER - 5

## CONCLUSION

The challenge thrown at Marx's analysis by those who tried to reinterpret Marx's contribution to economic analysis in the light of recent developments can be summed up in the words of Steedman: "This conclusion... is the conclusion of an argument in logic; should anyone wish to challenge it, they must do so either by finding a logical flaw in the argument or by rejecting explicitly and coherently one or more of the assumptions on which it is based", and "the present type of argument has been examined, in various forms, by many different writers over the last 80 years. The same conclusions have always been reached and no logical flaw has ever been found in such arguments" (1981a,p.49). Those arguments, it is to be noted, are based on formal logical analysis. According to them, logical consistency is possible only within the confines of formal logic. Following this they try to relate the concrete and the abstract without any intermediate linkages. Any contradiction between abstract and concrete, particular and general appears to them to be the breakdown of science. As a result Marx's, following dialectical method, explicit acknowledgement of contradictions and his economic analysis which is based on the examination of the contradictions that are characteristic of capitalist mode of production are not acceptable to them.

The conclusions that are said to be accepted for the last 80 years are based on formal method which deny any role for the analysis of contradictions. Marx addresses precisely this treatment when he criticises James Mill that the disintegrationof the Ricardian school starts with Mill as he attempts to achieve formal, logical consistency. (Marx, 1971, p.84) The critics by trying to brush aside contradictions entangle themselves in further contradictions.

The critics, both the Sraffians and the Analytical Marxists, are opposed to Marx's dialetical method. They are of the opinion that dialectics can achieve nothing that cannot be done by the formal method. Further dialectics is a redundant exercise replete with anamolies. In their opinion dialectics leads to contradictory results. Their criticism of Marx's method is based on Karl Popper's criteria of scientific method, according to which a scientific proposition should be amenable to be tested by empirical evidence. If a theoretical proposition appears to stand in contradiction to percieved concrete conditions then the said proposition is to be treated as incorrect. In their treatment any contradiction between the general and the particular, the abstract and the concrete appears as leading to the breakdown of science. In their analysis dialectics has no place.

Contrary to the contention of the critics dialectics, instead of giving rise to contradictory results, highlights the contradictions that charactrise the concrete phenomena.

Dialectics through examining the unity of opposities, contradictory aspects of the concrete phenomenon attempts to grasp determining, inner relations. Also, basing on dialectical analysis Marx instead of sidelining facts (concrete evidence) takes into account the historical nature of these facts. Consequently critics' argument that Marx's dialectical method is idealistic is mistaken.

Dialectics examines the process of change taking into account the interconnections and interrelations among the things. Dialectics studies laws of motion pertaining to nature, society and also thinking. It is based on the idea that change is the fundamental feature of all concrete things. It considers that physical world as well as society are in incessant motion. In this incessant motion, because of mutual interpenetration of polar opposites, continuous transformation is taking place. Dialectics underlines the transient nature of the phenomena and attempts to comprehend the process of this change.

In its analysis of motion and change dialectics stands in quite contrast to the formal method and its principles of identity, excluded middle and non-contradiction. The formal method, as it holds everything as permanent and non-contradictory, is incapable of capturing reality. In reality everything is in incessant motion and change, and at every moment a thing is both identical with itself and becoming distinct from itself as it passes into its opposite. In contrast to the formal method,

**dialectics** attempts to capture the change as being **a result of unity** of opposites, unity of contradictory moments.

Notion of contradiction is fundamental to **the** dialectical method in explaining change. Motion and change cannot be explained without taking into account the contradictions that are inherent to the things. Dialectics, unlike the formal method, instead of concealing contradictions quite explicitly takes into account the presence of these contradictions and their resolution leading to developed forms.

Dialectics operate not only in the realm of nature and society but also in the realm of thinking. Dialectics considers **the** contradictions that arise in definition and concepts as a mainfestation of the contradictions inherent to natural and social **phenomena.** Dialectics does not attempt to conceal these contradictions, but tries to examine their resolution. Unlike dialectics, formal method considers the contradictions that emerge in the process of comprehension of the phenomena as purely subjective and tries to resolve them by redefining or refining definitions and concepts. In this process formal method instead of overcoming those contradictions, is engulfed in further contradictions.

Marx's endeavour was to examine the laws of motion of the capitalist economy. It involved the analysis of dynamic conditions. The need was to study the passing of one condition **into the** other, examination of the opposite forces which inhabit apparently non-contradictory situations, impact of the contradictions of those opposite forces. These elements could not be analysed within the confines of the formal, analytical method which frowned upon any acknowledgement of the contradictory forces. Because of the inadequacies of the formal method in understanding the dynamic nature of the capitalist economy Marx relies on the dialectical method.

The dialectical method plays a crucial role in Marx's analysis of source of profit, i.e., exploitation of labour/surplus value. Because of the nature of the capitalist production, origin of surplus value appears to come into contradiction with the universal law of capitalist production, law of value. Surplus value emerges even when commodities are exchanged at their values. In other words, surplus value is extracted without contradicting the fact that commodities are exchanged in proportion to the social labour time congealed in them. The existence of surplus value appears to stand in contradiction to the law of value. Following the formal method one would have attempted to change the meaning or definition of either surplus value or value in order to see that the contradiction disappears. In the process either the law of value or surplus value or both would have disappeared.

Karl Marx following the dialectical method does not set aside the contradiction, but analyses the contradictions in order to understand their basis. The problem that Marx set himself to solve is how to explain origin of surplus value 'both in circulation and yet not in circulation'. The origin of surplus

**value is to** be explained on the basis **that commodities are exchanged at** their values. This entails the existence of a **commodity** within the sphere of circulation whose use value **possesses** the unique characteristic of being source **of surplus value without** voilating the law of value. Marx explains **that the existence** of labour-power as a commodity in the capitalist economy solves this problem. Labour-power for the first time becomes a commodity only under the capitalist relations of production as labourer is alienated from the conditions of production and is forced to enter the market as the agent or owner of labour-power, and capitalist obtains monopoly power on these conditions of production. Labour-power is that peculiar commodity which is capable of producing value over and above what is needed to obtain it.

It is the exchange between capita] and labour that helps to explain the source of profit. Like other commodities, labour-power also has exchange value and use value. The exchange value of labour-power is determined by the value of necessary commodities needed for the existence and reproduction of the labouring class which is influenced by social and historical conditions. Its use value for the capitalists lay in creation of **value.**

Opposition of the Sraffians and the Analytical Marxists **arises from their** hostility to Marx's method of dialectics. They are of the opinion that the shortcomings in Marx's analysis **surface** because of the method **he follows.** Both of **them repudiate**

Marx's contention that labour-power as a commodity possesses peculiar characteristic of creating value over and above what is needed to acquire it. They argue that any other commodity that goes into the production of every other commodity can be used to explain the phenomenon of profits. Depending on the stages of technological progress, they contend, one can explain the origin of surplus value on the basis of exploitation of corn, steel or energy. In other words, the corn theory of exploitation or steel theory of exploitation or energy theory of exploitation can explain the emergence of profit and consequently labour-power does not have any uniqueness in accounting for the source of profit.

The Sraffians contend that commodities produce themselves with a physical surplus. Formalisation that they follow, in keeping with the formal method whereby they deny any role for contradictions, helps them to show that labour-power is in no way unique from other commodities. In this analysis labour-power as such does not enter the formalisation. The commodities which labourers use for their subsistance take its place. In other words, labour-power is reduced to a bundle of wage goods. In this exercise labour-power is indiscernible from other commodities. Basing on their formal method they argue that labour-power is in no way unique from other commodities and any other commodity can be used to explain the source of profit:. They argue that Marx's explanation of the uniqueness of labour-power comes from the existing assumptions, i.e., the thing to be proved is already assumed. In their opinion, the concept of uniqueness of labour-power does not help in explaining the source of profit.

In **this** they neglect social relations of production and take into account only technical relations. In order to overcome the contradiction between the law of value and emergence of surplus value they give up the concept of exploitation of labour altogether.

Like the Sraffians, the Analytical Marxists also dispute Marx's explanation of source of profit. They also argue that labour-power as a commodity is not unique in its magical property of producing more value and that in an economy capable of producing surplus any commodity has this unique capacity. They even go a step further and argue that only motives of individuals can be of help in understanding this phenomenon. They argue that Marx's reliance on dialectics and methodological collectivism as opposed to methodological individualism led him astray in arguing that exploitation of labour is the source of profit.

Both the Sraffians and the Analytical Marxists in criticising Marx's analysis of surplus value and the method on which he bases his analysis and in their efforts to do away with the contradictions end up in defining law of value and surplus value out of existence as surplus is seen to emerge from every **pore** of capital. On this basis they argue that each factor earns its own reward.

Contrary to this Marx with the help of dialectics captures the contradictory nature of the capitalist mode of production where two antagonistic classes - capitalists and labourers - meet each other under capitalist relations of production. It is these relations of production that lay the basis for exploitation of labour, the source of profit. The critics who treat production as a mere technical process set aside **this** social aspect of production. Under this dispensation exploitation of labour instead of being a mere assumption necessarily emerges from the unequal capitalist relations of production. Marx chose labour-power as the peculiar commodity, not because during his time labour formed the predominant part of inputs, but because of its relation to capital. The nature of exchange between capital and labour is different from the exchange of other commodities, and it is this exchange between capital and labour that explains the source of profit.

The critics come to the conclusion that labour-power is in no way unique and any other commodity that enters the production process is capable of producing surplus on the basis of formalisation where labour-power is reduced to a bundle of wage goods and is treated like any other commodity, devoid of its unique place in the production process. Because of this treatment labour is indistinguishable from other commodities used as means of production. Wages which denote distribution relations are reduced to a technical datum. As a result of this, in the topsy-turvy world of the critics, as a manifestation of fetishism, distribution relations are attributed to inanimate things. As an outcome of this treatment, the distinction between variable capital and constant capital is removed there by paving the path to obliterate the secret of the source of profit.

The Fundamental Marxiam Theorm that exploitation is the necessary and sufficient condition for the existence of profit is popularised by Morishima. But this result as he explains is limited to the conditions where fixed capital and joint-products are not included. This problem arises as the above theorem emerges from his conception of productivity and expandability of capital rather than from the conception of capital as a social relation. In the process of this analysis Morishima also gives up Marx's theory of value. Because of this Morishima fails to demystify the source of profit.

Marx's endeavour was to unravel the mysteries that surround the emergence of profit. In this effort examination of alienation of labourer from the conditions of production and the consequent removal of fetishistic shroud that concealed the essence of capitalist production process played an important part. The critics- the Sraffians, the Analytica] Marxists and Morishima- who examined Marx's analysis of source of profit fail to take it into cognisance and wrongly proclaim the failure of Marx.

In the examination of the rate of profit also the dialectical method plays a crucial role. This concerns the formulation of the rate of profit on the basis of the law of value, in other words the relation between the law of value and the rate of profit. Because of capitalist production, distribution and exchange, the law of value and rate of profit appear to stand in contradiction. The classical economists at the very sight of apparent unviability of the law of value in the presence of the rate of profit and the corresponding prices of production tend to give up the law of value. Their inability to comprehend the contradictory but necessary relation between the law of value and the rate of profit sounded the disintegration of the classical economics. It was established that labour was the sole source and substance of value, and the value of a commodity was determined by the amount of labour needed for its production. The equalisation of the rate of profit leads to the formation of prices which deviate from values. Because of this it appears that the rate of profit contradicts the law of value. That is to say, the application of the law of value to the rate of profit meets with a contradiction. Marx with the help of dialectics explains the nature as well as the necessity of this contradiction.

Classical economists' - Smith's and Ricardo's - problems arose as they failed to recognise the nature of the contradiction between the law of value and the rate of profit. Ricardo, instead of examining how far the rate of profit is consistent with the law of value, attempts to derive the rate of profit directly from the law of value without any intermediate linkages and as a result was entangled in a web of contradictions. In Ricardo's theory, the law of the average rate of profit which established the dependence of the rate of profit on the guantity of capital as a whole and the law of value which established that only living labour produced new value stood in a relation of mutually exclusive contradiction. Similarly Smith, though he grasped that with the accumulation of capital and the appearance of property in land and **with** the emergence of the relation between capital and labour, the law of value appeared to be suspended, failed to comprehend the significance of the contradiction between the law of value and the rate of profit and gave up labour theory of value in favour of the adding up theory of value.

The law of value and its empirical form of manifestation as the rate of profit, though address the same issue: profits, stand in mutually exclusive contradiction. As soon as one tries to treat the rate of profit theoretically, i.e., understand it through the law of value it suddenly appears to be an absurd contradiction. If the law of value is universal, profit is impossible in principle.

The formal method justified a general law, in the present case of the law of value, only when it was demonstrated as an immediately general empirical rule under which all. facts whatsoever were subsumed without contradiction. The formal method holds out two solutions as a way out of this contradiction: one is to change the meaning of value in such a way that the concept of profit can be included in it without any contradiction; another is to change the concept of profit. Those who attempted to remove the contradictions within the classical analysis use one of the two or both of the methods. These attempts to set aside contradiction marked the beginning of the decline of the classical political economy.

The contradictions that characterised classical political economy cannot be solved by the formal method. Karl

Marx, with the help of dialectics, attempts to examine these contradictions. Marx, instead of attempting to save either the law of value or the rate of profit through arbitrary formulations, recognises that the contradiction between the law of value and the rate of profit arises out of the nature of the capitalist economy. He also recognises that whenever attempts were made to keep aside these contradictions and relate them directly, it led to unresolvable contradictions. The contradictions that surfaced in the classical economics do not disappear in Marx's analysis. Instead these contradictions are represented as a necessary reflection of the contradictory nature of concrete economic reality. Marx does not treat the contradiction between the general law of value and its concrete manifestation, the rate of profit as a shortcoming in thinking or inexactitude in the concepts and definitions. He explained it as reflecting the nature of the object itself. Marx develops a whole chain of mediating links between the abstract and the concrete expressions of the phenomena. These connecting links instead of doing away with these contradictions as something subjective, prove them as being a necessary character of the object. These contradictions surface with labour-power itself becoming a commodity, with the emergence of exchange between capital and wage labour. Marx's contribution lies in highlighting the uniqueness of labour-power under capitalist relations of production.

The issue of inconsistencey in Marx's analysis of the rate of profit and the prices of production is again brought to the fore by the Sraffians. They argue that Marx's formula for the rate of profit does not conform to the correct rate of profit. In Marx's formula surplus value and capital are valued in labour embodied terms. As prices are not proportional to values, the rate of profit calculated in value terms will not be equal to the one calculated in price terms. As Marx's rate of profit contradicts the 'correct' price rate of profit, it is pointed out that Marx's analysis in this respect is internally inconsistent. This criticism is based on two arguments, that only the simultaneous equation method can explain the correct rate of profit, and that physical conditions of production and the real wage rate are enough to calculate correct prices of production and the rate of profit without any reference to labour values. This is also meant to say that inconsistencies in Marx's analysis crop up because of the inadequecies in his analytical system. In their opinion only Sraffians' work provides a secure logical base.

This analysis of the Sraffians is an attempt to dispense with the contradiction between the law of value and the rate of profit. They repudiate the contention that as an outcome of the capitalist process of production and accumulation the law of value and the rate of profit contradict each other. Instead they attribute the contradiction to shortcomings in Marxs's analysis. Consequently they attempt to remove this contradiction and correct Marx. In this their aim is to see that the universal law is consistent with its empirical manifestation. This they do by altering the conception of the categories of value and profit. As a culmination of this exercise Marx's theory of value is discarded and profit is seen to emerge from every pore of capital as wage labour is reduced to a bundle of goods and is not distinguished from the elements of constant capital. The distinction between variable capital and constant capital is removed. In the process of removing contradiction from Marx's analysis they obscure the specificity of capitalist mode of production.

The internal inconsistency that the Sraffians have pointed out in Marx's analysis highlight the methodological divide that seperates the two analyses. The Sraffians may be successful in developing a formally consistent model, but in the process they move far away from reality, reality beset with contradictions. The simultaneous equation system that they employ conceals real process of valorisation characteristic of the capitalist economy. The conditions of production that they hold out as the only correct basis for determining rate of profit stands only for the possibility of existence of rate of profit. In order to turn it into reality capitalist relations of production and the corresponding valorisation process is to be ushered in. The issues of redundancy and inconsistency of Marx's rate of profit arise as the Sraffians substitute technical relations for social relations in the capitalist production process.

The Analytical Marxists also refuse to accept that the contradiction between the law of value and the rate of profit is a result of the capitalist production process and attribute the same to inadequacies in Marx's analysis. They follow a formalisation similar to that of the Sraffians in arriving at the 'correct' and non-contradictory rate of profit. They also discard Marx's labour theory of value as being inconsistent. Accordingly they treat values and prices as separate elements. They understand by Marx's analysis of the relation between values and prices as meaning that values can be determined independent of prices, but prices cannot be determined independent of values. By contradicting this they go on to explain that rate of profit and prices can be determined independent of value magnitudes. Prices and values are not two different elements. Price is the form that value takes in the sphere of circulation. The relation between price and value magnitudes can be described as one of dialectical relation between appearance and its essence. By discarding value magnitudes and sticking to prices only, the Analytical Marxists take appearance as real.

This becomes further obvious as the Analytical Marxists treat the rate of profit as being determined by individuals' behaviour rather than by the exploitation of labour and struggle among the capitalists to partake in these spoils. Following methodological individualism that macro phenomena could be explained only by individuals motives, behaviour and actions, the Analytical Marxists contend that the rate of profit should be explained as emenating from the behaviour of autonomous individuals in the market. It is the sphere of circulation, for them, that holds out the solution. Circulation is also the sphere where fetishism makes its strong appearance.

The Analytical Marxists also argue, again firmly based on methodological individualism and neo-classical economic analysis, that Marx neglected the role of demand in the determination of prices and the rate of profit. Contrary to this Marx also took into account the role of demand. At this point one has to note the different interpretations that the Analytical Marxists and Marx gave to demand. According to the Analytical Marxists demand is determined by isolated individuals' preferences and subjective utilities. In Marx's analysis consumption and demand is influenced by historical and social conditions under which production is carried on. Demand is determined by the distribution of social income among different classes of people. The Analytical Marxists' formulation follow from the shift of their focus from classes to individuals which is opposed to the fundamental Marxian understanding of the social development. The individual, to a great extent, is formed by the social and historical conditions under which he lives. To separate the individual from his historical and social conditions is to resort to ahistorical and asocial analysis. This is what the Analytical Marxists do in their examination of Marx's analysis of rate of profit.

When compared to the other two streams of analysis, Morishima is more sympathetic to Marx's contributions. Unlike the others he does not advocate wholesale overthrow of Marx's value analysis and the rate of profit based on it. He thinks that there are many elements in Marx's analysis which can be grafted on to the stock of modern economic analysis. Regarding the transformation of values into prices and the derivation of the rate of profit Morishima is of the opinion that Marx 'almost' got the answer, the only thing left to be done is to clarify it.

But the clarification that Morishima adduces is not in keeping with the spirit of Marx's analysis. While Marx attempts to locate the basis of the contradiction between the law of value and the rate of profit in the nature of the capitalist mode of production, Morishima tries to bring out a harmonious result with the help of his mathematical treatment. Following this he goes in search of concepts and definitions in order to relate the law of value and the rate of profit directly. His solution to the problem is to find out the special cases where a first approximation gives the true prices precisely. These special cases are, apart from zero exploitation and equal organic compositions of capital, linear dependence of input matrix and von Neumann balanced equilibrium growth path. Even these special cases fail to give clearcut answers. This leads Morishima not to the recognition of failure of the formal method, but to the rejection of Marx's value analysis.

Though the three groups of critics start from different points ultimately they converge at the same point, that of rejecting Marx's analysis of the dialectical relation between the law of value and the rate of profit. The critics, operating within the framework of the formal method, consider Marx's analysis of rate of profit as being riddled with confusions and set out to remove them. In doing so they do not examine the way the essence takes a particular form but equate essence with its form. In their attempt to do away with the contradictions they neglect the influence of accumulation of capital, appropriation of land and emergence of labour-power as a commodity. It is these elements of the capitalist production process that engender the contradictions. Marx's contribution lies in highlighting these contradictions while examining the formation of the rate of profit. The critics by concealing these contradictions further strengthen the grip of fetishised forms of thinking on economic analysis.

The tendency of rate of profit to fall is described as an expression peculiar to the capitalist mode of production. It is a logical outcome of contradictory tendencies that characterise the capitalist economy. The tendency of rate of profit to fall is bound up with the expansion of accumulation of capital. This tendency as analysed by Marx is not an outcome of the declining productive forces, but on the contrary is a result of the growth of productive forces, of social productivity of labour. The capitalist accumulation process is characterised by contradictory tendencies: while on the one hand because of the development of productive forces accumulation of capital expands, on the other hand this also results in a tendency for the rate of profit to fall. The factors that beckon a fall in the rate of profit also lead to the acceleration of accumulation. The tendency of rate of profit to fall signifies a relative decline in profit but not an absolute one. As Marx writes the same laws produce for the social capital a growing absolute mass of profit, and a falling rate of profit.

The capitalist mode of production unshackles the forces of production that were previously constrained by feudal relations. This unleashed forces of production lead to development of social productiveness of labour. A given unit of labour produces more commodities. In the process it sets in motion larger amounts of fixed capital and consumes more raw materials. In other words a given unit of variable capital sets in motion larger constant capital. This is a manifestation as well as a result of the labour process lifted to an enlarged scale. While developed productiveness facilitates accumulation, expanded accumulation further broadens the scope for the development of the productive forces. As a result of the developed productiveness of labour, capital proportioned for variable capital decreases, where as the proportion meant for constant capital increases. Because of the expanded accumulation of capital though the absolute amount of capital spent both on the variable capital and the constant capital increases, relatively the share of variable capital comes down. That is to say the organic composition of capital increases. The concentration and centralisation process inherent to the capitalist accumulation process also adds impetus to this change.

As the proportion of variable capital, living labour employed, as a ratio of constant capital as well as total capital is reduced, the surplus value poduced per unit of capital comes down resulting in a fall in the rate of profit. This is the case even when rate of surplus value increases in the wake of growing social productiveness of labour. The rate of profit falls not because the number of labourers employed declines, but because the mass of materialised labour set in motion by given living labour increases. In this analysis also the uniqueness of labour-power and the distinction between variable capital and constant capital plays a crucial role. As pointed out by Marx failure of the classical economists in understanding the phenomenon of falling profits can be attributed to their inability to capture the distinction between variable capital and constant capital. This shortcoming is also reflected in the writings of the present critics.

Though the expression that the tendency of rate of profit to fall is a manifestation of the developing productive forces appears as a contradiction, it in fact highlights the real nature of capitalist economy. It brings to light the contradictions that underlie the process of production under the capitalist mode of production and the barriers to it.

This analysis has come under the attack of the critics who argue that the development of productive forces can only lead to a rise in the rate of profit. This argument is based on the conception of capitalists' rationality, perfect competition and equilibrium. According to them rational capitalist will not take any decision that will lower the rate of profit. When capitalists introduce technical change it can only lead to increments in the rate of profit. This rational behaviour of capitalists is an integral part of their analysis of perfect competition and equilibrium conditions. Contrary to this disequilibrium is the ever present property of the capitalist economy. It is characterised not by perfect competition but by concentration and centralisation. This concentration and centralisation of capital accumulation is the cause as well as the outcome of the falling rate of profit.

The critics' objection to Marx's analysis of the tendency also arises from their opposition to the place of uniqueness of labour-power in the analysis. As they are of the opinion that not only labour-power but also any other commodity is capable of producing surplus and consequent sidelining of the distinction between variable capital and constant capital, the basis of the whole argument appears to them to be untenable. As they neglect the social and historical nature of the capitalist process of production, the fall in the rate of profit can only materialise because of physical or natural factors like niggardliness of nature.

The critics rely on static models even when they examine the tendency of rate of profit to fall which is essentially a dynamic issue. This is so because the formal method that they follow cannot take them beyond this point. When they examine the phenomenon over a period of time it will be repetition of the same in quantity as well as intensity. The critics failed to correctly address the agenda put forward by Marx with the help of his dialectical method. With the help of this method Marx analyses the inner and necessary connections in the capitalist economy, the impetus for its growth, the barriers that constrain this growth and the way these barriers are surpassed. In this the contradictions that Marx highlights do not stand for impediments, but initiate change and development. The critics being bogged down in the formal analysis miss this crucial aspect of capitalist accumulation process.

The attempts by the critics to recast Marxian economics in the light of recent developments in economic theory and give it 'citizenship in contemporary economic theory' in fact result in weakening Marx's analysis of laws of motion of capitalist economy. This is so because the critics' analyses are detached from moorings of Marx's method of dialectics. The dialectical method directs us to the contradictions that are sources of motion of the capitalist economy. The critics who eschew contradictions as shortcomings in analysis, fail to grasp the motive forces of change. This is reflected in their analyses of the source of profit, the formation of rate of profit and the tendency of rate of profit to fall.

With the accumulation of capital and the appearance of property in land, with the conditions of labour, dead labour, assuming independent existence over and against labourers, labour-power itself becomes a commodity. This transformation of labour-power into a commodity under the capitalist relations of production helps us in accounting for these contradictions. This analysis of the uniqueness of labour-power helps Marx in explaining the contradictions in the origin of profits, in the formation of rate of profit and in the tendency of rate of profit to fall even in the presence of developing productive forces. The critics who perceive these real contradictions as contradictions (read as shortcomings or confusions) in Marx's analysis attempt to overcome them by redefining the categories. The end result is very little of Marx is left in 'advanced' Marxian economics.

It is Marx's method of dialectics that makes all the difference to the present debate. Marx makes an all out effort to unearth the contradictions that lend colour to the phenomena on the surface and examines how these contradictions are resolved and its outcome. This is apparent from the way Marx explains the emergence of surplus value in the capitalist economy, the way prices and values are related and the rate of profit is formed, and the way the economy as a whole moves in response to the process of capital accumulation.

The critics of Marx, who intend to base Marxian economics on non-Marxian method invariably come to the conclusion that Marx's analysis of various issues mentioned above is wrong and need to be revamped. The supporters of Marx's analysis who are against this revamping do not make a complete break from critics' non-Marxian method and attempt to answer them within the framework of the critics.

It can be seen that supporters like Anwar Shaikh (1977, 1981, 1984) while exposing the 'poverty of algebra' of the Sraffians and explaining the essential place of labour, do not address the way Marx brings into picture the contradictions between law of value and surplus value and its basis in the capitalist economy. In the case of the formation of rate of profit and the transformation of values into prices though they attempt to stand against opponents' attacks on Marx, they end up evolving formalisations similar to that of the critics. The widespread influence that Morishima commands in this respect can be treated as an indication of this trend. The supporters need, not only to reiterate Marx's arguments but also, to reinvigorate Marx's method. The present work makes an attempt to highlight the centrality of the Marx's method in analysing various issues. The need is to carry this effort forward.

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