Bulletin of the Conference of Socialist Economists
Conference Issue.

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FORWARD.

This issue of the Bulletin is given over to the publication of papers for the December Conference. The next issue will be published at the end of March. This would be facilitated if we could receive some material to go into it. We have set the following copy dates: untyped manuscripts to be submitted by February 24th, typed manuscripts (suitable for xeroxing, dimensions do not matter) by March 17th 1973. We hope by this time a more efficient structure of production will have emerged from Conference discussions.
The Marxian Theory of Crisis, Capital and the State (1)

'The abandoning of the materialist basis leads inexorably from revolutionary socialism to reformism' (Henryk Grossmann). (2)

1. Introduction

Marxists have always defended themselves with ardour against the attack that they hold to a 'crude' determinist theory of history. Unfortunately, their anxious protestations have too frequently led to a rejection of the 'materialist' basis of Marxian theory itself. That capitalism, admittedly with the interference of two world wars, has shown its capacity to survive and expand, has further made it all the more difficult to accept a theory that shows the historically limited character of this 'mode of production'. Discussion has, therefore, since the 1930's involved stressing particular aspects of Marxian theory to the detriment of the 'total' conception of Marx's work.

Amongst Western philosophers and sociologists attempts to reinterpret Marx concerned the emphasis on the 'humanistic' writings of the early Marx against the 'scientism' of the later writings. The Frankfurt School of philosophy and sociology represents what is probably the earliest version of this 'humanism'. The idea of 'Critical Theory' elaborates the distortions of human relations under capitalism and contrasts them with the 'potential' of a more rationally organised society. The 'possible' or 'potential' is counterposed to the 'actual' and the concept of 'enlightenment' is supposed to link the two. While for Marx the historical 'necessity' of the new society is shown in the contradictory development of the old society, for the critical theorists there is no such 'necessity'. This development has its counterpart in 'Marxist' political economy. Paul Baran's use of potential

(1) This article is a development and clarification of the arguments contained in an earlier unpublished paper 'State Expenditure and the Marxian Theory of Crisis' written jointly (in August 1971) with Rudi Schmiade. With his permission I have directly used some of the material in that paper. It has been most helpful in reformulating and developing my arguments, to discuss with Robin Murray, Stephen Faskor and other members of the C.S.E. in Brighton. Thanks are also due to Roy Teare for his comments on the earlier paper and, in particular, for allowing me to use some of the material from our joint work on value and price in the Marxian system which we hope to publish at a later date.

(2) Henryk Grossmann: Das Abgrundung - und Zusammenbruchgesetz des Kapitalistischen Systems, Archiv sozialisticher Literatur 3, Verlag Haus Kritik, Frankfurt p.74
and actual economic surplus in relation to underdeveloped countries and the "wastage" of the alleged abundant surplus as described in Baran and Sweezy's *Monopoly Capital* employ similar "critical" concepts.

What all the above positions have in common is a rejection of the "general laws of motion of capitalist society", as developed by Marx in *Capital*, for 'late' capitalism. The contradictions of capitalist production for these theorists, where they have not been completely contained, do not lie in the production process itself but must be located in the ideological, technological and political spheres.

Many of the academic Marxist economists during this period have been more concerned to show how much of Keynes was or was not anticipated by Marx than to examine the limits to and contradictory nature of state intervention in capitalist economies. The period of 'stability' since the second world war and the consequent 'ideological' hold of 'Keynesianism' have certainly contributed to this state of affairs, but, with increasing instability and growing unemployment in Western economies in the recent period new explanations are being sought. The failure of Social Democratic governments to substantially alter the condition of the working-class, and in Britain the complete subservience of the Labour party as government party to the interests of international capital, have given added impetus to these tendencies since the mid 1960's.

If the capitalist mode of production can ensure, with or without government intervention, continual expansion and full employment, then the most important objective argument in support of revolutionary socialist theory breaks down. It will be the aim of this article to show that the 'value analysis' of capitalism as developed by Marx, must still be the starting point for an analysis of contemporary capitalism. On the basis of such an analysis it will be shown that state intervention in the economy, far from resolving the central contradictions of capitalist production has only given them new expression. Stagnation and inflation as two of the central features of advanced capitalist economies today indicate the limits

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(5) One of the most important exceptions has been the work of Paul Mattick especially his book *Marx and Keynes*, *The Limits of the Mixed Economy*. Merlin Press 1971. A great deal of the analysis in this paper owes much to Mattick or more generally to the same tradition of political economy that has clearly influenced Mattick. Roman Rosdolsky and Henryk Grossmann are of particular importance but unfortunately nothing of their work, as yet, has been translated into English.
and crisis-ridden nature of capitalist production.

The article will be in two main parts. The first section will contain an analysis of Marx's theory of crisis. It will attempt to answer various criticisms of that theory and examine, in particular, two false versions of the theory: the underconsumptionist and disproportionality theory of crisis. The second section will begin an analysis of the role of state intervention in the economy and will attempt to indicate the limitations of intervention by the capitalist state implied by the earlier analysis of the theory of crisis.

2. Marxist Political Economy

(a) Capital Production

What distinguishes Marx from his Classical predecessors is that he never loses sight of the fact that the 'value-producing' process, central to capitalist production, is only an historical form of the material production and reproduction process of society. The labouring process becomes a 'value-producing' process and the social relations are transformed into economic categories under capital production. Capitalist production is oriented not towards consumption needs, that is the production of use-values, but towards production for profit, that is the production of exchange-values. It is the dual nature of a commodity under capitalist production conditions, that is as a use-value and exchange-value, that constitute the most general contradiction of the capitalist system. This may be put in another form: while the labour process is only limited by the natural resources available, by the historical stage of development of the social productivity of labour and the mass of labour in society, the labour process as a 'value-producing' process has much narrower limits. Under capitalist production natural resources are only utilised, the social productivity of labour only developed, labour is only employed if it serves the self-expansion of capital i.e., the reproduction of the existing capital values and the creation of additional value, surplus-value. Capitalist production therefore, is the production of exchange-values through the production of commodities, its aim being surplus-value as additional exchange-value.

Accumulation is the continuous process of reproduction and self-expansion of capital (Verwertungsprozess des Kapitals), it is the reproduction of capital on a progressively increasing scale. (6) Necessarily, accumulation is also the reproduction

of the capitalist social relation on a progressive scale, 'more capitalists or larger capitalists at this pole, more wage workers at that'. So long as capitalist relations of production exist, so long as one class owns the means of production as capital, and another has to sell its labour-power to live, so long will the aim and end of production be the accumulation of capital.

Before an analysis of the accumulation process itself is possible it is necessary to say something about Marx's methodology and, in particular, about the concepts 'capital in general' (Kapital im allgemeinen) and 'many capitals' (vielen Kapitalien) or capital in its 'real' form of competition.

(b) 'Capital in general' and 'many capitals'

It is the particular form that social relations take under capitalist production, their fetishistic form, which makes it all the more necessary for political economy to start from simple (abstract) conceptions and move by a process of increasing concretisation to grasp the concrete reality. The method of advancing from the abstract to the concrete is but the way of thinking by which the concrete is grasped and reproduced in our mind as concrete. The failing of what Marx called 'vulgar economy' is that it remains in the 'estranged outward appearances of economic relations'. In so doing it takes on an apologetic character for the given social relations and by treating them as 'eternal' fails to grasp their contradictory character. 'But all science would be superfluous if the outward appearance and essence of things directly coincided', and it is precisely this point that indicates the indispensability of the value-analysis for Marx's total work.

Marx begins this analysis in Volume I of Capital by examining the exchange of commodities. From this he deduces that Value or expenditure of abstract human labour lies at the basis of commodity-exchange, independent of the use-values of the commodities. He then moves on to the only form Value can have under commodity production, that is exchange-value. After deducing the money form of value he goes on

(7) Capital Vol. I p. 613-4 also p. 578
(9) ibid. p. 293-4
(10) Capital Vol. III (Moscow Ed. 1962) p. 797
to analyse the capital form of value. It was the examination of capital, of value that generates surplus-value (value in process\(^{(1)}\)), which presupposes a definite historical relationship, the wage-labour relationship (labour power as a commodity), that was to take up the major proportion of Marx's effort and work.

In order to develop the concept of capital it was first of all necessary to abstract from 'many capitals' or the action of capitals on one another through competition. The latter would be analysed after the consideration of what they (many capitals) have in common, as capital.\(^{(12)}\) In the Grundrisse the point is made very clear:

'Capital, in so far as we are considering it here... is capital in general... Value, money, capital, etc. prices etc. are presupposed, just as is labour etc. However we are concerned neither with a special form of capital nor with individual capital as differentiated from other individual capitals etc. We are remaining with its process of generation and growth (Entstehungsprozess). This dialectical process of generation and growth is nothing but the ideal expression of the real movement of capital. The later relationships are to be regarded as a development from this 'central core' (Keim)...\(^{(13)}\)

It follows that the later form of capital is contained in embryonic form (Keimform) within the general concept of capital. This means not only the 'civilising' dynamic tendencies of capital but also the latent contradictions which drive capital beyond its own limits.\(^{(14)}\)

Marx refers to 'capital in general' sometimes as 'the capital of the whole society,\(^{(15)}\) or nation, or as the general economic basis of one class as opposed to another class.\(^{(16)}\) 'Capital in general' is not a mere abstraction or an arbitrary abstraction, but an abstraction that must be understood as the differentia specifica.

\(^{(11)}\) Capital Vol. 1 p. 154  
\(^{(13)}\) Grundrisse op. cit. p. 217 (my translation)  
\(^{(14)}\) ibid p.317 and p. 237 See also Roman Rosdolsky op. cit. p.70  
\(^{(15)}\) Grundrisse op. cit. p.252  
\(^{(16)}\) ibid p.735
of capital in distinction to all other forms of wealth. (17) If we are to comprehend the basic presupposition of the capital relation - the relation of capital and labour and the role of surplus-value as the driving force of capitalist production - then we must begin our analysis with 'capital in general' undisturbed by a consideration of 'many-capitalists' or the actions of capitals on one another.

A scientific analysis of competition is not possible before we have a conception of 'capital in general', that is, of the 'inner nature of capital'. (18) Competition is the 'essential locomotive of bourgeois economy' which nevertheless does not create or establish its laws but merely allows them to be realised ('allows them to be exhibited but does not produce them') (19) Capitalist production exists in its most 'adequate' form in so far as free competition develops. Nevertheless, as soon as capital feels itself threatened it will seek refuge in other forms, which appear to perfect its rule as capital 'through curbs on free competition'. (20) Marx offers here a clear context for understanding capitalism in its 'latest' stage. It is precisely the nature of capital itself and the preservation of its rule as capital that is central for an understanding of capitalism in its 'monopoly' stage. It has not ceased to be capital by virtue of the 'curbs on free competition'. On the contrary it is precisely the 'rule of capital' that makes the 'curbs on free competition' necessary.

It follows, therefore, that the analysis of 'capital in general' is still the starting point of any analysis of contemporary capitalism. The value-analysis of volume I of Capital still retains its validity, and although the 'law of value' is 'modified', it nevertheless is the basis for any serious consideration of modern capitalism. The 'modifications' and this includes interventions by the capitalist State, are within limits governed by the preservation of the 'rule of capital' itself and so modern capitalism, like the capitalism of Marx's day, is subject to value-analysis. Baran and Sweezy are, therefore, wrong when they assert:

'the Marxist analysis of capitalism still rests in the final analysis on the assumption of a competitive economy' (21)

(17) ibid. p.353
(18) Capital Vol. 1 p. 316
(19) Grundrisse op. cit. p.450
(20) ibid p.544-5
It rests on an analysis of 'capital in general', undisturbed by considerations of competition, that has as its basis the value relations examined in Volume I of Capital. As long as capital and therefore capitalist production relations exist whether the market structure is competitive or monopolistic, the value analysis is central. (22)

Volume I and II of Capital are primarily concerned with an examination of 'capital in general' and the special forms of the existence of 'capital in general' as fixed and circulating capital. That this is often not understood has lead to all kinds of confusion when considering Marx's theory of crisis and its relevance for an examination of contemporary society. It is not surprising that so many critics of Marx have talked of a contradiction between Volume I and III of Capital (eg. Bawerk); and others have confused 'capital in general' with capital in 'reality', 'many capitals' (eg. Rosa Luxemburg). It is only in Volume III of Capital that Marx begins to 'locate and describe the concrete forms which grow out of the movement of capital as a whole' as they approach step by step the form which they assume on the surface of society, in the action of different capitals upon one another, in competition, and in the ordinary consciousness of the agents of production themselves'.(23)

(c) **Productive and Unproductive Labour**

This distinction, so central to Marx's theory of accumulation, is one often misunderstood by both Marxists and Marx's critics. No discussion of the role of State intervention is possible until this distinction is clarified.

A *productive* labourer is one who works for the self-expansion of capital and produces surplus-value for the capitalist through the production of commodities. (24) It is labour which is directly exchanged with capital for the purpose of accumulating capital. (25) The use-value of the commodity, in which the labour of a productive labourer is embodied, is in no way relevant to this definition; the commodity 'may be of the most futile kind'. (26) The definition of productive labour is the expression of a definite social relation of production, that is, of capitalist production. Therefore, any 'moralistic' definition of productive labour, ie. useful to society, has nothing

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(22) Paul Hattick *Marxism and "Loneley Capital"* in Progressive Labour Vol. 6 No. 1 July-August 1967

(23) *Capital* Volume III p.25

(24) *Capital* Volume I p. 509


(26) ibid p.154
in common with Marx's definition and merely confuses the issue by abstracting from the particular model of production and type of society. The aim of capital is the accumulation of wealth, the self-expansion of value, its increase; that is to say the maintenance of the old-value and the creation of surplus-value. And it achieves this specific product of the capitalist production process only in exchange with labour, which for that reason is called productive labour." (27)

Unproductive labour is labour that is not exchanged with capital but directly with revenue, that is with wages or profits. (28) This means that services paid out of the wage of workers or the income of capitalists are unproductive from the capitalist standpoint. (29) They constitute a reduction of the surplus-value that is available for re-investment as capital. The case of services, e.g. education, which actually maintain or raise the value of labour-power or alter the skill (complexity of labour) of the labourer is slightly more complicated. Marx talks of such services as yielding in return 'a vendible commodity etc., namely labour-power itself, into whose costs of production these services enter' (29). But the utility of the service alters nothing as far as the economic relation is concerned, as revenue is exchanged against labour. The result of the service, by its very nature, cannot even be guaranteed by those rendering the service. (30) The case of State expenditure on education exactly fits this category. In so far as education increases the total value of labour-power (of all labourers) and has little or no effect on the

(27) ibid. p.387-8
(28) ibid. p.155
(29) ibid. p.163
(30) ibid. p.395. If the schoolmaster worked for a capitalist proprietor and education was a necessary ingredient in the reproduction of labour-power; to that extent, the schoolmaster could be regarded as productive. This presumably covers the case given by Marx in Capital, Vol. I. p.399. Sometimes Marx seems to imply that labour is productive if it produces surplus-value for the capitalist only and does not add to total social capital. (Theories of Surplus-Value, Vol. 1. p.393) This might have been what he had in mind in his productive schoolmaster example if we refer to his remarks (quoting Smith) about how little 'education' enters into the cost of production of the mass of working men. (Theories of Surplus-Value, Vol. I. p.163). We reject such a definition and hold clearly to that more consistent with Marx's general analysis that labour is only productive so long as it augments capital. (Grundrisse p.212-3).
value-creating potential of the labourer (skill etc.) besides leading to a
fall in the average rate of profit, it alters the redistribution of the social
product in favour of the labourers and at the expense of surplus-value. To the
extent that it increases the skill etc. of the worker and/or productivity in the wage
goods industries the latter effects are compensated. (31)

Here circulation costs from the standpoint of capitalist production are
unproductive. Although wage-labour is performed and the capitalist investing in this
sphere receives a profit no addition to surplus-value, to total social capital, is made.
Such costs, necessary for the realisation of profits reduce the overall rate of
profit. The employment of commercial workers, office staff etc. increase the expenses
of the industrial capitalist and therefore the mass of capital to be advanced without
directly increasing surplus value. If the extra costs are Δc, then the rate of
profit will be reduced from s/c to s/c + Δc. (32) The labourer who works in the
commercial sphere still performs unpaid labour and his cost to the capitalist is the
value of his labour-power.

"He creates no direct surplus value, but adds to the capitalists'
income by helping to reduce the cost of realising surplus-value,
inasmuch as he performs partly, unpaid labour." (33)

These purely commercial costs are to be separated from the costs of transport
shipping, storage etc. These are regarded as part of industrial production. A change
in the object of labour, in the commodity takes place. In the case of transport 'its
spatial existence is altered, and along with this goes a change in its use-value,
since the location of this use-value is changed'. (34) Such labour is regarded as
productive labour.

It follows from all this that from the standpoint of capitalism as a whole
'variable capital' represents only the wages of productive labourers not of the total
labour force. Further, surplus-value is not equal to the total surplus-product
but to the surplus-product of productive labourers. So that the share of wages and
profits in national income does not tell us very much about the rate of exploitation.
It is quite reasonable to assume that, if the unproductive (including the non-
profitable state) sector in growing at a faster rate than the productive sector, total
wages as a share of national income can grow and the rate of exploitation can still
rise. This is because a part of net income inputed to wages is in reality a part of

(31) See article by Elmar Altvater and Freerk Huiskes in Socialistische Politiek, Nr. 8
September 1970, especially pages 82-91. The whole issue of the journal is
given over to a discussion of productive and unproductive labour.

(32) Capital Volume III p.293-4

(33) ibid p.294

(34) Theories of Surplus-Value Vol. 1 p.399 See also Capital Vol. III p.293
surplus-value produced by productive labourers. This latter point indicates one of the problems in trying to find statistical counterparts for the Marxian categories. (35)

To conclude this section we have the following important results. Variable capital represents only the wages of productive workers. Surplus-value is the total profit of the productive sector. Constant capital is the part of the means of production employed in the productive sector. The rate of exploitation and organic composition of capital relate to the variables as defined above. The unproductive part of total production becomes relevant when we discuss the rate of profit. Here it will be included as an extra-cost. More capital is advanced in order to finance this unproductive sector and so the rate of profit will be correspondingly lower. (36)

Having clarified the meaning and role of some of the central categories of Marxist political economy we now turn to the general theory of accumulation and crisis.

(35) This is one weakness in Andrew Glyn and Bob Sutcliffe's book British Capitalism, Workers and the Profits Source. Penguin books 1972. On page 15, they say 'The share of profits is the total amount of profits expressed as a proportion of the national income'. In another place (p.32) they speak of the share of wages as 'total wages in industry expressed as a proportion of the value of industrial output'. But continue 'Sometimes the share of wages in the national income is referred to; it is the total of all wages expressed as a proportion of national income. It is the counterpart of the share of profits'. They seem to show little awareness of the central problem of productive and unproductive labour in choosing their data.

(36) For a similar formulation of this result see Rudi Schmiede Zentrale Probleme der Marxsehen Akkumulations- und Krisentheorie. Soziologische Diplomarbeit, Frankfurt/Main 1972. p.48. It should be remarked that to clearly separate productive from unproductive labour empirically is not really a possibility. The value of the conceptual separation will be clear in the later analysis.
3. 

The General Law of Capital Accumulation and the Theory of Crisis

(a) The Ripe Organic Composition of Capital

Capitalist production has as its aim and driving force the production of surplus-value as additional exchange-value. Surplus-value is the difference between exchange-value of labour-power (representing that part of the working day in which the worker produces the equivalent of his own means of subsistence, necessary labour-time) and its productive capacity (representing the total working day). So that an increase in the productivity of labour, viewed capitalistically, makes no sense unless it increases surplus-value i.e., decreases the value of labour-power or the time necessary to sustain and reproduce the workers. In other words, the productivity of labour is constrained by the need to produce value and surplus-value, in bound to the reproduction and self-expansion of capital.

The class struggle cannot prevent the fall in the value of labour-power (as productivity increases) (37) but it can prevent, however, the occurrence that the value falls in the same relation as the productivity increases. That is, ensure a rise in real wages takes place with increases in productivity at the same time as an increase in surplus-value. (38)

While, in exceptional cases, extended reproduction on the same technological scale is possible, in general, accumulation 'revolutionises out and out the technical processes of labour'. (39) Since continuous accumulation under capitalist production conditions soon comes across the limits of the existing working population, that is since the normal working day has its physical and social limits, (40) a transition from the production of absolute surplus-value (extension of the working day) to that of relative surplus-value becomes possible.

This important point, overlooked by those who use a Ricardian type model, i.e., see wages inversely proportional to profits, is merely another way of stressing that 'the rate of accumulation is the independent and the dependent, variable; the rate of wages the dependent, not the independent, variable'.

(Capital Vol. 1 p.620)

Marx again makes this point in relation to the rise and fall of the rate of profit in Theories of Surplus-Value Volume III p.312.

'The rise and fall in the rate of profit insofar as it is determined by the rise or fall of wages resulting from the conditions of demand and supply (in the labour market),..... has as little to do with the general law of the rise or fall in the profit rate as the rise or fall in the market prices of commodities has to do with the determination of value in general'.

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(38) Theories of Surplus-Value Vol. III p.312 and p.300.

(39) Capital Vol. 1 p.510

(40) Theories of Surplus-Value Vol. III p.300
surplus-value (decreasing the necessary part of the working-day by an increase in the social productivity of labour) takes place. Together with this change, occurs, generally, an increase in the intensity of labour as capitalism tries to obtain more value per unit of time (increased expenditure of labour in a given time (41)) from the same worker. Both increased productivity and greater intensity of labour augment the mass of articles produced in a given time and therefore shorten the part of the working necessary to produce the wages of the workers. In so far as increasing intensity of labour requires, as compensation, an equivalent increasing real wage, it has no effect on the rate of exploitation. Otherwise, it will increase it. (42) The increase of the intensity of labour has also physical and social limits so that the main method open for increasing surplus-value under developed capitalist conditions of production is to increase the productivity of labour, i.e. through technical change.

Increases in the productivity of labour from the standpoint of material production involve a change in what Marx calls the technical composition of capital.

'This latter composition is determined by the relation between the mass of the means of production employed, on the one hand, and the mass of labour necessary for their employment on the other'. (43)

Increases in productivity involving increases in the technical composition of capital are represented under capitalist production by changes in the value composition of capital i.e. the ratio of constant capital, or value of means of production, and variable capital or value of labour power. Between the technical and value composition there is a 'strict correlation'. Marx expresses this relation by saying that:

'The value composition, in so far as it is determined by its technical composition and mirrors the changes of the latter (is called) the organic composition of capital' (44)

The importance of grasping the process of accumulation from both its material and value side is crucial for understanding Marx's general theory.

(41) Capital Vol. I p.524
(42) The relevance of the class-struggle is important here. One aspect of productivity deal bargaining quite clearly involves the question of compensation for increases in the intensity of work
(43) Capital Vol. I p.612
(44) ibid,
The increase in the mass of means of production per worker (rise in the technical composition) is not merely a technical premise which enters into Marx's argument at a particular stage. It is the expression in general terms of the only way that the productivity of labour can rise under capitalist production, that is, by the extension of the social division of labour. This latter process, accompanied by an increase of the mass and volume of means of production, is also the basis of Marx's argument that the organic composition of capital in so far as it is determined by the technical composition will rise, although not as fast as the technical composition, due to the increasing productivity of labour.

With the growth in the proportion of constant to variable capital, grows also the productivity of labour, the productive forces brought into being, with which social labour operates. As a result of this increasing productivity of labour, however, a part of the existing constant capital is continuously depreciated in value, for its value depends not on the labour time that it costs originally but on the labour-time with which it can be reproduced and this is continuously diminishing as the productivity of labour grows. Although, therefore, the value of the constant capital does not increase in proportion to its amount, it increases nevertheless because its amount increases even more rapidly than its value falls. (45)

Marx regarded it as an incontrovertible fact, (46) as a self-evident or a tautological proposition (47), that the organic composition of capital should rise. To show that this was not a mere assertion but follows logically from the concept of capital itself will be the concern of the rest of this section.

The compulsion to employ machinery, under capitalist production and to increase by these means the productivity of labour is expressed in reality by competition and the consequent need to reduce the cost of production. But this is not its explanation which must be deduced, in terms of Marx's method, from the concept of capital itself. (48) The concept of capital is a contradictory one. On the one side we have capital as 'value in process' as value attempting to expand itself without limit and on the other side we have the working population, the limited basis of that expansion. Capital, therefore, must, on the one hand, try and make itself as independent as possible of that basis in its process of self-expansion; it attempts to

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(45) *Theories of Surplus-Value* Vol. II p.415-16
(46) *Theories of Surplus-Value* Vol. III p.364
(47) *Ibid* p.366
(48) *Grundrisse* p.662
reduce the necessary labour time to a minimum by increasing the productivity of labour. On the other hand it needs to increase the basis of its expansion, that is the labour-power available for exploitation; that means to increase simultaneously the working population. This can be expressed in another way. Given the working-population (in labour-time units i.e. number of working days multiplied by the time per working day) available to society, then surplus-value can only be increased by increasing the productivity of labour, that is, by a reduction of the (relative) working population. Similarly, assume a given development of the productive forces then surplus-value can only be increased by increasing the available working population i.e. by an increase in the (relative) working population. Marx then argues that

'The unity of this contradictory tendency therefore, of the living contradiction, (comes) first with machinery' (49)

The dialectical solution to this contradiction (its removal to a higher level) is to increase the scale of production through the replacing of living labour by objectified (dead) labour in the form of machinery. In this sense machinery in so far as it comprises fixed capital is capital in its most adequate form.

'Thus machinery appears therefore as the most adequate form of fixed capital and fixed capital in so far as capital can be considered as being related to itself, as the most adequate form of capital generally' (50)

(49) ibid p.660-1

(50) ibid p.586 See David McLellan Marx's Grundlage. Basil Blackwell & Co. 1971 p.134 for English translation. Marx continues 'On the other hand, in so far as fixed capital is firmly tied to its existence as a particular use-value, it no longer corresponds to the concept of capital which, as a value, can take up or throw off any particular form of use values and incarnate itself in any of them indiscriminately. Seen from this aspect of the external relationships of capital, circulating capital appears as the most adequate form of capital as opposed to fixed capital.'
Marx clarifies this important point in the following passages taken from the Grundrisse:

'In machinery, objectified (dead) labour appears in the labour process itself as the dominating force opposed to living labour, a force represented by capital in so far as it appropriates living labour.

The development of the means of labour into machinery is not fortuitous for capital, it is the historical transformation of the traditional means of labour into means adequate to capitalism.... Thus the full development of capital does not take place - in other words, capital has not set up the means of production corresponding to itself - until the means of labour is not only formally determined as fixed capital but has been transcended in its direct form, and fixed capital in the shape of a machine is opposed to labour within the production process... The quantitative volume, and the efficiency (intensity) with which capital develops as fixed capital, thus shows in general the degree to which capital has developed as capital, as domination over living labour and the degree to which it dominates the production process in general. It also expresses the accumulation of objectified productive forces and likewise of objectified labour...(51)

What we have tried to show from an examination of the concept of Capital is the necessity of increasing the social division of labour, through the application of machinery and therefore, of replacing on an increasing scale living labour by objectified (dead) labour. It follows from this that both the technical composition of capital and the organic composition of capital must increase in the process of capitalist production although the latter will not increase as quickly as the former due to increases in the productivity of labour.(52)

This is clearly expressed by Marx when he says:

'However, much the use of machinery may increase the surplus-labour at the expense of necessary labour by heightening the productiveness of labour, it is clear that it attains this result, only by diminishing the number of workmen employed by a given amount of capital. It converts what was formerly variable capital, invested in labour power, into machinery which, being constant capital does not produce surplus-value.....' (53)

(51) ibid p.585-7, and McLellan p.133-5

(52) For a discussion of the relation between the technical composition, the organic composition of capital and the scale of production, see Theory of Surplus-Value Vol. III p.382 ff.

(53) Capital Vol. 1 p.407
The necessity to continually extend and substitute objectified labour for living labour is clearly expressed in the condition for the introduction of machinery for the purpose of cheapening a product. That is, that less labour must be expended in the production of the machine than the (paid) labour (value of labour-power) that is displaced by the employment of the machinery. The limit to the use of the machinery is given by the difference between the value of the machine and the value of the labour power replaced by it.\(^{(54)}\) This latter point can be expressed algebraically as follows:

\[
T_{t+1} - C_t < v_t - v_{t+1}\]  

(usual notation)

clearly if all labour available for exploitation is to be employed in the interest of capital this requires a further extension of the division of labour (material side) and \(C\) must increase at a faster rate than \(V\) for total social capital (value-side). Likewise if we consider total social capital in periods \(t\) and \(t+1\) and let \(w\) be the total value produced in one period of production, then with the usual notation

\[
C_t + \left( V_t + S_t \right) = v_t
\]

\[
C_{t+1} + \left( V_{t+1} + S_{t+1} \right) = v_{t+1}
\]

If the total working-time available to capital for its employment remains constant \((V + S = \text{const})\) then for accumulation to take place

\[
V_{t+1} > v_t
\]

so that with or without an increase in the rate of exploitation, if all labour is to be employed

\[
\frac{C_{t+1}}{V_{t+1}} > \frac{C_t}{V_t}
\]

\(^{(54)}\) ibid p.392
If the working population increased then accumulation would have to be that much faster (greater than the increase in the working population) to satisfy the condition for the introduction of machinery and the expansion requirements of capital.

Before finally concluding this section we must say something about capital-saving innovation. This term can only have real significance if the innovation is brought about by 'gratis' increases in the productivity of labour. In general 'the increase in the productive power itself must be paid for from capital, it is not free (gratis)'(55) In such a case all the above arguments hold. What of this case where the cheapening of the elements of constant capital comes about 'gratis'? Marx compares this to the increase exploitation of natural wealth by the mere increase in the tension of labour power. 'Science and technology give capital a power of expansion, independent of the given magnitude of the capital functioning' (56)

A number of points can be made here:

1. Capital-saving innovation is a confusing ideological term. From the standpoint of total social capital such innovation is labour-saving; less labour time is necessary to reproduce constant capital. Such innovation would therefore allow accumulation to take place at a much faster rate without the increase in the organic composition that would have occurred without the innovation. So that accumulation and expansion will be given an impetus. Unless such inventions are continually re-occurring the general tendency of the organic composition to rise would reappear. Logically such 'gratis' inventions have to be treated separately from the accumulation process. They modify it but do not belong to its internal logic. To give any more significance to such inventions it has to be shown that, necessarily, they must continually re-occur.

(55) Grundrisse, p.662
(56) Capital Vol. 1 p.605
The introduction of such inventions pre-supposes that a developed capital structure already exists. That is, the development of capitalist production has taken place along the lines indicated above; accumulation and the consequent rising organic composition of capital. So that new 'waves' of such inventions have as a presupposition for their introduction into the production process a further normal development of capitalist production.

The effect of such inventions will be less the higher the organic composition of capital already achieved i.e. more developed and widespread in capitalist production.

There is no reason to assume that such 'gratia inventions will not affect labour equally. After all a great deal of so-called 'scientific management' is concerned with just such an application of 'science' to the labour process. If this is the case, the effect of such 'gratia increases in productivity will be even more limited for the organic composition.

The Tendency of the Rate of Profit to Fall and the Crisis Theory

That it is inherent in capitalist production for capital in the process of its self-expansion, to create an ever increasing basis for that expansion, that is, the proletariat, and at the same time seek to increase the productiveness of social labour, that is not into motion a constantly increasing quantity of means of production with less expenditure of labour power, leads to the formation of the industrial reserve army.

'MThe same causes which develop the expansive power of capital, develop also the labour-power at its disposal. The relative mass of the industrial reserve army increases therefore with the potential energy of wealth' (58)

Marx calls this the absolute general law of capitalist accumulation which like all other laws, he says, is modified in its working by many circumstances.

(57) 'Accumulation of capital is therefore increase of the proletariat' Capital Vol. 1 p.614

(58) ibid p.644
This law is the general expression of the contradictory nature of capitalist production, of the increase in the social productivity of labour under the 'domination of capital'. The size of the reserve army is relative to the rate of capital accumulation. During periods of stagnation and average prosperity it weighs down on the working population and during periods of rapid expansion, being a reservoir of labour power, holds back the 'pretensions' of the labour force. (59)

The process of capitalist production, of accumulation and the increase of the social productivity of labour has so far been examined through an analysis of its 'invisible and unknown essence'. The appearance of surplus-value and rate of surplus-value 'on the surface of the phenomenon' in the form of profit and the rate of profit is the next step in the analysis.

Although the rate of profit thus differs numerically from the rate of surplus-value, while surplus-value and profit are actually the same thing, and numerically equal, profit is nevertheless a converted form of surplus value, a form in which its origin and the secret of its existence are obscured and extinguished. In effect, profit is the form in which surplus-value presents itself to view, and must be initially stripped by analysis to disclose the latter' (60)

The general law of capitalist accumulation from the standpoint of capital (and the capitalist) represents itself 'on the surface of the phenomenon' as a tendency of the rate of profit to fall. This is not a mechanical or algebraic relation but the expression of the contradictory nature of the accumulation process from the standpoint of capital.

The development of the social productivity of labour under capitalism, leads to a decrease of exchange-value of commodities relative to their use-value, (they are produced with less expenditure of labour-time) together with an increase of the mass of use-values. The accompanying rise in the organic composition of capital means that the mass of the means of production grows faster than the mass of labour employed from the material side, and from the value side, constant capital grows faster than variable capital. However, due to the increasing productivity of labour the value-composition rises slower than the technical-composition. If the rate of exploitation, the proportion between surplus and necessary labour-time remained the same, the rise in the organic composition of capital would lead to a falling rate of profit since it is

(59) ibid p.639
(60) Capital Vol. III p.47
only the variable part of capital that yields surplus-value, while the rate of profit is measured on total investments i.e. constant and variable capital. This inherent tendency for the rate of profit to fall is called by Marx

"the most important law of modern political economy and the most essential one for understanding the most complicated relationships. It is the most important law from an historical standpoint." (61)

Since the increase in the organic composition of capital represents an increase in productivity, the rate of surplus-value will not remain constant but will be increased because the value of the mass of products constituting the equivalent for the necessary labour-time is cheapened. This is the result of an increase in relative surplus-value.

"The tendency of the rate of profit to fall is bound up with a tendency of the rate of surplus-value to rise, hence with a tendency for the rate of labour exploitation to rise...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 of labour is expressed under capitalism". (62)

Does this mean that the fall in the rate of profit can be completely compensated by an increase of surplus-value? Or as Sweezy put it

"it is not possible to demonstrate a falling rate of profit by beginning the analysis with the rising organic composition of capital". (63)

Marx was quite aware of this objection when he said that

"the compensation of the reduction in the number of labourers by means of an increase of exploitation has certain insurmountable limits. It may, for this reason, check the fall in the rate of profit, but cannot prevent it entirely." (64)

---

(61) Grundrisse p.634
(62) Capital Volume III, p.234. It is quite astonishing that critics of Marx such as Joan Robinson can say that Marx's theory rests on the assumption of a constant rate of exploitation. Our analysis of the general law of capital accumulation shows nothing could be further from the truth. And Marx makes the point many times in Volume III of Capital. See Joan Robinson An Essay on Marxian Economics London MacMillan 1953. p.36.
(64) Capital Vol. III p.242 (slightly corrected translation)
Sweezy could find no real answer to this problem because he fails to see the capitalist process of production from both its value and material side. His own discussion rests on purely value considerations whereas Marx sees the process in its entirety. Surplus-value is produced by living labour and the physical and social limitations and possibilities involving this labour affect the production of surplus-value.

'Inasmuch as the development of the productive forces reduces the paid portion of employed labour, it raises the surplus values, because it raises its rate; but in as much as it reduces the total mass of labour employed by a given capital, it reduces the factor of the number by which the rate of surplus-value is multiplied to obtain its mass. Two labourers, each working twelve hours daily, cannot produce the same mass of surplus-value as 24 who work only two hours, even if they could live on air and hence did not have to work for themselves at all' (65)

Although the argument is unclear as to what is the surplus labour-time of the twenty-four labourers, the point is clear. While the means of production per man employed have no "finite" limit theoretically the mass of surplus-value produced by a worker has an impassable limit, namely the duration of the working day. Further as capitalism develops it becomes increasingly more difficult to shorten the necessary labour-time by an increase in productivity.

"The greater the surplus-value appropriated by capital because of the augmented productivity...the smaller the already established fraction of the working-day which provides an equivalent for the workers...so much the smaller is the increase in surplus-value which capital can obtain from an increase in productivity. Surplus-value increase, but in ever diminishing proportion to productivity. To the extent that capital is already developed...so much the more frightfully must it increase productivity even to expand (i.e. to increase surplus-value) by a lessened proportion - because its barrier always remains the proportion between the fraction of the day which expresses necessary labour and the entire working-day. Only within these boundaries can it move." (66)

Marx gives numerous arithmetical examples in the Grundrisse of the decreasing effect an increase of productivity of labour will have, the smaller is the already established part of the working day which provides an equivalent for the workers. We shall just give one of his extreme examples which makes the point very clear. Suppose the necessary labour is already reduced to 1/1000 of the working day. The total surplus-value would be 999/1000. Increase the productivity of labour by a thousand so that the necessary part of the working day is 1/1000,000, and the total surplus value 999,999/1,000,000. But the increase in surplus-value due to a thousand-fold increase in productivity will be

\[
\frac{999,999}{1,000,000} - \frac{999}{1000} = \frac{999}{1,000,000}
\]

\[
= \frac{1}{1001}\]

(65) ibid (66) Grundrisse p.246
So that a thousand-fold increase in the productivity of labour increases surplus-value by less than \( \frac{1}{1001} \) (or \( \frac{1}{1000} \)). While this rather unrealistic example only brings the point home, the point can be made more generally.

If \( n \) is the labour-time available to society (assumed constant). Then with the usual notation

\[ \dot{v} + \dot{s} = n \]  

(1)

If \( c \) is the rate of exploitation \( \left( = \frac{s}{v} \right) \)

Then \( \frac{\dot{V}}{\dot{S}} = s = n \)  

(2)

So that \( s \left( \frac{1}{c} + 1 \right) = n \)  

(3)

Differentiating (3) with respect to time, we obtain

\[ \frac{ds}{dt} \left( \frac{1}{c} + 1 \right) - \frac{e}{c} \frac{dc}{dt} = 0 \]  

(4)

That is;

\[ \frac{1}{s} \frac{ds}{dt} = \frac{1}{(1+e)} \frac{1}{e} \frac{dc}{dt} \]  

(5)

So that a unit increase in \( s \) will require a larger increase in \( e \), the larger \( e \) is already.

So that the higher the rate of exploitation (the less-time it requires to reproduce the value of labour-power) the greater must be the increase in the rate of exploitation in order to increase the mass of profits sufficiently to compensate for the falling rate of profit. \( (68) \)

\( (67) \) ibid p.244 See also p.239-47

\( (68) \) We can assume a uniformly increasing population i.e. \( \frac{dn}{dt} = k \) (const). Instead of (5) we would obtain

\[ \frac{1}{s} \frac{ds}{dt} = \frac{k \cdot e}{(1+e)s} + \frac{1}{(1+e)} \cdot \frac{1}{e} \cdot \frac{dc}{dt} \]

As \( s \) increases \( k \cdot e \rightarrow 0 \) and our result is not significantly altered.
The tendency of the rate of profit to fall is an expression of the increasing difficulty in raising the rate of exploitation sufficiently to satisfy the self-expansion requirements of capital as capitalism progresses.

The accumulation process involves a rise in the organic composition of capital, a rise in the productivity of labour and a relative decrease (absolute increase) in the labour employed. These express themselves in a tendency of the rate of profit to fall, although the mass of profits or surplus-value absolutely increases and the rate of exploitation increases. This means,

'The progress of the process of production and accumulation must, therefore, be accompanied by a growth of the mass of available and appropriated surplus labour and consequently by a growth of the absolute mass of profit appropriated by the social capital...The same laws, then, produce for the social capital an increase in the absolute mass of profit and a falling rate of profit.' (69)

So long as accumulation increases the mass of profits sufficiently to compensate for the falling rate of profit, all is well. This is the case if capital grows at a faster rate than the rate of profit falls. This only expresses the fact that capital of a higher organic composition of capital must grow at a faster rate than that of a lower composition to employ the same, let alone an increased amount of labour-power. (70)

Besides the inherent tendency, within the accumulation process, to check the tendency of the rate of profit to fall by an increase in the mass of profits there are other counteracting tendencies that can apply temporarily. These are the increase in the rate of surplus-value by lengthening the working-day or intensification of labour, the pushing down of wages below their value, the cheapening of the elements of constant capital, and foreign trade. (71) The fall in the rate of profit is, therefore, not linear but in some periods is only latent coming to the fore more or


(70) *Theories of Surplus-Value* Vol. II p.542

less strongly in other periods and appearing in the form of a crisis cycle.

On this theory capitalism is always driven to a higher and higher productivity of social labour in order to produce sufficient surplus-value for the continuous reproduction and expansion of the growing capital. But this process is a contradictory one.

The contradiction ... consists in this that the capitalist mode of production has a tendency to develop the productive forces absolutely, regardless of value and of the surplus-value contained in it and regardless of the social conditions under which capitalist production takes place; while it has on the other hand for its aim the preservation of the value of the existing capital and its self expansion to the highest limit (that is an ever accelerated growth of this value).' (72)

When the expansion of production outruns its profitability, when existing conditions of exploitation preclude a further profitable capital-expansion or what amounts to the same thing, an increase of accumulation does not increase the mass of surplus-value or profits, an absolute over-accumulation has occurred and the accumulation process comes to a halt. This interruption of the accumulation or its stagnation constitutes the capitalist crisis. It represents an overproduction of capital with respect to the degree of exploitation. From the point of view of profitability at this stage, existing capital is at the same time too small and too large. It is too large in relation to the existing surplus-value and it is not large enough to overcome the lack of surplus-value. Capital has only been over-produced in relation to profitability. This is not a material overproduction for the world in this respect in under-capitalised. (73) This stresses once again the central contradiction between the commodity as a use-value and as an exchange-value, between production for use and that for profit.

There exists besides the Marxian theory of value and accumulation (of which the second is only a more concrete development of the first) no separate theory of crisis. (74) As Kattick has put it:

'Warr's value theory of capital development is at once a general theory of accumulation and a special crisis theory; that is to say neither one nor the other can be dealt with separately'. (75)

(72) Capital Vol. III p.244 (Translation Kerr ed. p.292. taken from)
(73) P. Kattick Marx and Keynes op. cit p.69
(74) See Rudi Schneider op. cit. p.165 for a discussion on this
(75) P. Kattick op. cit. p.93
Although the actual crisis has to be explained out of the real movement of capitalist production credit and competition, it is the general tendencies of the accumulation process itself and the long-run tendency of the rate of profit to fall that constitutes the basis of that explanation. These tendencies have been analyzed through an understanding of the 'inner nature of capital'. The overproduction of capital arises out of the conflict between the increase and development of the productivity of labour from a material standpoint and the narrow basis and aim of that development under capitalist conditions of production, i.e. the self-expansion of capital.

The real barrier of capitalist production is capital itself. It is the fact that capital and its self-expansion appear as the starting and closing point, as the motive and aim of production; that production is merely production for capital, and not vice versa, the means of production are means for an ever-expanding system of the life-process for the benefit of the society of producers. The means - unconditional development of the productive forces of society-comes continually into conflict with the limited end, the self-expansion of the existing capital.

We have shown the tendency that capitalism has towards overproduction and crisis without considering competition. In the discussion so far it has also been assumed that all goods are actually sold at their value and there are no realization difficulties; that is the tendency towards crisis and overproduction of capital can be deduced independent of such considerations. In order to indicate why the crises takes the form of 'periodically recurring explosions' with each cycle tending to be more severe than the next, we need to discuss the role of the crisis in restoring the conditions for a new profitable expansion. It is here that competition becomes a decisive factor in the whole discussion.

With a relatively decreasing mass of surplus-value in relation to the growing mass of constant capital, competition for this declining mass becomes a vital element in the accumulation process. Competition is the result of the struggle for profits and extra-profits accompanying the rise in the productivity of labour. For those first introducing new methods of production can sell their cheaper produced commodities above their price of production, and under their social value, (above their individual value). Competition is the force that equilibrates different production prices to a new social average value.

(76) Theory of Surplus-Value Vol. II p.512
(77) Capital Vol. III p.243 (Kerr ed. p.293)
(78) This is not quite the same as accepting Say's Law for the purpose of developing the long-term trend. Say's Law is concerned with the equality of an ex-post magnitude 'proceeds' to an ex-ante schedule 'aggregate supply price'. Marx assumes the identity of 'proceeds' and aggregate value and both of these are ex-post magnitudes. See S.R. Hage The Law of the Falling Tendency of the Rate of Profit... Columbia Univ. Ph.D thesis 1933. Univ. Microfilms. Ann Arbor Michigan p.129f. For an interesting discussion on K. Marx and Say's Law see Bernard Shaw in J.J. Spengler and W.R. Allen (eds) Essays in economic Thought (Rand McNally, Chicago 1930) pp. 454-469.
A fall in the rate of profit connected with accumulation necessarily calls forth a competitive struggle. Compensation of a fall in the rate of profit by a rise in the mass of profit applies only to the total social capital and to the big, firmly placed capitalists. The new additional capital operating independently does not enjoy any such compensating conditions. It must still win them and so it is that a fall in the rate of profit calls forth a competitive struggle amongst capitalists, not vice versa. (79)

Competition comes into its own in the crisis situation. The crisis, while representing an end to the accumulation process, is nevertheless the precondition for its continuation on a higher level. In the crisis profitability of capitalist production is restored, in principle, in a number of ways. Assuming no physical destruction of capital takes place (either through lack of use of abandonment or destruction through war), the same quantity of use-value, of means of production, before the crisis represents a smaller exchange-value of means of production after the crisis through devaluation of constant capital. However, neither the rate of surplus-value nor the mass of surplus-value are affected as they relate to the unaltered use-value of capital and hence to its unaltered productive capacity. Hence the rate of profit will increase because the same amount of surplus-value related to a lower total capital. Clearly, this only holds once the expansionary process has begun again and represents a redistribution of profits (or potential profits) in favour of those capitalists who have managed to buy up capital 'cheaply'. Secondly, with the centralisation and restructuring of capital that takes place in the crisis through competition, only the more productive capitals survive and allow for a higher social productivity of labour with increased markets. It is this mechanism which decreases the value of labour-power and thereby increases the rate of exploitation and mass of surplus-value. The larger markets allow for increasing economies of scale.

Thirdly, this restructuring usually includes the abandoning of part of the least profitable and often obsolete constant capital and as such frees the surviving capital (in money or commodity form) for new, more productive investment. Fourthly, due to the relative surplus-population (increase in unemployment) wages, which had a tendency to go above their value in the period of prosperity previous to the crisis are now temporarily pushed below their value. Simultaneously, the working-day

(79) Capital Vol. III p.251
can also be lengthened and the intensification of labour can be increased resulting in an addition of surplus-value. Further through 'rationalisations' in the labour-force new methods and techniques of work, new methods of production can be introduced without the 'frictions' that would have taken place before the 'disciplining' affect of the crisis on the labour-force.

All these factors together play a role in the restoration of profitability of capital and this allows the accumulation process to continue on a new higher level. The crisis therefore, removes the temporary barrier to further accumulation but only to set new limits on a higher level still.

We have explained why competition has only been introduced at this stage. In effect competition takes place throughout the production process reflecting the striving after surplus-value and tending to equalise profit rates, establishing prices of production and driving the less efficient capitals out of business. But it is only in the crisis that competition really becomes 'a life and death struggle'.

'Under all circumstances, a portion of the old capital would be compelled to lie fallow, to give up its capacity of capital and stop acting and producing value as such. The competitive struggle would decide what part would have to go into this fallow state. So long as everything goes well, competition effects a practical brotherhood of the capitalist class as we have seen in the case of the average rate of profit, so that each shares in the common loss in proportion to the magnitude of his share of investment. But as soon as it is no longer a question of sharing profits, but of sharing losses, everyone tries to reduce his own share to a minimum and load as much as possible upon the shoulders of some other competitor... competition then transforms itself into a fight of hostile brothers. The antagonism of the interests of the individual capitalists and those of the capitalist class as a whole then raises itself felt as previously the identity of these interests impressed itself practically as competition.' (80)

The overproduction of capital, and therefore the crisis, was due to the fact that accumulation and the expansion of production had outrun profitability. Given the degree of exploitation any further capital invested would not yield sufficient profits.

The crisis mechanism restructures capital and increases the rate of exploitation so that a new expansion becomes possible. In this sense the capitalist crisis can be regarded as the strongest countering tendency to the long-run tendency of the rate of profit to fall. (81) The tendency towards 'breakdown' and stagnation therefore takes the form of cycles due to the effects of the countertendencies of which the actual crisis is an extreme case.

'Otherwise, it would not be the fall of the general rate of profit, but rather its relative slowness, that would be incomprehensible. Thus, the law acts as a tendency. And it is only under certain circumstances, and only after long periods that its effects become strikingly pronounced'. (82)

The actual periodicity of crises simply stems from the ability of capitalism to overcome the overproduction of capital, through changes in the conditions of production which increase the mass of surplus-value, and restore an adequate rate of exploitation relative to existing capital. (83)

Whether the crisis will be successful in restructuring capital to a greater profitability clearly is not merely a narrow 'economic' question. Nothing is more clear in the crisis than the wasteful and destructive side of capitalism. Its 'civilising' tendencies are seen to be bought at an enormous expense. The struggle between capital and labour, the class-struggle in the widest sense, becomes a struggle about the system itself. The outcome of the struggle cannot be predicted, and in this sense 'no crisis is the final crisis' for capitalism. The 'crisis' is the most poignant expression of the 'disease' of the contradictions of capitalist production but it is also the 'cure' the forcibly established unity of elements that have become independent'. (84)

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(81) Rudi Schmied op. cit. p.197
(82) Capital Vol. III. p.233
(83) Hattick op. cit. p.73. The definite crisis-cycle of the last century, as Hattick says is not directly related to the Marxian theory.
(84) Theories of Surplus-Value Vol. II. p.513. In this sense as Marx says 'Permanent crises do not exist' ibid. p.497.

That Marx clearly held to such position can be seen from his passage in the Grundrisse, a great deal of it written by Marx in English

'Hence the highest development of productive power with the greatest expansion of existing wealth will coincide with depreciation of capital, degradation of the labourer, and a most straightened exhaustion of his vital powers. These contradictions lead to explosions, cataclysms, crises, in which by simultaneous suspension of labour and annihilation of a great portion of capital, the latter is violently reduced to the point, where it can go on... whereby it is enabled (to) fully (exploit) its productive powers without committing suicide. Yet, these regularly recurring catastrophes lead to their repetition on a higher scale, and finally to its (capital's) violent overthrow'.

Grundrisse, 626
4. Incorrect versions of the Theory of Crisis

(a) The Possibility of Crisis Confused with its Cause.

There are many possibilities for disturbances and crisis prone developments in the circulation process of commodities and capital. Marx discusses the circulation process of capital in Volume II, of Capital and many Marxists have assumed that the cause of crises lies in the circulation process. In developing the general theory of accumulation and crisis Marx assumes that all commodities are sold at their value and that there are no disturbances in the process of circulation. Nevertheless the system is driven towards crises due to the overproduction of capital.

In his critique of Ricardo's theory of accumulation he drops the assumptions that there are no difficulties in the circulation process. He indicates the ever present possibility of crises occasioned by the fact that the capitalist economy is not one of barter, the exchange of products against products, but one of money exchange. And, money is not merely a medium of exchange, but is a store of value (abstract general social labour) in its function as a means of payment.

Marx pointed to two crucial features of the exchange of commodities that contain within it the possibility of crisis. They are the separation of sale and purchase and the fact that money is used as a means of payment to bridge the separation. The commodity actually exists as a use-value and nominally exists, in its price, as an exchange-value. So it is that in the metamorphosis of the commodity the possibility of crisis exists. To realise its price, it must be sold. The possible difficulty of converting the commodity into money (C→M) of selling it arises from the fact that the commodity must be turned into money, but the money need not be immediately turned into a commodity (M→C). Sale and purchase can be separated. No one can sell unless someone else purchases, but no one need purchase because he has just sold. (Money can be hoarded).

We now consider money as a means of payment. If a particular commodity cannot be sold for some reason or other in a particular time, the producer of that commodity might not be able to pay his debts etc. This can mean that a whole network of mutual obligations and debts cannot be met, and therefore, the possibility of crisis exists. These are what Marx calls the formal possibilities of crisis. The first form is possible without the latter, that is to say, crisis are possible without credit and without money serving as a means of payment. But the second form is not
possible without the first, i.e. the separation of purchase and sale. (85). What is important for our discussion is what Marx said about these formal possibilities of crisis and how we are to regard them.

The general possibility of crisis is the formal metamorphosis of capital itself, the separation, in time and space, of purchase and sale. But this is never the cause of the crisis. For it is nothing but the most general form of crisis, i.e. the crisis itself in its most generalized expression. But it cannot be said that the abstract form of crisis is the cause of crisis. If one asks what its cause is one wants to know why its abstract form, the form of its possibility, turns from possibility into actuality.

... The general conditions of crisis must be explicable from the general conditions of capitalist production. (86)

There are all sorts of factors that can precipitate the crisis and which appear to be their cause. Marx gave many examples such as crop failures, inadequate depreciation reserves for fixed capital replacement, changes in the turnover period of capital, changes in the channels of trade etc. But all these factors which may precipitate a crisis and in so doing give its unique historical features are not its general cause which has to be sought in the conditions of capitalist production itself. (87)

An uninterrupted process for an individual capital depends on the effectiveness of the process of capital circulation as a whole and the latter functions only under the conditions that satisfy the reproduction and self-expansion requirements of total capital. It is not possible to separate the circulation process from the capital process as a whole. This is precisely the fault of the two main distorted versions of the Marxian crisis theory, namely, the disproportionality thesis and the under-consumptionist thesis. The general features of these two positions will now be discussed.

(85) Theories of Surplus-Value. Vol. II. p.513-4
(86) ibid p.515
(87) For a similar view see Bernard Shoult op.cit p.461-3 and Rudi Schindler op.cit. p166ff.
(b) The Disproportionality Thesis

In discussing the reproduction schema in Volume II of Capital Marx spoke of the fact that capitalist production in which money plays not only a role as a means of a circulation, but also as money capital in the normal course of reproduction on either a simple or extended scale, engenders conditions which change into so many conditions of abnormal movements, into so many possibilities of crises, since a balance is itself an accident owing to the spontaneous nature of this production (88).

The disproportionality thesis rests upon an untenable interpretation of the reproduction schema in the second volume of Capital. In these schema Marx shows the necessary relationships that must hold between the two principle departments (the of production industries and means of consumption industries) if the process of simple and extended reproduction is to continue undisturbed. He attempts to show that the exchange relations between the two departments must be in accordance with regard to both their value and use-value side, if the equilibrium conditions of the reproduction of total social capital are to be maintained. He did not say that they could be maintained but indicated the conditions that would be necessary, in order to give a fuller understanding of the processes involved. In this sense, as Rosdolsky has put it, 'the reproduction schema of the second volume can be regarded as a (provisional) solution to the so-called realisation problem'.

What Marx shows is that if certain conditions of proportionality in the exchange between the two departments are observed no over-production of commodities would occur and reproduction on either a simple or extended scale could carry on undisturbed. That is to say, the general cause of the capitalist crisis cannot lie in the circulation process. Neither the possibility of overproduction nor the impossibility of overproduction follows from the schema themselves. That, in reality, there are many disturbances of equilibrium, is taken as given by Marx as we have already

(88) Capital Volume II p.495. See also his point about the disproportion between fixed and circulation capital - 'a favourite argument of the economists in explaining crises' - that must arise on the assumption of normal reproduction. ibid. p.469.
indicated. But these disturbances while they may appear to precipitate a crisis are not its cause. To show their cause we have to show how the possibility of crisis, how these disturbances and disproportions are turned into an actual crisis, how they become generalised for the total production process itself.

The reproduction schema abstract from decisive elements of the capitalist production process. They are the increase in the organic composition of capital with the accompanying increase in technical progress and production of relative surplus-value. The normal progress of capitalist production will continually disturb the 'equilibrium' of proportional exchanges, and therefore, the relations between production and consumption that are indicated in the reproduction schema analysis. What must be remembered is that these schema are only a particular stage, represent a certain level of abstraction in the development of Marx's theory. The production process and the circulation process, the problem of production and realisation, have to be seen within the total process of capitalist production as a whole and that means in conjunction with those contradictory tendencies of development that we have analysed earlier.

Various interpretations of the reproduction schema have played a role in certain political struggles in the working class movement. It is interesting to see how the use (or misuse) of the schema can have or have had, enormous political consequences. The Russian Legal Marxists, following the lead of Tugan Baranowski, as in the case of Bulgarov, and also the early Lenin, relied on these schema in their arguments against the Narodniki. The Narodniki had claimed that due to the underdevelopment of Russia, the lack of 'internal' and 'external' markets, capitalism would not be able to develop. Against this the Legal Marxists and Lenin had argued that capitalist industrialisation was possible since a relatively faster growth of the means of production industries could be achieved by altering the proportional relationships in the two sectors. But as Rosa Luxemburg remarks

"the question was whether capitalism in general and Russian capitalism in particular is capable of development; these Marxists, however, proved this capacity to the extent of even offering theoretical proof that capitalism can go on for ever". (89)

The Russian Legal Marxists had stressed one aspect of the problem, that accumulation itself extends capitalist markets. They had in their polemic not found it necessary to argue that this development is a contradictory one, a limited possibility for a developed capitalism. But Rosa Luxemburg took her

(89) Rosa Luxemburg Accumulation of Capital Routledge and Kegan Paul 1963 p.325
argument much too far - she denied that accumulation is 'possible' given the assumptions of Volume I and II of *Capital*. She had failed to understand the level of abstraction of the models and had had to turn to a theory resting on 'lack of non-capitalist markets' to justify, what had been a methodologically correct and revolutionary point of view. (90)

The argument of the Russian Legal Marxists were very attractive to the German and Austro-German Social Democrats. First Hilferding, then Otto Bauer and finally Kautsky took the reproduction schema and suitably developed them in order to show that undisturbed accumulation can take place and that the law of the falling rate of profit would be superseded. Crisis could only be due to disproportionalities and these could be avoided by thorough planning. For example the idea of an economic breakdown of capitalism for Hilferding 'is no rational conception at all'. This is because 'in capitalist production both reproduction on a simple as well as on an extended scale can proceed undisturbed only if all proportions are maintained' (92).

The consequences of such views for a discussion of the role of the State in the capitalist economy are clear. A rejection of the revolutionary for the reformist view.

In Otto Bauer's model we have a rising organic composition of capital, but as Rosa Luxemburg pointed out, a constant rate of surplus-value. Despite this unlikely combination the model breaks down even according to his own assumptions. Henryk Grossmann showed this in a critique of Otto Bauer's reproduction schema. Bauer claimed that his schema showed that undisturbed accumulation was possible but he only worked out the results of his schema for four years. Grossmann continued it and showed that after a certain period, the system must break down due to lack of surplus-value (94). What the theorists of disproportionality crises forget is that Marx shows the necessity of crises, of over-production of capital, assuming proportionality between departments. While disturbances and disproportionalities are a continual feature.


(91) This Bukharin praised her for and showed that she had understood fully the importance of the crisis theory for the Marxist case. See N. Bukharin *Imperialism and the Accumulation of Capital* ibid. p.268

(92) Cited in Rosdolsky op.cit. p.574

(93) Hilferding *Das Finanzkapital* 1927 p.471

(94) H. Grossmann op.cit. p.99ff
of the capitalist system of production they are only partial in their effect, and since they are always present, they cannot be the explanation of the crisis cycle. Before we leave this section we should mention the disturbances in the production process caused by the turnover period and renewal of fixed capital. With the progress of capitalist production, the mass of value contained in, and durability of, fixed capital increase. On the other hand, the real life-span of fixed capital is continually shortened by

'continuous revolution in the means of production, which likewise incessantly gains momentum with the development of the capitalist mode of production. This involves a change in the means of production and the necessity of their constant replacement on account of moral depreciation, long before they expire physically'. (95).

Crisis always form the starting point of large new investments and in that sense build a new material basis for the next turnover-cycle. This leads to an expansion that continues until the next downturn due to insufficient productivity in relation to existing capital. Though the life-span of fixed capital certainly influences the cyclical nature of capitalist production its impact clearly depends on the expansion of capitalist production generally and the tendencies that are inherent in that development.

(c) The Underconsumptionist thesis

This position is really only an extreme version of the disproportionality thesis. It sees in the necessary disproportion of production and consumption the cause of capital crises. The underconsumptionist theories in their various forms have one central shortcoming in common. That is, they break the crucial connection between the production and circulation process and consider the latter independently and as the limitation of the former. Whether it is the lack of non-capitalist markets (Rosa Luxemburg), or the 'inherent tendency to expand the capacity to produce consumption goods more rapidly than the demand for consumption goods' (Paul Sweezy) or the lack of effective demand that dulls the incentive to invest (Joan Robinson and other left-Keynesians), it is the circulation process that finally in a limitation on the process of production. The last two cases either manifest themselves in a crisis (over-production of consumption goods) or in stagnation (idle productive resources are

(95) Marx Capital Vol. II p.185
not utilised to produce additional capacity because it is realised that the additional capacity would be redundant relative to the demand for the commodities it could produce. (96)

Marx himself criticised very harshly all underconsumptionist theories known to him (especially Malthus and Chalmers). It is worthwhile examining briefly Marx's critique of Malthus because it indicates the failure of all underconsumptionist theorists to understand the nature of capitalist production. The problem derives from Malthus's theory of value. The value of a commodity is equal to the value of wages contained in the commodity plus a profit increment on advances made by the capitalist according to the general rate of profit. The latter is the price for the purchaser as distinct from the price for the producer, and the price of the purchaser is the real value of the commodity. The question is, how is this price to be 'realised', who is to pay for it? (97) Mutual exchanges between the capitalist class do not really help and presumably additional accumulation only makes the discrepancy worse. There will be more commodities that need to be sold. (98) Malthus's solution to this problem was, of course, a growing

(96) Paul Sweezy Theory of Capitalist Development op. cit. p.160
(97) Marx, Value, Price and Profit Vol. III p.41
(98) This kind of argument is put by Sweezy op.cit. p.160-2. Also Baran and Sweezy Monopoly Capital op.cit. p.62. Tony Cliff also argues in a similar way in his 'underconsumptionist' version of the crisis. In the final analysis all means of production are potentially means of consumption.... the relative increase in the part directed to accumulation compared with the part directed towards consumption must lead to overproduction. And this is a cumulative process.' See Tony Cliff 'Perspective of the Permanent War Economy' Socialist Review 1957 p.37. This version of the crisis becomes one of multi-causes in Baran, A Marxist Analysis p.163. Similarly Keynes explicitly held to this view, 'New capital-investment can only take place in excess of current capital-disinvestment if future expenditure on consumption is expected to increase' and 'capital is not self-subsisting entity existing apart from consumption'. The General Theory of Employment Interest and Money MacMillan & Co. 1936 p.105-106. In all those theories overproduction and underconsumption are synonymous and this was emphatically not the case for Marx.
class of unproductive consumers, 'buyers who are not sellers' who enable the capitalist to realise his profit and sell his commodities 'at their value'.

How these 'purchasers' come into possession of their means of purchase without giving any equivalent in order to buy back less than an equivalent with the means thus obtained, Mr. Malthus does not explain' (99).

Later Marx refers to this third class of purchasers as a deus ex machina as a class which transacted one phase of the circulation of commodities H-C, but not M-C-H, as a class which bought without selling. (100)

Where do their financial resources come from? The critical point is out of surplus-value already produced. They are unproductive consumers and therefore increasing such consumption will detract from accumulation. The effect of increasing such expenditures considerably will therefore, accentuate the movement towards stagnation and the latent tendency of the rate of profit to fall will become an actual fall. Insufficient surplus-value will be produced to satisfy the profitability requirements of the capital invested.

'If too large a part of surplus-labour is embodied directly in luxuries, then clearly, accumulation and the rate of reproduction will stagnate because too small a part is reconverted into capital'. (101)

For Marx it is the discrepancy between material and value production which leads to difficulties in the accumulation process. The crisis is an over-production of capital in relation to profitability or, what amounts to the same thing, an under-production of surplus-value in relation to the growing mass of total capital.

'An overproduction of capital, not of individual commodities, signifies therefore an overaccumulation of capital - although the overproduction of capital always includes the overproduction of commodities.' (102)

The over-accumulation of capital is the cause of the over-production of commodities and the latter is not the limitation to the capitalist production process.

99) *Theories of Surplus-Value* Vol. III p.22
(100) ibid. p.49-50
(101) ibid. p.246
(102) *Capital* Vol. III p.246
The under-consumptionists either view the capitalist system 'statically' and confuse effective demand with 'consumption' demand (wasteful or otherwise) or they view the system from its 'material' side only and are faced with a 'potential' or 'actual' over-production of commodities. Now effective demand under capitalism is constituted by the consumption of workers and capitalists (wasteful or otherwise) the replacement of constant capital used up in the production process and by the additional surplus-value invested i.e. additional capital. It is this latter part, central to the accumulation process, that determines the capacity of the capitalist system to expand. This brings us finally back to the 'theory of the falling rate of profit' on which the explanation of declining profitability and the consequent halt in the accumulation process rests. As Marx's said so clearly in Capital:

'It must never be forgotten that the production of... surplus value and the reversion of a portion of it into capital, or accumulation forms an indispensable part of this production of surplus-value - is the immediate purpose and compelling motive of capitalist production. It will therefore, therefore, to represent capitalist production as something which it is not, namely as production having for its immediate purpose the consumption of goods or the production of means of enjoyment, for capitalists.

This would be overlooking the specific character of capitalist production.' (103)

Joan Robinson's criticism of Marx in her Essay on Marxian Economics is quite consistent with her Keynesian position. She says in relation to the two famous passages in Volume III of Capital that on superficial reading attributes to Marx an under-consumptionist position; 'Thus to clinch (Marx's) argument it is necessary to show that investment depends upon the rate of profit and that the rate of profit depends, in the last resort, upon consuming power. It is necessary, in short, to supply a theory of the rate of profit based on the principle of effective demand.' and 'The theory of the rate of profit is a red herring across the trail and prevented Marx from running the theory of effective demand down to earth.' (104)

(103) ibid p.233-9 (Translation. Kerr ed. p.235-6)
(104) Joan Robinson op.cit. p.50 and 51
Where Marx differs from Keynes is precisely on the question of the falling rate of profit. It is not the propensity to consume or subjective expectations about future profitability that is crucial for Marx. It is the rate of exploitation and the social productivity of labour that are the key considerations and these in relation to the existing capital stock. While for Keynes the low marginal productivity of capital has its cause in an over-abundance of capital in relation to profit expectations, (105) and therefore to a 'potential' over-production of commodities (the capitalist will not invest). For Marx the overproduction of capital is only relative to the social productivity of labour and the existing exploitation conditions. It represents an insufficient mass of surplus-value in relation to total capital. So that for Marx the crisis is, and can only be resolved by expanding profitable production and accumulation, while for Keynes, it can supposedly be remedied by increasing 'effective demand' and this allows for government induced - production. That this has certain limitations will be part of our discussion in the next section. All that need be said here is that the increase of 'effective demand' and attempts to stimulate the 'incentive to invest' can only be successful if they lead to a 'restructuring of capital' towards a greater profitability. Whether government-induced expenditure can achieve this depends on the nature of, and effects of that expenditure in relation to the private capitalist sector. We have included the Keynesian 'effective demand' theory in our discussions of under-consumptionism because it has in common the belief that 'consumption' and therefore the circulation process are limitations on the process of production in spite of the recognition of investment as a central part of 'effective demand'. What remains in this section is to indicate that those passages in Volume III referring to the underconsumption of the masses in no way can be interpreted as an underconsumptionist theory of crisis.

The basis usually given for a 'underconsumptionist theory of crisis' is Marx's statement that

'...The last cause of all real crises always remains the poverty and restricted consumption of the masses as compared to the tendency of capitalist production to develop the productive forces in such a way, that only the absolute power of consumption of the entire society would be their limit'.(106)

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(105) Keynes op. cit. p.136 'It is important to understand the dependences of the marginal efficiency of a given stock of capital on given in expectations, because it is chiefly this dependence which renders the marginal efficiency of capital subject to somewhat violent fluctuation which are the explanation of the Trade Cycle' ibid. p.143-4

(106) Capital Volume III. Moscow p.239-40. (Translation Kerr ed. p.560)
The above passage contains within it no more than a description or a restatement of the capitalist relations of production. Marx called it a tautology to explain the crisis by lack of effective consumption, (107) and this supports our point. The limitation of the consumption of the masses is the precondition of the reproduction and self-expansion of capital. It is only another expression of the 'value' character of capitalist production and is identical therefore with the contradictory basis of capitalist production, between the attempt of capital to expand itself without limit and the limited basis of that expansion, the working population. The following passage makes the point quite clear:

Overproduction (of capital) is specifically conditioned by the general law of the production of capital: to produce to the limit set by the productive forces, that is to say, to exploit the maximum amount of labour with the given amount of capital without any consideration for the actual limits of the market or the needs backed by the ability to pay; and this is carried out through continuous expansion of reproduction and accumulation and therefore constant reconversion of revenue into capital, while on the other hand the mass of producers remain tied to the average level of needs and must remain tied to it according to the nature of capitalist production. (109)

To conclude this section we end with a contribution from Engels that perhaps makes the most incisive and clear attack on the underconsumptionist theory of crises:

'Overconsumption' of the masses, the restriction of the consumption of the masses to what is necessary for their maintenance and reproduction, is not a new phenomenon. It has existed as long as there have been exploiting and exploited classes... The underconsumption of the masses is a necessary condition of all forms of society based on exploitation, consequently also of the capitalist form, but it is the capitalist form of production which first gives rise to crises. The underconsumption of the masses is therefore also a pre-requisite condition for crises, and plays in turn a role which has long been recognized. But it tells us just as little why crises exist today as why they did not exist before'. (109)

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(107) Capital Vol. II p.410-1 See also Capital Vol. III p.239 where the same point is made.
5. The State and the Theory of Crisis.

(a) Introduction

State expenditure, and some claim military and space expenditure have been
decisive, has played a significant role in maintaining social and political stability
since the Second World-War. The question, therefore, of the nature and limits of this
expenditure is crucial for Marxist theory. What follows is an attempt to explain
the role and nature of state-expenditure, including arms-expenditure, in relation
to Marx's theory of crisis. This explanation is only an outline and a framework in
which further discussion may take place. In particular there is no discussion
here about the efficacy of state intervention in the national economy today with
the growth of international monetary markets and international firms. (110)

We shall argue that the nature of the government's expenditure is quite
critical in this discussion. In so far as it is 'unproductive' expenditure then
for it to be maintained or extended necessitates continual increases in the pro-
ductivity of labour in both the private and state sector. Only by understanding this,
does it become clear why the process of concentration and centralisation of capital
has continued at an accelerated rate. The sharpening competition on the world market
is a further expression of the need to enlarge markets and to maintain and increase
one's share of the surplus-value produced world-wide. This has naturally given an
impetus to the 'merger' movement. (111)

(110) See Robin Kurray 'Capital and the Nation State', New Left Review, 67,
and Bill Warren 'How International is Capital?', New Left Review 63 for
the beginnings of a discussion. What is clear is that the Labour
Government's room for manoeuvre (1964-70) were severely limited once they
had accepted the constraints imposed by international capital.

(111) The largest 100 manufacturing enterprises in Britain produced 15% of net
output, by 1970 this had risen to 50%. The share of small companies in
manufacturing output shrank steadily from 42% in 1926 to 22% in 1951, and
more rapidly to 25% in 1968. Gerald Newbould found that the main reasons
for takeover bids were generally 'desires to move fast towards increased
control of the market and the necessity to take defensive action to preserve
existing market and industrial positions'. in Management and Merger Activity,
1970. All cited in Frances Cairncross Sizing up the Merger Boom, Business
Observer, 19th November, 1972. See also Bob Rowthorn, Imperialism, Unity
or Rivalry, New Left Review, 69, Sept/Oct, 1971, for a discussion on how
the fight to control and increase the share of markets reflects itself in the
investment policies of large corporations overseas.
The 'rationalisations', including productivity deals, the Industrial Relations Bill and other attempts to make capital more 'productive' in the reflection of this process in Britain. (112)

Towards the turn of the century the business cycle mechanism was no longer sufficient to bring the restructuring of capital through crisis and competition towards a greater profitability. As Paul Mattick puts it,

"The business-cycle as an instrument of accumulation has apparently come to an end; or rather, the business-cycle became a 'cycle' of world-wars. Although this situation may be explained politically it is also a consequence of the capitalist accumulation process". (113)

And it was seen,

"that only under conditions of large-scale warfare....in which half of the Gross National Product served the needs of war, was there a full use of productive resources". (114)

The Keynesian anti-slump suggestions must be seen in this context. The period of wars had already brought the state to intervene massively in the economy. The basic argument of the Keynesians was that the government intervention in the economy was needed to increase effective demand and compensate for the decline in the rate of private capital formation. This was necessary to prevent large-scale unemployment and consequent social unrest.

The Second World War, as all wars, led to a further redistribution of economic power and to a concentration and centralisation of capital in the hands of the most dominant economic powers. In this sense war takes over the 'role' of the crisis in allowing for the restructuring of capital and the ensuing increased productivity of labour. It, thereby, improved the conditions for further accumulation by an enormous destruction of existing capital. State intervention was essential to 're-organise' capitalist production after the war; a process that could not have been carried out by private capital alone. But it was the fact of the enormous destruction of capital that laid the basis of the post-war boom. (115) As the

(112) It is not generally recognised that the main emphasis on moves by the government is to 'control' the labour force, to have a more disciplined labour force so that new technology, and more important, new methods of organisation of labour can be introduced. If the productivity of labour can rise sufficiently then quite clearly large firms are prepared to pay big increases to get their reorganisation through, e.g. recently at British Leyland. After all the 'novelty' of so called 'scientific' management was that it makes 'high wages and low labour costs', not only compatible, but, in the majority of cases, mutually conditional' (F.N. Taylor Shop Management 1903 p.21/22). Cited in Alfred Sohn-Rethel. The Dual Economics of Transition. C.S.S.E. Bulletin, 2,2, Autumn 1972, p.43. Those who see these measures as primarily an attack on real wages miss the crucial point: the necessity to increase the social productivity of labour if sufficient mass of profits are to be produced to prevent the rate of profit falling.

(113) Mattick Marx and Keynes p.135.

(114) ibid p.139.

(115) It is also my contention that while after the first world-war the revolutionary cont. next page.
basis for expansion existed, the state needed only to give impetus to this process by deficit budgeting, credit expansion and redistribution of essential resources in the interests of the most productive capitals.

At this stage we must examine the nature of government expenditure and understand its relation to private capital formation. The point about state expenditures is that they are financed and paid for out of taxes. If the state finances its expenditures through deficit-spending, to this extent 'future' taxes, which presuppose the future profitability of capital, are assured. In either case, present or 'future' surplus-value is appropriated from private capital by the state, in the form of taxes or loans, to pay for these expenditures. This represents a decline in accumulation and a decline in the rate of growth of the productivity of labour.

This is so because the state-induced production is 'unproductive' from the point of view of capitalism as a whole. Although state expenditure 'realises' surplus-value, the products bought by the state do not function, in general, as capital, and therefore do not produce additional surplus-value. The finished products that the state buys are acquired with already produced surplus-value. The individual private capitalist producing for the state quite clearly gets the average rate of profit and 'surplus-value' is produced by his exploited workers. But from the standpoint of society, of total social capital, 'unproductive' state expenditure constitutes a 'drain' of capital. So the profit acquired by the individual capitalist producing for the state comes to him only out of a redistribution of the already produced surplus-value. We shall now examine theories of the role of state expenditure on arms production and by criticising these theories clarify this point.

(b) Theories of the Role of Armaments Production in the Economy.

Theories of the role of armaments in the economy were first developed as modified versions of the underconsumptionist position. The theories that we shall briefly discuss are those put forward by theorists who claim to be Marxist. In this respect, it is sometimes difficult to decide what exactly constitutes the core of their theories. It will be the aim of this section to show that even though such theories sometimes acknowledge, more or less seriously, Marx's theory of the falling rate of profit, they show no real understanding of Marx's position. And where they are not explicitly underconsumptionist, they, if consistently developed, are no more than a modified version of the Keynesian theory of effective demand.

The first ideas about the role of armaments in the economy were concerned with theories of imperialism. In the case of Rosa Luxemburg, militarism fitted into a theory of imperialism, but also had another function.

(115) impact of the Russian Revolution on the working-class in Western countries did not allow capitalism to really begin successfully a new phase of expansion, after the second World-War inspite of the war itself, conditions were very different. Stalinism and Fascism had had their effect on the
In addition, militarism has yet another important function. From the purely economic point of view, it is a pre-eminent means for the realisation of surplus value; it is in itself a province of accumulation.' (117)

Luxemburg's position is very confused; she sees armaments production as financed out of taxes which fall entirely on wages and as robbing the non-capitalist strata of their purchasing power. (116) So that arm production can be regarded as a kind of "forced saving" imposed on the workers. These savings are extra to the saving out of surplus (-value). They are invested in armaments, and that ends the story.' (119)

In that case they cannot be a pre-eminent means for the realisation of surplus-value over and above what the national capitalist market can absorb, as here, extra surplus-value is created by increasing the rate of exploitation. That is, from the standpoint of the capitalist class as a whole, the lowering of wages. Joan Robinson recognised this inconsistency and suggests a more consistent position.

'The analysis which best fits Rosa Luxemburg's own argument, and the facts, is that armaments provide an outlet for the investment of surplus (and above any contribution there may be from forced saving out of wages), which unlike other kinds of investment creates no further problem by increasing productive capacity. (Not to mention the huge new investment opportunities created by reconstruction after the capitalist nations have turned their weapons against each other).' (120)

This position outlined by Joan Robinson is the one that is central to the various versions of the Permanent Arms Economy. (121) In this case the aim of the theory has changed somewhat, and is rather to explain the stability of capitalism in the post-war years. It is this problem of stability that gives significance to Keynesian bias that Joan Robinson gives to Rosa Luxemburg's position.

The 'permanent war economy' according to Cliff, stabilises the over-producing capitalism because, 'the new State demand for arms, army clothing, barracks etc.' together with 'the increasing purchasing power of the people' who indirectly receive employment by arm expenditure, provides 'greater openings for capital accumulation movement and so it was much easier after the war to 'reorganise' capitalism towards greater profitability without the enormous opposition of the working-class seen in the 1920's. The post-war boom certainly was helped by those conditions. The introduction of science and new technology into industry etc. could proceed more smoothly.

(115) cont. working-class movement and so it was much easier after the war to 'reorganise' capitalism towards greater profitability without the enormous opposition of the working-class seen in the 1920's. The post-war boom certainly was helped by those conditions. The introduction of science and new technology into industry etc. could proceed more smoothly.

(116) The case of nationalised industries will be dealt with later.

(117) Rosa Luxemburg op cit. p.454.

(118) ibid p.446.

(119) Joan Robinson intro. The Accumulation of Capital ibid. p.27.

(120) ibid p.27-8 (our underlining).

investment.' (122) The 'permanent war economy' as 'internal' market has replaced the necessary 'external' markets of Rosa Luxemburg. 'The Third' buyer - not worker nor capitalist consumer - need not necessarily be the non-capitalist producer but the non-producing state'. (125) But this is clearly incorrect. The 'important difference is that the export of capital or goods helps to produce additional surplus value in non-capitalist lands either through the process of direct investment (production) or unequal exchange and this is returned to the advanced capitalist countries. (124) This would only be true of armaments production, if the arms were sold elsewhere. (125) That is, there are buyers with the ability to pay, with the equivalent exchange. Otherwise all the points Marx makes against Malthus (see pp 39 - 40 above) hold here.

So far we have indicated the underconsumptionist and Keynesian bias in this position. (126) Before we go on to explain the mechanism of the arms-economy, it is first necessary to say something about the latest, and most well known, version of this theory. In a book called Western Capitalism Since the War and in various essays, Michael Kidron develops a more elaborate view of the 'Permanent Arms economy'. There are a number of confused positions held together in this theory, and, in general, the underconsumptionist aspect is pushed into the background. Kidron tries more than all the other theorists to relate his position to the 'Marxian theory of the falling rate of profit'. So that before this theory is discussed fully it will be necessary to explain in a general way the stabilising function of armaments production as it is described by all these theorists, and to show how Kidron attempts to relate this to the theory of 'the falling rate of profit'.

(122) T. Cliff op cit p 38. Here the analysis falls back on the Keynesian multiplier effect.

(123) T. Cliff, Rosa Luxemburg, Socialist Review Publication 1968 (second ed) p 90 note. A similar argument arising out of Rosa Luxemburg's theory is put by T. Kowalik, a Polish economist, when he says 'She made her abstract thesis on the impossibility of the existence of capitalism without the pre-capitalist environment more specific by her analysis of the role of the armament sector in the process of total accumulation. It follows from this analysis that capitalism can create its own internal market which plays in accumulation the same function on an external market'. 'Rosa Luxemburg's Theory of Accumulation and Imperialism' in Problems of Economic Dynamics and Planning. Essays in honour of M. Kalecki, Pergamon Press p 219.

(124) This was the fundamental error in Rosa Luxemburg's theory of non-capitalist markets; she could not even explain her own historical results. See my review article Imperialism and the Accumulation of Capital op cit p 71 for a fuller discussion.

(125) On a world-wide scale this point does not hold, i.e. for 'world' capital.

(126) T.N. Vance's position is clearly underconsumptionist; for instance he says, 'War outlays, in fact, have become the modern substitute for pyramids' op cit p 10. See also p 9, 16, for similar points.
The 'underconsumptionist' and 'lack of effective demand' arguments for the interference of the State in the economy are quite usual. What is important to the arms-economy theorists is why armaments production, and only such production, can really explain the stability of the post-war years. Arms expenditure as opposed to other 'Public' expenditures is more effective in stabilising the economy and preventing slump for the following reasons. It does not compete with private interests in the same field, and yet industries are involved which are generally most affected by slumps. They decrease the productive capacity of capitalism and thereby slow down the growth of social capital. That, while not adding to the national productive capital, the capitalist class considers them an important power instrument in the defence of their wealth and even a weapon for enlarging prospective markets. In this sense they force other countries into the same expenditure. Other points made are that 'spin off' from military research has not been negligible and that industries which produce armaments benefit because their risks are minimised by government guarantees and a large part of research and development costs are taken over by the government. Kidron adds that the result of such expenditure has been 'high employment and as a direct consequence of that, rates of growth amongst the highest ever'. How he reconciles this with the fact that armaments expenditure decrease the productive capacity of capitalism will be discussed below.

In all these arguments, shorn of technicalities, what is crucial to the analysis is that arms production while decreasing productive capacity 'mops up unemployment' and offers outlets for investment and in so doing stabilises the economy. Now there seem to be two positions held by these theorists. The first sees the problem as one of overproduction of commodities and armaments production as contributing to the 'realisation' of surplus-value while not exacerbating the problem further by increasing productive potential. That is, if further productive investment took place the additional surplus-value being 'realised' through accumulation of capital, the problem would become worse, since it would only enlarge the divergence between production and consumption (or 'effective' demand). Armaments production do not do this as they constitute a 'drain' of productive capital. Kidron sometimes seems to hold to this argument for example when he says that

'too much productive expenditure on the part of the state would both upset the balance between individual capitals and accentuate the systems bias towards overproduction'.

But at other times another argument dominates, and this is most clear in his more recent essay in World Crisis where he says:


(128) M. Kidron op cit p 49.

(129) Ibid p 55. This comes directly after a position that could be understood very differently. It is not clear what Kidron means by overproduction.
'Since arms are waste (or a 'luxury') in the strict sense that they are neither wage goods nor investment goods and therefore cannot constitute inputs into the system, they have no direct part in determining it and their production has no direct effect on profit rates over all. But since their production is a leak of high capital intensity it tends to offset the system's inbuilt bias towards declining rates of profit'. (130)

The declining rate of profit argument here is explicitly related to Marx's own position, (131) but in his book this argument is formulated in Keynesian terminology. In discussing state expenditure Kidron says,

'For one thing too much productive expenditure by the state is ruled out. Seen from the individual capitalist corner, such expenditure would be a straight invasion of his preserve by an immensely more powerful and materially resourceful competitor; as such it needs to be fought off. Seen from that of the system, it would lead to such a rapid build-up of the capital-labour (value) ratio, to use one mode of expression, or to such a low marginal productivity of capital, to use another, and to such a low average rate of profit as a consequence, that the smallest rise in real wages would precipitate bankruptcy and slump'. (132)

We have shown earlier that the Keynesian and Marxian terms have little in common in their explanation of the falling rate of profit. Because they see the question mechanically - if we can slow down the rise in the organic composition by not investing productively, then the fall of the rate of profit will be slowed down - the armament theorists have forgotten a crucial link with the accumulation process. If insufficient productive investment takes place then the mass of profits will not rise sufficiently and the latent tendency of the rate of profit to fall will become an actual fall because of a stagnating private capital accumulation. Further this possibility is only accentuated by the fact that surplus-value is being drained off unproductively. So that, from the point of view of total social capital, more capital must be advanced to produce a smaller mass of surplus-value. It is because they have failed to understand the basic nature of capitalist production as production of surplus-value on an expanding scale that allows them to argue in this way.

That Kidron further has not understood the Marxian theory of accumulation and therefore the consequent tendency of the rate of profit to fall can be seen in his argument, crucial to his position, that armaments production do not affect the rate of profit. It is crucial because it is the only way he can reconcile high rates of growth with an increase of unproductive expenditure. We shall show that this conclusion is false and that all that is left of Kidron's theory is a more-or-less modified version of the Keynesian theory of 'effective demand' with the concomitant separation of the problems of consumption and production. The central argument here is that 'arms-production' can be regarded as a 'luxury good', in the sense that they are

(131) Ibid p 208.
(132) Western Capitalism since the war p 54 - 5.
not used as either instruments of production or means of subsistence, and that such goods do not directly affect the rate of profit. The 'proof' of this rests upon the results of a version of the 'transformation of values into prices' for simple reproduction, the attempt to reconcile the positions of volumes I and III of *Capital*. This transformation is the work of the neo-Ricardian Ladislaus von Bortkiewicz, (133) and is reported and agreed to in Sweezy's *Theory of Capitalist Development*. (134) For this 'transformation', society's production is divided into three departments, Department I being that of the production goods industries, Department II, that of workers' consumption goods industries, and Department III, that of capitalist consumption goods, including 'luxury goods'. The transformation is carried out assuming simple reproduction.

As a result of this 'transformation' an equation for the rate of profit is obtained and it is seen, mathematically, not to involve variables expressing the organic composition of capital in Department III. Sweezy, therefore, concludes and Kidron agrees, that changes in the organic composition in Department III do not affect the average rate of profit. (135) This result is also asserted in Piero Sraffa's *Production of Commodities by Means of Commodities* where he also asserts that luxury products have no part in the determination of the 'system'. We shall deal with Sraffa's position later but first we must show the complete inadequacy of the von Bortkiewicz transformation solution to begin to grasp the relation of value and price in the Marxian system. A price of production for Marx is a modified value. It is the cost price of a commodity, the quantity of paid labour contained in it, (136) plus a share of the unpaid labour, of the annual average profit, on the total capital invested in its production. (137)

'When a capitalist sells his commodities at their price of production, therefore, he recovers money in proportion to the value of the capital consumed in their production and secures profit in proportion to his advanced capital as the aliquot part in the total capital. His cost prices are specific. But the profit added to them is independent of his particular sphere of production'. (138)

That we are only concerned with modified values is made even clearer in this passage:

'In Books I and II we dealt only with the value of commodities. On the other hand, the cost-price has now been singled out as a part of this value, and, on the other, the price of production of commodities has been developed as its converted form.' (139)

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(134) Sweezy op. cit p 115 ff.

(135) Kidron op cit p 55.

(136) Capital Vol. III p 163

(137) Ibid p 156

(138) Ibid p 157 my underlining.

(139) Ibid p 161
It is because prices of production are only modified values that they clearly are consistent with the value analysis and that for any transformation of values into prices the sum of profits in all spheres of production must equal the sum of the surplus-values, and the sum of the prices of production equal the sum of its value. (140)

It follows that any attempt to transform values into prices that breaks the above condition is fundamentally misconceived. Von Bortkiewicz's solution has total surplus-value equal to total profit because of the numéraire he has chosen, but total value does not equal total price. Other solutions have total value equal to total price but not total surplus value equal to total profit. For both these conditions to hold simple reproduction must break-down. The fundamental error lies in the attempt to change \( C \) and \( V \) into prices of production. It is the value that is transferred to the product. This is why Marx speaks about 'value of the capital consumed in production'. Any other interpretation leads one to see price and not value as determining and it is not surprising that von Bortkiewicz became attracted to the subjectivist marginalist theories and the mathematical method that bring 'the cost of production theory into harmony with the law of supply and demand'. (143)

Marx was basically correct in the method he chose to outline his problem. But his problem was quite different to that imputed to him. He wanted to show how accumulation could take place under the conditions where commodities exchange at their price of production and where the capitals invested receive the average rate of profit. It is not a problem of simple reproduction, under conditions of general equilibrium, but of accumulation where different industries have different organic compositions of capital. Through the exchange process, i.e., by commodities exchanging at prices of production, each capital will receive the average rate of profit as surplus-value is transferred from the departments with low organic composition to those with high organic composition. (144)

(140) Ibid p 170
(141) Von Bortkiewicz op cit p 205. That von Bortkiewicz has understood the theoretical consequence of this, unlike many Marxists, can be seen from his theoretical paper Value and Price in the Marxian System. International Economic Papers -2, 1952 especially his conclusion 'we are thus driven to reject Marx's derivation of price and profit from value and surplus-value' ibid p 13.
(142) See J. Winternitz, Economic Journal 1948 p 276 ff. Meek has also attempted to solve this problem and, at least, recognises that the choice of the numéraire is crucial. See his Economics and Ideology and other Essays 1967, p. 14 ff.
(143) Von Bortkiewicz op cit p 54.
(144) This is why this point is the basis of the theory of unequal exchange. See C. Palloix The Question of Unequal Exchange C.S.E. Bulletin Vol 2, 1, Spring 1972.
Besides the basic error of von Bortkiewicz in transforming values into prices, even on his own assumptions his conclusions about luxury goods and the rate of profit are untenable. Simple reproduction presupposes a dependence and constancy of all the variables. Changes in the organic composition of capital exclude simple reproduction. Simple reproduction occurs on the assumption of non-changing organic compositions of capital and a given rate of surplus-value. As we have shown, the accumulation process includes both changes in the organic composition of capital and the rate of exploitation. Therefore, the conclusions derived from a mathematical formula for simple reproduction (such as those above) have no bearing on the theory of accumulation and the falling rate of profit. In so far as 'luxury goods' production uses up surplus-value, then it affects the rate of profit on total capital. As Marx puts it,

'Since the profit in this (luxury production) enters into the equalisation process of the general profit rate just as much as that in any other sphere, increased productivity in the luxury industry would bring about a fall in the general profit rate'. (145)

Therefore increases in the organic composition of capital for luxury production would affect the general rate of profit as in other sectors. This is so in spite of the character of 'luxury good' production as 'unproductive' in the capitalist sense. The case of Sraffa can be dealt with in a similar way. He begins his book by saying

'The investigation is concerned exclusively with such properties of an economic system as do not depend on changes in the scale of production or in the proportions of 'factors'. (146)

Therefore if we draw conclusions from this model we should recognize this important point. Each equilibrium situation is merely a 'snap shot' of the process at such points when the system is in equilibrium. If we wish to look at the movement itself i.e. accumulation, Sraffa does not help. His numéraire, the standard commodity, will change as accumulation proceeds and since the amount of surplus-value hived off into luxury goods production (Sraffa's non-basics) will affect the accumulation process, it will affect indirectly the numéraire.

Sraffa's labour-time inputs have little in common with Marx's socially necessary labour time. This Ricardian system ignores the use-value/exchange-value quality of the commodity and reduces exchange-value to mere labour-time inputs.

(145) Theories of Surplus-Value Vol III p 350
(146) Sraffa op cit preface V.
Profits become a residue determined externally and the rate of profit the independent variable. (147) For Marx accumulation is the independent variable and if insufficient surplus-value goes towards new investment, stagnation and overproduction (of capital) will result. Therefore investments in the luxury goods industry do affect the rate of profit. (148).

'Increased productivity in the luxury industries ... has no influence on the rate of surplus-value nor, consequently, on the rate of profit insofar as this is determined by the rate of surplus-value. Nevertheless, it can influence the rate of profit insofar as it affects either the amount of surplus-value or the ratio of variable capital to constant capital and to the total capital. (149)

and also:

'Apart from the absolute lengthening of the working-day, increased productivity in the luxury industry can affect only the number of workers employed. The inevitable consequence, therefore, is a reduction in the amount of surplus-value and hence in the rate of profit, even if no increase in constant capital takes place. If the constant capital increases, however, a reduced amount of surplus-value is calculated on an increased total capital'. (150)

The foundation of Kidron's second argument is wrong and hence it can only be regarded as another version of the theory of effective demand. We have criticised that point of view earlier on and, therefore, must reject the basic arms economy theses. (151)

(147) Ibid p 33.
(148) This is precisely what distinguishes Marx's position from that of Ricardo.
(149) Theories of Surplus-Value Vol III p 349
(150) Ibid p 351.
(151) The facts do not seem to point to a direct relation between arms spending and employment. For the U.S.
'The Sixties began with a high rate of unemployment and ... this rate fell from 6% in 1961 to 4.5% in 1965, or well in advance if the spurt in defence spending'
from 1945 - 48 when defence spending dropped over $80,000,000, unemployment remained under 4% and was 3.4% in 1948. See article in Times Business News Tues April 4th 1972.
c) **State Expenditure - Conclusions**

What we tried to show in the last section is how unproductive expenditure cannot play the role attributed to it by many Marxist theorists. Our analysis suggests, as we have indicated earlier, that far from decreasing productive capacity per se, unproductive government expenditure makes it all the more necessary to increase the productivity of labour in order to finance both the growing state sector as well as maintaining a growing profitable private sector.

To the extent that state expenditure is productive it competes with the private sector, but normally this is not the case and cannot be the case under capitalist production. Nationalisations in Western economies have usually taken place because the products were not able to be produced profitably by the private sector and yet such products are vital to the private sector. (152) Price policies are chosen to subsidise big users of nationalised industry products (marginal cost pricing) and in this sense they represent a subsidy to these users out of taxation. But this taxation is financed out of surplus-value and these policies can only be successful in so far as resources are redistributed in the direction of the more efficient industries from the less efficient. A significant factor in the growth of the gross National Debt in Britain has been the capital needs of nationalised industries, and the investment programmes planned suggest this process will continue. It is not surprising that some of the highest productivity industries in Britain are in the nationalised sector (153) and some of the fiercest conflicts with the working-class have been here as well. (154) The substitution of government - induced demand has in Europe and America been an inflationary process. It has required, particularly in the U.S., deficit financing and monetary policies that make this possible together with an enormous expansion of credit facilities. In Britain the process has been more complicated but the large increase in taxation and growth of government expenditure, a high percentage of which is 'unproductive', has had its inflationary repercussions. (153)

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(152) In the case of France certain of the nationalisations were political eg Renault, and this argument does not apply.

(153) See article in *Times* Friday October 29th 1971 p 21.

(154) Some of the largest reductions in the labour force in any industries have taken place over the last 10 to 15 years.

(155) Taxes as a percentage of G.N.P (including social security contributions) as % of G.N.P. are given for a number of countries. They are approximate:

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(Taken from *The Economist* 18th-22nd Sept. 1972 p 68)

In Britain Social Security has increased from 12.1% of public expenditure in 1951 to 18.1% in 1969. *Social Trends* No. 1 1970 Central Statistical Office p 46.
'A mild degree of inflation is probably helpful to capitalist growth; it reduces
the money value of accumulated debt, it wipes out some part of the gains to
workers from wage increases and it encourages business confidence'. (156)

Inflationary policies replace the traditional deflationary policies as soon as the effects
of deflation, and increased number of unemployed, threatened the social and political
stability of the capitalist states. As Mattick puts it,

'Inflation became the preferred, if not unavoidable, way to react to depressions
and to maintain levels of economic activity consistent with social stability.'(157)

Inflation is only the money expression of the increasing state-induced production,
the form in which this appears on the private market.

We have therefore the following mechanism. A declining rate of private capital
formation means that governments must supplement production for the market with 'Waste'
production if they are to avoid high unemployment and social instability. But this is
a capitalist expense indicating a latent tendency to crisis. This can only be avoided
temporarily, it would seem, by an extension of the credit mechanism and through govern-
ment borrowings together with increased taxation. If all new capital went into 'waste'
production, then capital accumulation would cease. But,

'A non-accumulating capital is a capitalism in crisis, for it is only through
the expansion of capital that market demand suffices for the realisation of
profits made in production'. (158)

It is clear therefore, that there are limitations to 'Unproductive' expenditure and
other government-induced demand in a capitalist economy. If production grows faster
in the 'non-productive' sector of the economy than in the 'private' sector, the produc-
tion of profit, or surplus-value, relative to total production, declines more rapidly
than before. More surplus-value must be produced from a smaller base of productive
labourers in order that the tendency of the rate of profit to fall is checked. As long
as the productivity of labour can be sufficiently increased so as to maintain the rate
of profit and finance the non-productive sector, government-induced expenditure will
indeed be the 'cause' of high employment and social stability. But this process is
self-defeating: to cope with the expense of the non-productive sector
'The exploitability of labour must be steadily raised. This means a higher organic composition of capital and a decline in the exploitable labour force relative to the growing capital. To maintain a state of high employment indefinitely, (the non-productive sector), must increase faster than total production. But this implies a slow deterioration of private capital expansion which can only be halted by halting the extension of the (non-productive sector). (159)'

The increasing concentration and centralisation of capital is, therefore, essential for increasing the social productivity of labour. Government-induced production helps in this respect because the sheer size of the 'state's 'orders' leads to a re- structuring of capital in private industry. The enormous extension of credit facilities is necessary to finance the very large investment now needed to bring about the necessary and competitive increases in the productivity of labour. This extension of credit is based on expected future profitability. This has led to reoccurring liquidity problems, now affecting large corporations, and in Britain, nationalised industries. But this investment must continue on an ever-increasing scale if the mass of surplus-value to finance both the private and state sectors of the economy is to be forthcoming. If it is not, or if state-induced expenditure grows too rapidly and the necessary restructuring of capital is not achieved, then we can expect the latent crisis conditions to take the form of an actual crisis. (160)'

The limitations of the government-induced expenditure do not lie in 'political' and technical considerations, but in the contradictions of capitalist production itself. The mixed-economy has not fundamentally changed the contradictions of the traditional capitalist system. They express themselves only in a new form that continually the government will be 'forced' to intervene in the economy to 'save' the private economy, and yet the problems will continually get worse because of the contradictory nature of this intervention.

(I59) Ibid

(160) For a discussion of the problem of liquidity see Monthly Review Vol 22 n o 4 Sept. 1970. Also Robin Murray U.C.S. Anatomy of a Bankruptcy Spokesman books 1971. For a discussion of the public sector's rising claim on resources in Britain see the report in the Times 17th Feb. 1971 p 21. It shows that while total public expenditure, including transfer payments, is planned to rise in real terms, during this period by 2½ %, expenditure as resources will rise considerably faster - by about 3½ % a year at least. This implies that the share of public sector resource purchase in the national income will tend to rise throughout the whole period (1974-5). The rising budget deficit in the U.S. is another important trend. Inflation has to be understood finally as an international phenomenon.
The situation now seems that both a contraction and extension of the government sector will lead to difficulties; a contraction to high unemployment; and an extension to increasing inflation. Either way stagnation and inflation are becoming a general feature of most Western economies.

It is only with such a theoretical framework that we can begin to understand the dilemma and seemingly contradictory policies of governments, whether conservative or social democratic, in facing what is only a new expression of the inner contradictions of capitalism. Stagnation, inflation, rising unemployment, incomes policy, productivity-deals, cuts in welfare expenditure, in other words, the offensive against the working-class, is capitalism's only political and economic answer. The imperative is to increase the rate of exploitation. Only by showing this can we demonstrate how the class struggle must turn eventually into a political struggle about the system of production itself.

David S. Yaffe

November 1972
POST-KEYNESIAN ECONOMIC THEORY AND THE THEORY OF
CAPITALIST CRISSES

J.A. Kregel

"It is easy enough to make models on stated assumptions. The
difficulty is to find the assumptions that are relevant to
reality. The art is to set up a scheme that simplifies the
problem so as to make it manageable without eliminating the
essential characteristics of the actual situation on which it
is intended to throw light.... A model that is intended to be
relevant to some actual problems must take account of the mode
of operation of the economy to which it refers." 1

Strictly speaking there is no post-Keynesian theory of the inevitable downfall
of capitalist relations. In the less ambitious sense of short-term cycles
or crises there is a large pre-Keynesian literature which was made largely
nugatory by the analysis of the General Theory. Whatever Keynes actually
meant in his infamous concluding chapter to the General Theory, it is clear that
he felt the way had been laid clear for steady full-employment of the system,
free from cyclical swings. As a result post-Keynesian analysis rarely questions
the assumption that capitalism, in some form or other, is perpetual; 2 although
interest in cycles has continued, basically in terms of the effects of govern-
ment policies used to produce the Keynesian prescription. 3 Thus the possibility of
deriving a theory of the long-term trend development of capitalism is hindered
by the implicit assumption that the system is, in theory, tenable.

This leaves open the investigation of the structural changes that capital
will undergo in its process of enlargement. It is in this sense that the work of
Steindl [20] is especially interesting for he emphasises behavioural and
institutional changes in the system that are a result of long-term capital
accumulation and how these changes affect the performance of the system. Unfor-
tunately this work is incomplete in some of its overall macro relations (and in
its appeal to a specific period of history). It is in this area that the work
of Joan Robinson and Michal Kalecki is especially clear and provides a macro basis
for the basically micro and institutionally oriented work by Steindl.

Common Foundations

1. A common factor in the work of all three is the rejection of the determination
of prices in the neoclassical fashion of supply and demand in static perfectly
competitive markets; and thus the neoclassical theory and description of the firm.
From this standpoint the theories assume the ownership of property and the
existence of power relations between producers-consumers and between capitalists-
workers that are not in any sense equal.
Ruling prices, in a dynamic setting, must produce profits sufficient to finance the investment requirements of firms, both as a micro decision making rule and a macro dynamic equilibrium condition. Investment produces the profits it needs to finance continued expansion of the firm \[17, p.117\]. These are neither cost of production prices in the normal static sense nor simple mark-ups over costs, but determined by the investment needs of dynamic firms in growing markets. The theories thus have a concern with the investment decision of firms and their effects on overall market growth, distribution and technical change. The macro mechanism that allows equilibrium and confirms the prices set by the firms will also be of crucial importance. In the aggregate sense all three adhere to the supply and demand relation expressed in the Keynesian equilibrium condition \( S = I \) (which, under certain definitions, is close to the Marxian concept of the realisation of surplus value). To sum up this relation we could say that if all investment were financed out of firms' profits and \( s \) of these profits were used for investment, the vector of firms' prices would have to produce an amount of profits such that the equilibrium condition of \( sP = I \) were confirmed.\footnote{2} The basic differences in the analyses is that Steindl, working from a micro view, addresses himself to the explanation of the problem of stagnation, a problem of concern in the post-depression years, but not borne out by subsequent experience. For Joan Robinson and Kalecki, on the other hand, the problem is primarily to comprehend the mechanism of distribution in the dynamic of capitalism. All, however, are concerned to understand the basic structural relations of advanced capitalism.\footnote{6} We first present a rough sketch of Steindl's general hypothesis, which if correct contradicts recent experience. Then on the basis of the macro relations of the Kalecki and Robinson models we attempt to construct an amalgam that fits more readily to correct actuality. We are thus unable to deduce any meaningful long-term trend predictions, but instead a model to point out weaknesses in the fabric of advancing capital growth.

Steindl's Process of Concentration

1. The assumptions about firms' structure and market are similar and will be incorporated in all the diagrams used: (1) Costs of production are constant up to full capacity utilisation of plant. For Steindl this is a statistical matter, for Robinson the result of fixed coefficients of production. (2) All firms produce at
less than full capacity. Kalecki's degree of monopoly pricing formula implying imperfect competition insures this. Joan Robinson considers it a practical matter of business policy. Steindl is less willing to accept these explanations and sees it as a result of the fact that the system is dynamic and that firms are continually earning profits.\(^7\) (3) Prices are more or less constant over the short-period; they do not respond to changes in demand, but are set at the discretion of certain firms. At a given point of time they are not higher for fear of entry into the industry and not lower because sales would not substantially increase with lower prices. The actual level of prices is thus a result of the historical development of the system (and the past behaviour of money wages).\(^8\) (4) In reference to changes in prices, the firms are assumed to have a set of expectations over future conditions and certain internal variables: (a) capacity utilisation, (b) ratio of external to internal financing of investment (for Steindl the gearing ratio, for Kalecki the principle of increasing risk \(^{10}\), p.105\), (c) rate of profit, (d) market growth. The first two are emphasised by Steindl the latter two by Joan Robinson.\(^9\) (5) The firms are considered to be ongoing propositions committed to growth and the reinvestment of a sufficiently high proportion of profits to guard their market share and thus grow at least at the market rate of growth.

2. In this general setting Steindl outlines two general stages of capitalist evolution, shown in figures 1 and 2. In the initial period of 'ideal' competition each industry has firms of different sizes. With costs of production inversely related to size the supply curve of the industry is downward sloping. With price the same for all firms, larger firms will have higher profit margins.\(^9\) Technical progress occurs regularly, but can only be introduced by firms above a certain size, so that new techniques do not affect the costs of all firms \(^{10}\), p.106\). The market growth rate is given.

In the first stage prices are used as a competitive weapon leading to the concentration of firms. In an equilibrium situation the prices will be such as to generate a flow of internal profit accumulation sufficient to increase productive capacity at the market growth rate. Thus the number of firms, market shares, profit rates and capacity utilisation are constant. Steindl assumes that accumulated profits are the major cause of investment; thus there will be one price which will give each firm in the industry a profit margin large enough to evoke investment at the market growth rate.
This situation is shown in fig. 1 representing one of the larger firms (one with lowest costs: there will thus be a number of firms with cost curves higher than \( C_1 \), but with plants of smaller capacity). At price \( p' \) the total profit (less distributions, etc) will be sufficient to increase total capacity at the market growth rate. Let us call this normal accumulation and represent it by an imaginary elongation of the x-axis of the diagram so that the proportional relations of the curves remain constant (the price and profit rate and utilisation are thus constant with normal accumulation).

Into this setting we introduce technical progress which is applicable only to firms above a certain size. The new capital (normal accumulation) and replacements of the large firms will thus be of the new technique with lower costs per unit of output. Output per man is higher with the new capital and thus the average costs of producing all output will fall to \( C_2 \). Margins and internal accumulation at the old price level will now be greater than required for normal expansion. The price \( p' \) is determined at the tangency of the CRP_1 and DRO_1 curves, which also explain the firms' reaction to the extra profits it can earn through the introduction of the new techniques. The CRP curve traces all combinations of price and output that yield the same amount (and rate) of profit (given costs) as that currently being earned at \( p' \) and capacity \( q' \). The DRO curve is a demand curve, but not in the normal static sense. It reflects the size and cost dispersion of the other firms in the industry (it will be affected by income elasticity however). Above \( p' \) it slopes away from CRP showing that at higher prices the profits of the smaller firms would be high enough to attract additional capital to the industry and thus reduce the profits of all firms. It slopes down and away from the CRP below \( p' \) showing how much additional market can be gained by cutting price below the costs of production of the smallest firms and thus leaving their share of the market open for appropriation. Thus for the large firms the only way they can invest in excess of the market determined growth rate without damaging their profit or utilisation position is to try to gain a larger market share by pricing the small firms out of business. Since the large firms' costs are lower with the new technique the CRP_2 curve shows the prices and capacity combinations possible at the same rate of profit with the increase capacity financed by the extra profits earned from the lower costs. Where the CRP_2 curve cuts the DRO_1 curve the firm will be earning the same rate of profit, its larger total profits now providing investment for a larger market share growing at the same
rate (the \( C_2 \) curve exists further rightward than the \( C_1 \) showing that this is an
addition to plant above normal accumulation) with the same capacity utilisation. This
procedure of price competition provides the outlet for the extra investment funds.
As technical progress goes on there is a trend of falling prices with increasing
productivity along with constant profit rates and utilisation. More importantly
for Steindl's eventual conclusions, this also produces larger firms with larger
market shares and a decreasing number of firms with smaller size dispersion. This,
of course, implies that the DRO curve will have a different shape after each round
of price competition for the degree of concentration of the industry that it
represents will be changing. Thus DRO slopes away more sharply from the CRP_2
curve showing that as the industry becomes more concentrated it becomes harder to
expand the market by cutting price and running the remaining small firms out of
business. The process of periodic price competition will come to a halt when a
level of concentration is reached which produces firms than can easily withstand
price competition and thus oligopoly conditions develop. Price changes as an
outlet to the pressures of disequilibrium caused by technical progress cease to
operate when the DRO curve resembles a reverse L shape indicating the end of the
period of 'ideal' competition.

"The conclusion which emerges from this picture of the 'ideal'
pattern of competition in an industry is the following: the
rate of internal accumulation is limited by the rate of
expansion of the industry and the rate of capital intensification.
The net profit margin at given level of capacity utilisation
(given the propensity to save) is therefore limited by these
factors." ...... "The conclusion is then that the rate of
internal accumulation and consequently the net profit margin at
given levels of capacity utilisation will tend to a (maximum) level
determined by the rate of growth of the industry, the rate of capital
intensification, and the rate at which existing productive capacity
is being eliminated. This amounts to saying that the share of net
profit at given utilisation in the product is determined in such
a way at to provide sufficient funds for the investment in industry".
[20, pp. 50, 51]

3. An industry that has completed this first stage is assumed to have distinctly
different behavioural characterisations: (1) profit margins cease to be flexible,
(2) the firms have a much greater fear of excess capacity, (3) the firms react less
positively to tises in profit margins (as a result of 2), and thus there is a tendency
to lower accumulation and higher margins with lower utilisation, (4) a maldistribution
of profits towards oligopolistic firms at the expense of those still in the stage of 'ideal' competition.

Aside from the fact that reactions to external changes will be different due to these characteristics (a distinction important in itself) Steindl emphasizes that the mere process of concentration, the evolution of capitalism will produce endogenous changes in the growth process. We now look at the economy as a whole, composed of oligopolistic firms. Here the overall rate of capital accumulation is given. This can be viewed as something of a norm necessary for the system to retain its long-term growth trend. In operation it resembles Harrod's warranted growth rate (and signals basic differences between the macro approach of Steindl and Robinson and Kalecki).

In conditions of oligopoly, if cost reductions due to technical progress continue, profit margins will tend to rise over time if capacity utilization is held constant. But this means (given firm savings unchanged) that internal accumulations will be higher than required for a constant rate of capital accumulation; accumulated funds will exceed the amount needed for expansion at the given growth rate. In fig. 2 we have a large firm in a position of oligopoly, signified by the shape of the DRO curve which shows that cuts in price do little to increase sales. When costs fall from C₁ to C₂, the firms have higher profit margins (and rates) which, in the period of ideal competition were used to increase market share resulting from price cuts. If this process is denied the only way to eliminate the excess is by decreasing capital utilization (with unchanged prices, and assuming that changes in the gearing ratio and capital intensity do not take up all the extra funds, which in any case would only be a short-run expedient), for there will be some rate of utilization (for each level of costs) at which internal accumulation and margins are compatible with the growth rate. The locus of such positions is traced out by the CRPC curve drawn in relation to the price p'. Thus the firm can keep its profit margins and internal accumulation constant as costs fall by reducing capacity along the CRPC₁ locus. As only normal expansion now occurs, the length of the capacity lines are constant (and the axis increases at the given rate of growth), firms' relative size and market shares are constant. Thus in equilibrium, changes in capacity utilization replace changes in prices for an economy which has become concentrated as the natural result of capitalist evolution.
Since investment is assumed to be a function of (1) internal accumulation, (2) capacity utilisation, (3) profit rates and (4) gearing, and oligopolists are assumed to react more strongly to excess capacity and the gearing ratio and less strongly to changes in profits, the effect of increasing excess capacity will lead to diminished investment and a lower rate of growth of capital. This will in turn, damage the gearing ratio, market conditions, and utilisation causing further reductions in investment to try to remedy the deteriorating position. Capital accumulation will tend to fall on average as the degree of concentration rises, i.e. as capitalism becomes more mature, leading to slower growth and the possibility of stagnation.

"If the transition of an industry from the competitive to the monopolistic form leads to a greater fear of excess capacity then investment will be reduced even without actual decline in utilisation. The 'influence' of any given level of utilisation on investment will decrease as a mere consequence of the transition of industries from a competitive to a monopolistic structure. The basic reason for a greater fear of excess capacity in 'monopolistic' industries is, of course, that the individual entrepreneur has much less chance (or perhaps often practically no chance) to expand at the expense of his competitors." [20, p.132]

Steindl thus presents two basic prepositions. The first concerns the difference in the short-run behavioural reactions of a system at different points in its process of evolution and change in structure due to concentration. The second, and more striking, is that the mere evolution of capitalism will produce changes in structure that will be sufficient to change the performance of the system, without any reference to external or random shocks. Steindl sums the situation

"The inelasticity of gross profit margins in an economy dominated by monopoly will thus reinforce any given fall in the rate of growth of capital. But, ..., the effects of monopoly will not only be to make profit margins more rigid, it will be to raise them, and moreover, entrepreneurs will have a greater fear of excess capacity under a regime of monopoly. For both these reasons there will be a tendency for the rate of growth to fall. Utilisation will be lower owing to the fear of excess capacity.

The difference in the level of investment activity in different stages of secular development can thus be explained in terms of an endogenous theory, taking account of well known structural changes such as the development of monopoly. From the above discussion it appears likely that utilisation operates as an adverse influence on investment in the period of economic maturity in contrast to earlier periods, when it did not do so, and quite probably was high enough even to contribute a positive influence on the level of investment." [20, p.137]
Before further investigation of Steindl's hypothesis we turn to a general presentation of the better known work of Kalecki and Joan Robinson in an attempt to clarify the macro relations that seem to underly the Steindl approach, although not always explicitly utilised. These models differ in the sense that they are long-run equilibrium constructions, exhibiting instructions the authors consider as realistic, but remain constant in contrast to Steindl.

For both Joan Robinson and Kalecki the emphasis on investment as a factor independent of savings and the concern over the distribution of income in the analysis of growth is crucial. The core of the theory can be easily seen in Kalecki's now famous accounting identity:

\[
\text{Output} \quad \text{Income} \\
\begin{align*}
\text{Workers' consumption} & \quad + \text{Capitalists' consumption} \quad + \text{Investment} \quad = \quad \text{Wages and salaries} \\
& \quad + \text{Profits} \quad = \quad \text{GNP}
\end{align*}
\]

where if workers' consumption completely exhausts wages and salaries profits are equal to investment plus capitalists' consumption. If capitalists' consumption out of profits is positive then profits must exceed investment by this amount if savings are to equal investment.

This equilibrium relation is expressed in net terms in the relation

\[ \Pi = \frac{g}{s_p} \]

where \( g \) is the rate of investment and \( s_p \) the proportion of profits saved; \( \Pi \) the rate of profits. The basic proposition is that the rate of investment determines the actual growth of the system. In equilibrium a set of prices and profit margins will be established that produces \( s_p \Pi = I \) and an amount of profit in relation to capital invested that equals \( g/s_p \). We can look at the graphical representation of these propositions in fig. 3. Price and wage rates are measured on the y-axis and employment on the x-axis. Given the technique of production in use there will be a determinate relation between labour employed and output produced. The area oade represents the wage bill for the production of consumption goods and abed for investment goods (the relation between employment and output.
will be different in the rage OA and AB if the techniques of production in the sectors are different). The entire area above will represent aggregate demand for the quantity of consumption goods produced by OA labourers if all wages are spent. The costs of producing the consumption goods is represented by the labour costs or cde and thus profits or aggregate demand minus costs is abed, the wage bill in the investment sector. The curve cc is a rectangular hyperbola inscribing an area equal to total profits on consumption goods abed. A perpendicular or OB at G representing employment and an associated output in the consumption sector will cut the cc line at a point signifying the equilibrium price. If the proportion of investment to consumption AB/OA were higher the cc curve would be higher and thus prices and profits would be higher. If there is consumption out of profits there will be additional demand for consumption goods and the amount of profits spent must be added to the expenditure out of wages and the cc curve will thus be higher.

Thus when the ratio of investment to output is higher, or there is consumption out of profits the cc curve will be higher indicating higher overall prices and profits. With given money wage rates, OA, real wages are lower when prices are higher. Thus any number of rates of growth (represented by I/O proportions) will be potential equilibrium rates, each with a certain level of prices, profit margins and rates, and distribution of income between wages and profits. Any rate of growth is thus possible between that corresponding to a rate of profit so low that entrepreneurs no longer invest and one so high that real wages are driven down to a level where the workers down tools and demand higher money wages. There is thus more than one possible equilibrium long-run growth rate of the system where investment will produce the profits it needs.

2. Technical progress will change the relation between output and employment. When progress raises output per man by an equal proportion in both sectors of the diagram the proportion of investment to output will be unchanged, i.e., technical progress is neutral in its effect on the allocation of labour between the sectors. As output per man is higher, entrepreneurs can now earn the same profit rate by charging lower prices (they now sell more output) or they can allow money wages to increase with the growth of productivity, leaving prices unchanged (the increase in output sold is offset by the higher wage costs). To preserve the rate of profit at a given rate of investment with neutral technical progress real wages must rise with productivity to provide sufficient demand to purchase the increased
output. With increasing productivity the entrepreneurs can at best keep their rate of profit constant, if they do not increase their rate of investment.

The existence of excess capacity in these formulations primarily affects the real wage. In full employment equilibrium higher excess capacity will imply a higher ratio of capital to consumption goods and thus a higher profit rate and lower real wage. Workers in the capital sector must produce not only replacements and new capital but an excess of capital above production needs, implying more workers in the capital sector and a higher cc curve. Thus the higher the rate of excess capacity over time the higher will be prices and margins and the lower the real wage.  

3. For Kalecki and Joan Robinson changes in margins and profit rates result mainly from differences in the rate of investment with any number of growth rates permissible in equilibrium. For Steindl on the other hand the changes in margins and rates are due to the effects of falling costs due to technical progress and the additional effects these forces have on the structure of industry facing an exogenously given rate of capital accumulation. The adapting variable for Kalecki and Robinson is the distribution of income, for Steindl the degree of capacity utilization. The introduction of capacity utilization and technical progress changes the equilibrium conditions in the Kalecki and Robinson approach, but it is still attainable; with Steindl it brings stagnation. It must be noted that Steindl has a similar overall equilibrium macro mechanism in mind, but chooses not to explore it.

Macro Critique of Steindl's Process

1. On this basis there seem to be two weak points in Steindl's thesis concerning eventual capitalist stagnation as a result of changing industry structure: the problem of real wages and the determination of the overall growth rate. In the period of 'ideal' competition prices fall in step with increasing productivity. With given money wages real purchasing power rises with real output per head caused by technical progress and the rate of unemployment is constant. In the second stage, however, with money wages constant and prices and profit margins inflexible, the real wage is constant while the increase in output per head due to technical progress continues.

The result that one would expect is that capacity is reduced, not because internal accumulation is excessive but as a result of the failure to sell output with given utilisation of plant at ruling prices. That is, utilisation is reduced to cut costs in an attempt to restore profit rates and margins to the
accustomed level. This creates additional unemployment and reduces total aggregate demand and sales and thus brings about further reductions in capacity. The existence of excess internal accumulation of profits assumes that the additional output is sold (that surplus value is realised) and this cannot be true if the output of commodities per man is rising at a faster rate than purchasing power per man i.e. given money wages at unchanging prices. Thus Steindl has no need to resort to his assumptions about higher fear of excess capacity and diminished response to changes in profit margins, but can simply rely on the relation between internal accumulation and investment to show decreasing investment.

When oligopoly sets in and real wages cease to rise with output per man, unsold inventories will accumulate, sales are below expected capacity utilisation and profit margins do not rise, but may fall. Each increase in output per man must thus be offset by a corresponding decrease in capacity to keep total revenue (output times price) equal to the total level of money demand. If, in addition, the work force is reduced as capacity falls the total level of demand is also falling, indicating that actual sales will always be less than expected. Thus internal accumulation will be below that required for constant investment and the rate of investment will be below that required for constant investment and the rate of investment falls as firms try to correct the rise in excess capacity. There seems to be little difference in this approach from the normal case of lack of effective demand (or indeed the underconsumption) theory[cf. 10, Chapter 12]. Whether one chooses to pinpoint the cause of the decline in the structural change that forbids prices to fall or in the assumption that with given money wages aggregate demand falls below supply at given prices is a matter of choice; both are operative. The matter could simply be remedied by (a) generating more investment or more realistically (b) assuming that money wages rise with productivity and thus that the C curve is raised by just as much as it falls with each round of technical progress. This along with the fact that in reality oligopolists seem no less capable of producing a dynamic capitalism, suggests that the cause of eventual crisis must be found in another place, and that the depression was more a result of firms' response mechanisms and expectations than the result of simple endogenous structural changes. We thus accept as important Steindl's point that an oligopolistically structured economy will react differently than a competitive, but must reject his hypothesis that the long-run structural changes in capitalism as he presents them are decidedly detrimental to it. Indeed, it is probably more true that they are necessary to its
continued existence. In this sense Steindl's analysis relies only on conflicts in the sphere of capital, which are under the control of the capitalists and thus solvable, in the limit by the state. The non-existence of the role of labour unions indicates that he deals with only one side of the relations of production.

2. The assumption of a given equilibrium growth rate must also be questioned. It is equally possible in both stages of Steindl's scheme for an overall rise in investment to bring about an overall rise in the growth rate and thus in individual market rates weighted by income elasticities of demand (at the expense of real wages). Although the possibility of such change without disturbing the stability of the system is slight [cf. 14 chpt. 9] its existence questions Steindl's explanation of the shift from competition to oligopoly. It seems just as reasonable to suggest that the lack of competition among firms as their size increases is as much a result of their increasing fear of the uncertainty that accompanies competition and unstable market shares as anything else. Thus, as we find in reality, it is possible for industries without high concentration to behave in an oligopolistic manner, eschewing price competition. In this sense capitalists within an industry may be seen to be cognisant of their own interests, but that this interest very seldom holds on an economy-wide scale.\(^{15}\)

**A Synthesis for a Theory of Crisis**

1. Steindl's second stage thus suggests a third where unions are allowed to bargain for money wage rises, firms directly control prices, and distributional and overall macro relations are taken into account. Firms set prices (or a group of firms or a price leader) in order to realise a certain flow of profits sufficient to finance their expected investment. Thus instead of prices and margins being a limit that the system will reach in equilibrium they are brought into the decision making process.\(^{16}\) Decisions about future investment then imply decisions about the price level and capacity utilisation. Investment decisions are taken not only in relation to past profits but to future expected market growth, ability to change prices, expected rates of profit, capacity utilisation and changes in wage costs. In accepting that investment is more a forward looking expectation
decision, past profits play a diminished role. Theoretically and empirically past profits are a poor indicator of investment which must face future market and cost conditions which will usually be different. Only when the long-run trend of past profits (and thus utilisation) are markedly out of line with confirming future estimates will they have a direct effect, but may react just as readily on the firms' price policy as an investment. Thus we maintain the sense of Steindl's assumption that profits are the main source of investment funds, but reject the heavy emphasis he places on them as a major influence on the investment decision.

Changes in productivity, utilisation and money wages affects the level of realised profits in relation to expectations and thus the prices that the firms must set to realise the flow of profits necessary to carry out their investment plans. Prices are thus flexible upwards; changes in productivity not matched by wage increases reduce the price necessary to achieve a given flow of profits and vice versa; a fall in realised capacity increase the price necessary for a given flow of finance and vice versa, both reacting on future expectations, investment and the speed of introduction of new techniques. Since the actual realised position of the individual firms will not be a direct result of their own actions, but of the combined actions of all, we must compare their individual expectations with the actuality of the economy as a whole.

This can be done by looking at figs. 3 and 4 together. In fig. 4 we have a representative oligopolistic firm, a simplification of all the firms in the system. The height of the CRP curve, given existing plant, wage costs and past experience, will signify the rate of profit necessary to fund the investment necessary to meet expected market growth. All positions on the curve give the same amount of funds, but at different utilisation and price. Given expectations of the price the market will bear and the extra capacity the firm deems necessary to meet unforeseen, but expected, fluctuations in demand, a price will be chosen. This price will then be held in the face of short-run changes in sales, these being met by changes in actual utilisation. For short period purposes the average revenue curve of the firm is thus a straight line through p'. Changes in actual sales and utilisation or in money wage rates then effect realised profits and the ability to finance investment plans.

The investment decisions of all firms will produce a proportion of investment to output for the economy as a whole such as that in fig. 3, with its associated cc curve and overall price and profit margin. If the system is in
equilibrium the price set by the representative firm will equal \( P' \) (some may be higher and some lower) implying a certain distribution of income between wages and profits, real wage and level of employment. These conditions will generate an amount of demand that allows the firms to sell expected output \( u_1 \) at price \( p' \), realised profits are sufficient to finance planned investment and expectations are satisfied. The firms all earn the expected rate of profit on investment and thus continue to carry out this investment policy. Capacity keeps step with the increase in demand and sales at expected capacity utilisation. Supply and demand confirm expectations and expectations continue to produce the investment that confirms supply and demand.

When neutral technical progress in going on output per head is rising over time. Two positions are possible, the rate of investment can be raised without decreasing the real wage or the real wage can rise with productivity at a constant rate of investment and rate of profit. If the unions oblige by demanding money wage rises at the same rate as productivity rises, the firms can continue their happy existence of constant prices and confirmed expectations. Any other policy on the part of the unions creates both instability and greater uncertainty for the firms. The case where wage rises lag behind productivity under the new assumptions about firm behaviour is similar to that already treated. Firms will have little incentive to increase investment plans for realised sales will be below normal capacity utilisation and so will profits be deficient. The firm can choose either to raise prices to try to bring profits back to normal or decrease investment to remedy the utilisation position. In either case the prices firms are trying to charge and the profit they expect are in excess of that justified by the macro relations (\( P' \) rises above \( P' \), the decrease in capacity decreases employment, \( ab \) drops to \( a'b \), and the real wage falls) as investment falls with growing unemployment and rising prices; business confidence is shattered. The particular case is, however, not very interesting.

If we are to look at class conflict in this optique it is, necessary to assume that unions carry on an aggressive policy, and attempt to push wages up faster than rises in productivity. In general terms, under these assumptions, union bargaining cannot directly effect the structure of production i.e. the proportion of investment to output (but does affect the distribution of labour's share). The margin for bargaining is in two areas, the amount of increases in
productivity and the extent of excess capacity, for real wages can rise with productivity without damaging the rate of profits and a lower average of excess capacity reduces prices and raises real consumption. 19

However, the more important influence of the unions is that they increase the amount of uncertainty in the system. In this sense the product market uncertainty that firms escape by behaving in an oligopolistic fashion is replaced by cost uncertainty through vigorous union wage policy. The effect on the firms' future profits and investment is the same. In trying to maintain steady flows of sales and profits, firms must resort much more frequently to price rises to try to offset wage rises in excess productivity, thus reintroducing both sales and capacity uncertainty in addition to cost uncertainty. In the sense of uncertainty the firms are worse off than under a regime of competition and confidence in the future is less certain. At the same time the resolve over proportions of production become more susceptible to change bringing the possibility of overall changes in distribution. (It is thus easy to see the logic of incomes policies in terms of eliminating wage uncertainty for the firms along with the unwillingness to accept price controls combined with wage restraint. It also explains the contradictory position of governments who must try to satisfy the needs of firms by allowing prices and profits to rise and the middle classes by controlling inflation and prices, such contradictory policies usually failing on both counts producing deflationary policies which produce enough unemployment to bring the workers, with small wealth reserves into a less vigorous position over wage rises and the acceptance of a freeze for their own good). 20

2. The proposition of increasing capital concentration over time implies two propositions, relating to structure. The structure of production brought about by technical change produces larger plants of greater production complexity, less compatible to the vagaries of competition. The necessary shift to controlling markets and prices in the interests of investment plans and in reducing uncertainty also requires a change in corporate financing structure, i.e. limited liability. It is through share ownership that the increase in the effect of uncertainty and risk associated with more capitalised production processes can be diffused, leaving the actual corporation with little responsibility for its actions, and the claimants to corporate profits little actual role in the creation of those profits. At the same time generalised share ownership blurs the distinction between wages and profits income and sharpens the distinction between consumers and producers. As I have indicated in other places 12a, 12b the conflict then
resources in terms of high and low income rather than wage and profits. This, of course, involves the problem of wage differentials, internalising the distribution conflict within the labouring classes, and minimises the broader conflict between consumption and investment. This internal conflict is sufficient to keep up pressure on money wages, as well as to generate demands for government provision of public consumption and welfare plans, as well as demands for environmental measures concerning the corporations' free use of natural resources. Modern conflict thus appears more in terms of broad social groupings against the large impersonal corporations, rather than a strict conflict between classes of wage earners and capitalists. The capitalists are hidden behind the screen of limited liability and share ownership.

In the General Theory Keynes argued that since savings did not determine investment the theoretical and social excuse for the existence of rentiers and high rates of interest was undermined, resulting in his recommendation for the euthanasia of the rentier and low rates of interest. Today, with the emphasis on internal finance, the closer connection between rates of profit, internal savings, and investment implies that profit rates more directly affect investment, but still implies that rentiers (in the guise of share holders) could well be dispensed with without markedly changing the provision for investment and at the same time eliminate capitalist consumption.

At the same time the effect of government financial and monetary policy geared to a world of competition, becomes less viable in affecting firms' expectations about future investment and becomes potentially more damaging. This inability leads to an increasing necessity for governments to directly undertake investment, thereby affecting the private sector ratio of investment to output. The net result of this change depends crucially on the kinds of investment measures undertaken and the methods of finance producing different effects on private profitability and investment expectations. In addition to strict policy actions, governments are called upon to carry out certain public investment policies, often in direct conflict with their desired economic policy.

To attempt to generalise, for the representative firm wages and costs due to treatment costs of formerly free resources will tend to rise more rapidly than technical progress reduces costs. At the same time resource use raises the capital base necessary for a given output. There is thus continual pressure on the flow of profits necessary to fund a desired rate of investment. Unless all these factors are perfectly foreseen (which they cannot be) the firms will find themselves with
less profits than expected. Firms can then react either by raising prices or expanding utilisation. But prices can be raised (at given utilisation) or utilisation expanded (at given prices) only to the extent of the rise in incomes (this requires the heroic assumption of unchanged savings propensities and unit income elasticity of demand, as well as the assumption that firms’ retention ratios are unchanged, both entirely unrealistic) and costs have risen more than this. The additional force for achieving the equilibrium position comes from the increase in the proportion of investment to output due to the requirements of environmental regulation. Thus the real wage in fact falls, the internalised costs of resource treatment falls on the workers-consumers, rather than on profits. This, of course, brings higher demands for money wages.

Thus the probability of the firms finding the ‘right’ prices, decreases with the increase in the number of uncertain variables. A price either too high or too low results in unemployment and rising price and wages[22, 12, Chapt. 6] with profits less than expected and required. Government policy to restrict inflation through tight monetary policy does nothing to halt price rises but encourages them as firms face short-term liquidity in funding investment projects in progress and meeting wage rises. Firms are thus forced into unattractive short-term borrowing to preserve their very existence; future investment is sharply cut. At the same time budgetary policy becomes less effective as it only supports the ability of firms to raise prices. Recovery, when it comes, is so much slower as firms first work back up to normal capacity and profits are used to retire the debt incurred during the slump. A sharp government policy to revive profitability thus has delayed and less potent effects on expectations of future profitability and investment.

At the same time, what investment the firms are carrying out, replacements, etc., will be of a labour-replacing nature, not so much to reduce labour costs as to reduce the uncertainty over future costs of production. This is another factor making for a slower recovery as a given level of output is now associated with a lower employment of labour, and a given rate of growth of output now requires a higher amount of profits, both damaging prospects for future employment and real wages. Full-employment under these circumstances requires an even higher rate of investment than under the assumption of neutral progress, but is unlikely given the dislike of uncertainty and hesitance as the firms attempt to find new sets of expectations. If they revert to their previous assessments there
is a strong possibility of high growth (relatively speaking) along with high levels of unemployment (the current US and French positions are possible examples) but these are not equilibrium positions and will revert easily to stagflation conditions as prices and margins are out of line with long-period equilibrium.

3. International considerations enter this scenario in two ways. First international competition (in foreign and domestic markets) may severely limit the ability of firms to control their prices and thereby recoup cost increases. Thus even when uncertainty is overcome by concentration and combination of domestic firms the existence of international suppliers reestablishes it. On the other hand foreign markets provide outlets for additional investment when profits run ahead of internal financing needs. The existence of multinational firm contributions thus serves the same purposes as the oligopolistic structure in the home market: they reduce the degree of foreign competition and by spreading investments reduce the uncertainty over costs by utilising very different labour forces and governments with differing policies. Thus multinationalism acts to reduce both uncertainty over international product and factor market conditions, the larger concentrations requiring even more control over such conditions. The steady flow of profit and investment required by large concentrations cannot accept the anarchy of the market in the international sphere any more than in the domestic.

Government policy now becomes doubly contradictory as policies to support firms profits in the face of wage rises more rapid than in the rest of the world brings payments crises and curing the crises by deflation hurts home and foreign sales. At the same time devaluations hurt the terms of trade, as well as increasing import prices and reducing real wages. Unfortunately the government has a solely national balance sheet.

4. The traditional long-run Keynesian analysis suggests that capitalism is inherently unstable. Despite the Keynesian policy tools it seems doubtful that vigorous capitalism will become easier to attain, less as a result of excess capacity, etc., as from the increasing effect of uncertainty over the factors that it must control. The larger the firm the larger the effect of uncertainty over wages bill, expected sales, government policy, etc. The attempts to decrease uncertainty through internationalism seems unlikely to prove satisfactory. As
the normal Keynesian instruments become less effective with more potentially damaging effects the probability is not only for more, but longer crises. The only thing that seems to have changed is our ability to accept a million unemployed; a situation that would at one time have been considered a major crisis is now in the normal run of affairs. The post-Keynesian analysis thus readmits the existence of crises, but rejects the thesis of slow decline to stagnation and maturity.

Joan Robinson's belief that "There are signs that the 1970's may prove to be the testing time for modern capitalism," [17, p.143] underlines Kaleck's challenge that the explanation of the relation of the cycle to the trend remains the 'central place de resistance of economics.' [10 p165 & 143].
1. [17, p. 141-2]

2. Schumpeter [19] is one of the few to actually envisage a breakdown in relations, although the form of his argument is similar to Marx's the analysis is markedly different. Leon [3] represents a more recent attempt at trend analysis, reaching opposite conclusions from Steindl by assuming strong capitalist class consciousness, sufficient to preserve the system indefinitely. The post-Keynesian writers have, however, strongly questioned Keynes' belief in the justness of the utilisation of resources, distribution and efficiency of the system. This is brought out in what Joan Robinson calls the second crisis in economic theory - to what goals will the investment required for full employment be put? See [17, 16].

3. The more interesting adaptations are in terms of long-run swings during the process of prolonged economic growth of capitalism. Much of Kalecki's work comes under this heading. See also Richard Goodwin [2] as an outstanding example.

4. There is a certain methodological as well as theoretical problem involved here in terms of how one treats supply and demand, i.e. as final determining factors of interest in themselves or as factors determined by other causes which find as expression in the equilibrium of supply and demand and thus confirming that the interaction of the other causes is compatible. In this latter sense, in equilibrium, supply will equal demand (markets clear and there is no incentive to change from this position) at certain prices. In no sense will supply and demand determine the prices, indeed, we could almost assert the inverse. In this sense the writers discussed here take a position closer to that of Marx on the issue.

5. It is not necessary, but simpler, to assume that the rate of profit is uniform over all firms and industries. In Steindl's case profit rates could be different if different plant size implies different intensity. Alternatively, Engels Law can provide the possibility of different growth and profit rates in different industries compatible with overall equilibrium, see Pasinetti [5] and Leon [7] for examples of this approach.

6. A problem in relating the two approaches is that Steindl puts forward a model in which the institutions change endogenously, while Kalecki and Robinson have tried to pick out the characteristic features of advanced capitalism, analyzing them in an equilibrium framework with institutions more or less constant. The basic structural relations underlying the two approaches, however, provide a link between the two approaches.

7. On the issue of excess capacity in relation to the standard theories of imperfect competition see Kaldor [7].

8. Steindl, in rejecting the method of price setting implied by the theory of imperfect competition (M = N = C) notes that firms probably do not have an idea of their demand curves and if they did would find that they were operating in the inelastic portion of demand, contradicting profit maximisation conditions, and thus appears to be in contradiction with Kalecki's degree of monopoly. In fact Kalecki's degree of monopoly has little to do with the apparatus underlying the theory of imperfect competition and relies on such the same assumptions as Steindl. See [3], p. 51-3; 9, chapt. 1 and 20, Chapt. 3. Kaldor [7] in fact, criticises Kalecki strongly for this. It is probably unnecessary but complete to add that the position of Joan Robinson has changed markedly since 1933 (see the preface to 2nd edition of [13]) and that her current
positions can be more readily ascertained from [15, part 4, and 17, chapters 7, 8].

9. Steindl uses margins in the sense of total revenues less total costs, not the margin between price and costs.

10. It will instantly be seen that the DRO curve must have a very special shape to produce this intersection at constant capacity utilisation. (CCU) In any case this cannot continue over time under the assumption that the DRO curve changes shape over time. What is more likely is that the intersection will fall to the right CCU in the early periods, indicating larger gains from a given cut in prices when a larger number of smaller firms exist and rising capacity utilisation for the large firms. As time goes on and DRO changes there will be some point in time where the intersection falls below CCU and capacity utilisation starts falling. This scheme does not fundamentally contradict Steindl's hypothesis which is in terms of broad trends and averages, but indicates that the general propositions may not exactly hold at any point in time and that the transition to oligopoly and decreasing investment is a slow and gradual process.

11. The explanation of maldistribution of profits is omitted for lack of space and the author's opinion that it contradicts Steindl's basic hypotheses. It involves the analysis of an economy where both oligopolistic and competitive industries exist at the same time. Since the latter have elastic prices and margins their prices and profits will fall as overall investment falls due to the decreasing investment from excess capacity in the oligopoly sector. The oligopolists retain their margins and profits while the competitors are penalised. If equilibrium is to continue the oligopolists must take up the investment that the competitors can no longer carry out due to lack of profits, thus indicating higher profits for the oligopolists and a shift of total profits from the competitive to the oligopolistic sector. Steindl uses this result to support the view that less competitive industries can so to speak exploit the more competitive because of their inelastic prices. It seems more obvious that since the oligopolists react weakly to rises in profits and strongly to excess capacity equilibrium investment is unlikely to be maintained and the shift will not take place, but instead a slump sets in instead. It is interesting to note that Kalecki has a similar proposition related to changes in the degree of monopoly, but this doctrine in activity is a result of a decrease in the share of wages causing deficient demand and excess capacity [9, p. 156]. This highlights the lack of functional distributional relations in Steindl's work and thus his affinity to Harrod. The only treatment of real wages is found in Chapter 14 on Marx, where Steindl rejects the influence of changes in real wages, largely on the grounds that, "the ratio of net business capital to national product does not seem to have increased at all." [20, p.296]. This can thus be used as a justification that over the trend distribution is more or less constant and thus without major influence. Cf. Below p.11.

12. This relation is different and more complicated if the rate of capacity utilisation changes. At a given rate of investment and unemployment results, in which case demand falls in step with output. If the I/O ratio is unchanged output falls with demand price is unchanged and the rate of profit falls with real wages constant in the face of rising unemployment. Cf. [16, 17].
13. It is thus obvious that technical progress in Steindl's model is meant to be broadly neutral.

14. "If the rate of growth changes for some reason, then the gross profit margins will become adjusted so as to make the continuation of this new growth rate possible without changes in utilisation".

"But the long-run growth of capital, we know, does at the same time create the markets: the greater the investment, the capital accumulation, the greater the effective demand, the market."

"In the Marxian long-run analysis the adjustment concerns the distribution of income between workers and capitalists (of which the former save nothing and the latter quite a lot): this distribution of incomes in the long-run is adjusted in such a way as to provide just the necessary saving to finance the given trend rate of accumulation".

But the application of this theory, especially to real wages fails in Steindl's view as "It presupposes a secular increase in the ratio of investment to consumption. The evidence of Kuznet's data does not confirm the assumption and it is almost certainly not realistic". It is hard to see why the acceptance of Kuznet's data (and thus Marx's immiseration thesis) for Steindl also implies that changes in distribution cannot allow different rates of accumulation and growth to exist, a point he appears to admit in the first quotation. (20, pp. 134, 237, 239, 245)

15. Here we strongly disagree with Leon [3] who posits continued capitalist evolution on the basis of the omniscience of the capitalists in recognising the macro nature of their acts and only allowing the system to change in ways beneficial to their interests.

16. Kichner [1] develops an oligopoly model of a similar nature but emphasising the 'cash-flow' position of the firm. His conclusions are however, that this structure will be generally stabilising in its effect on the growth of the economy.

17. For reasons of space the really crucial problem of the theory of the determination of the level of investment in the theories cannot be treated. Steindl claims an entirely endogenous theory by pointing to the simple existence of profits as the primary cause of future investment. This, however, is only an endogenous theory of the level of the rate of investment if the growth rate is given exogenously. Since this is primarily a result of overall investment in the economy it is no theory at all. This position causes Steindl to unjustifiably criticise some of Kalecki's models where the stationary state position is taken as a norm. However, in the endogenous approach replacement in the stationary state produces just enough gross profits to carry out replacement investment. Kalecki is seeking to explain why investment is greater than replacement while Steindl apparently assumes that this will normally be so, but without explaining why. In terms of the practical matter of the finance of investment Kalecki says "...the expansion of the firms depends on its accumulation of capital out of current profits." (9, p. 92) A similar confusion about the exogenous v endogenous role of technical progress can be cleared up by reviewing (9, p. 161). Similar problems over population growth as an exogenous force on investment are put to rest by Kalecki's apt phrase, "An increase in the number of paupers does not broaden the market." ibid. In sum Steindl overstates his own case for an endogenous theory of investment and overstates Kalecki's reliance on exogenous technical progress and population growth as determinants of investment.
18. The general approach used here is taken from 12, Chapt. 6.

19. Those factors are touched on in Joan Robinson's concept of the inflation barrier 14 in relation to changes in technical progress. The excess capacity proposition is analysed in Kalecki's "Class struggle and the Distribution of National Income," [10, p.156]. The classic reference is of course [4].


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CAPITALISM IN THE SECOND HALF OF THE 20TH CENTURY: SOME QUESTIONS AND FEWER ANSWERS ABOUT THE INDUCEMENT TO INVEST.

(1) In an economy in which capital is privately owned for the most part, the level of economic activity, the allocation of resources and the growth path are all determined by the inducement to invest. But what determines the inducement to invest?

(2) Neo-Classic theory, assuming that Say's Law holds, looks to an adequacy of savings and to free competition and free mobility of factors to permit substitution of factors at the margin in meeting demands indicated by the price mechanism in the market. The 'reward' of factors depends on the supply and demand for them. Imperfect competition is short-lived and likely to lead only to some imperfections in the response of supply to demand. Growth arises from exogenous technological changes. Money supply is or should be passive. The more foreign trade and international factor movements are freed, the better: national protection and forced exports are self-defeating. 'Pure' capitalism is rational and peaceful and is only distorted by irrational and atavistic political interference.

(3) Keynesian theory, rejecting Say's Law, expects liquidity preference to lead to excess savings and inadequate investment and underutilized resources, except in special circumstances (wars, gold discoveries, opening up of new lands) or where the government manages aggregate demand, home and foreign. 'Sunk' capital is not 'sallebale'. Money supply is, or should be, active. Allocation of resources and growth through technological improvements depends on expectations of profitable sales. Income distribution, national and international, depends on the bargaining strengths of the parties, in which political power is harnessed to establishing monopolistic economic positions. Cumulative causation perpetuates inequalities.

(4) Marxist theory rejects Say's Law as operating in the whole economy but assumes that, individual capitalists act in the belief that it does operate for them. Competition between capitalists establishes a 'going rate' of accumulation which drives them to invest in new technology and which determines income distribution. Excess productive capacity is typical and leads to increasing concentration and the search by individual capitalists for control over market investment opportunities and sources of inputs, with political power harnessed to these economic ends. Realisation crises have still to be overcome by destruction of capacity. Unequal development and polarisation of accumulation in the centre of industry and deprivation elsewhere, follows from the continuing competition of capitalists operating on an even bigger and wider scale.
(5) Explanations are needed of the main features of the post-war period against which each of these theories may be tested for its explanatory power.

(a) Continuous rapid growth in output per capita in all parts of the world, developed and underdeveloped, capitalist and communist, since 1945, with especially rapid increases in industrial production in Asia, (even excluding China) and in the U.S.S.R.

(b) More rapid increase in world exports since 1950 than in output, especially in manufactured exports compared to industrial output, but also in agricultural exports to agricultural output, which latter remained stagnant per capita in Asia, Africa, and South America after 1950. In these regions food output also stagnated per head of population.

(c) Widening gap between growth in agricultural output in rich and in poor countries and also in industrial output, within rich countries developing and declining regions, and in rich countries compared with Africa and South America, especially when per capita figures are taken.

(d) Decline of U.K. and rise of E.E.C. countries and Japan in relation to U.S.A. in terms of industrial output, exports and currency reserves, and even of capital exports, where the U.K. retains some of her original strength.

(e) Deterioration of terms of trade of underdeveloped countries by 1970 to pre-1930’s slump ratios after the great improvement of the 1940’s and early 1950’s; but with some recovery since 1970 from better primary product prices.

(f) Concentration of output and capital in a few very large companies based on the most advanced industrial lands but operating increasingly through cross-investment between each of these lands.

(g) Continuing inflow of investment income especially to U.S.A. and U.K. from underdeveloped lands but steady switch of new investment to other developed lands and especially to the E.E.C.

(h) Increasing share of national income passing through the hands of the state in all countries, developed and under-developed.

More recent developments

(i) Collapse of the post-war monetary system after 1968 as U.S.A. and U.K. have attempted to check payments deficits and as gold and other reserves have failed to keep up with expanding world trade, subsequent introduction of S.D.R.'s and temporary agreement on realignment of exchange rates.

(j) Increasing rate of inflation since 1959 in all developed industrial countries with much higher general level of interest rates.

(k) Much higher rates of unemployment since 1970 in U.K., U.S.A. and Canada, with widespread slowing down of growth in output in 1971-2; but some recovery expected in 1972-3 without much effect on employment.

(l) Evidence of falling rate and share of profit and increasing under-utilisation of capacity since the early 1960's.

(6) It was possible to predict (and correct predictions were made), on a  W.~5~ model, the relative increase in foreign trade, the widening gap between rich and poor countries and between agriculture and industry, the challenge of the E.E.C. and Japan to the U.S.A. the deterioration of underdeveloped countries' terms of trade, the switch of capital from poor to rich countries, the concentration of capital in large firms, the collapse of the monetary system, the development of 'stagflation' the falling rate of profit and increasing underutilisation of capacity. Use of a Keynesian model might have served almost as well, however, although it might have missed the concentration of capital, falling rate of profit and increased

share of the national product passing through the state's hands. On a Keynesian view the intervention of the state to regulate aggregate demand should not have required an increasing share of national expenditure coming under state control. Neo-Classical theory despite the self-confidence of its advocates, has to fall back on political explanations for so much irrationality and maladjustment.

(7) What adherents of both Marxian and Keynesian theory seem not to have anticipated is the continuing high level of economic growth in all parts of the world and the resilience of capitalists in the face of quite massive attacks on their confidence in the future. Both might claim that awareness of theoretical expectation
of stagnation and crisis have forced governments to step up their intervention in the economy and that continuing growth in the non-capitalist world has provided both a direct stimulus and a cause for emulation in the face of political pressures at home. Both might see in the "permanent war economy" justification for their theoretical positions.

(8) There are two crucial questions for Marxians in making predictions about the future. One in the implication of the Second Industrial Revolution involved in the widespread use of computers for the capital-labour ratio in production. Does this mean after a long-period of capital-saving innovations a major labour-saving effect such as Marx predicted in the long-run? The second is the implication of increasing centralisation of capital in giant transnational firms. Does this mean a still greater polarisation of accumulation at the centre and deprivation at the periphery? Marxists seem mainly to expect this.

A Keynesian answer to the first question might be that government action can be extended to provide public employment when and where private capital fails. Would Marxists disagree? The second question should not be answered too hastily either by the Marxists. Are there no possibilities of new centres of capitalist or non-capitalist economic development breaking free from the polarisation process, and if they do will this be wholly harmful to capitalism? Past experience would suggest that capitalist development of new centres of industry requires very specially favourable conditions (Australia, Japan, Israel) but what of non-capitalist development? Should not both Keynesians and Marxists recognise the huge potential market in communist developed lands for capitalist production (Fiat, Trident, etc)? A Keynesian view might go further and envisage that recognition by capitalist states of the danger of continued polarisation could lead to attempts being made to apply measures of demand management on a world scale (or in large 'back gardens') of the same sort that have been attempted inside developed national economies. Would Marxists rule out the possibility that transnational companies might agree sufficiently among themselves to make the attempt? One does not need to go all the way with Kautsky to see that a kind of ultra-imperialism of this sort could be an alternative to either U.S. capitalist hegemony or uncontrolled inter-capitalist state rivalry.

(9) In attempting a Marxist answer to these big questions, it is first necessary to clarify whether Marxism provides a 'breakdown' theory of capitalism or a theory of
continuous or discontinuous crisis. There is very little support in the logic of Marx’s writings or in experience since he wrote for the former interpretation. What then is the nature of the crisis? Is it a matter of falling rates and shares of profit as capital-labour ratios rise (and did Marx mean in talking about organic composition, capital-labour ratios or capital-output ratios, which have certainly been rising in the last two decades as the proportion of unutilised capacity has increased?) Is it a matter of unequal development between nation states as well as between sectors or is it a matter of the contradiction between production for exchange and the human uses for production? Marx indicated several countering forces to the tendency for a falling rate of profit, from which most Marxist theories of imperialism are derived. Keynesian measures of state induced investment are considered in the same way as only putting off the crisis. But state-induced investment can expand the utilisation of resources and maintain economic activity at higher levels without necessarily increased state borrowing or taxation. There is in any case no evidence of a rise in the national debt such as Paul Mattick suggests. Not is state spending necessarily inflationary. This is to accept a Neo-Classical view of money supply. Current inflation is the result of companies with monopolistic positions passing on their higher costs per unit of output in higher prices as installed capacity is increasingly underutilised combined together with the bidding up of interest rates as transnational companies switch funds from centre to centre and these governments to take deflationary measures, all of which in effect raise costs. Even if strong evidence appears of falling rates (and shares) of profits these cannot be wholly separated from rates of capacity utilisation and are in any case not necessarily irreversible. Current labour-saving investments may be succeeded once more by capital saving investment. Cumulative effects in regional development and underdevelopment are difficult to offset but capitalist states have had some successes with countering measures inside any one national company.

(10) Marx's abstraction of productive and non-productive labour cannot be used to imply a narrower and narrower base for the production of surplus as less and less labour in employed in producing privately distributed goods and services and more and more in producing publicly distributed goods and services. The use by Mattick of the concept of "waste" production for the latter not only offends common sense (in fact private production of motor cars is much more wasteful than public provision of health services etc) but conceals the fact that "waste" production is highly profitable to private capital (in the case of arms etc.). If productive resources can be fully used, as Mattick accepts in wartime for war purposes, it is a political
and not an economic problem for Governments to obtain support for full use of resources for other purposes. The crisis arises under managed capitalism not from the growth of a "non-productive" sector but from the concentration of capital in establishing monopolistic positions in international competition between giant companies. This leaves large areas of goods and services which are unprofitable or less profitable to produce and require state operation if they are to be supplied: state railways, education, social services etc. The extension of such state operations is resisted by individual capitalists only where the area of their operations is reduced. Capitalists as a whole may benefit from the higher level of activity and from state subsidised supplies.

(11) The problems of unequal development and of polarisation of accumulation and deprivation on a world scale are evidently less easily amenable to capitalist state management. Not only do capitalist states have to reach international agreements which may reduce individual advantages in the general interest, but they have to adhere to them or make mutually agreeable adjustments when unequal development leads to changing relative economic (and political) power. The Bretton Woods agreements reflected the hegemony of the U.S.A.; their breakdown marked the challenge to this hegemony from the E.E.C. and Japan. What is now also at risk is the continuing political strength of the nation states, acting alone or together or of the super states like the E.E.C. to manage the investment decisions of the giant accumulators of capital in the pressure of the 'going rate' of capital accumulation in the capitalist world as a whole. Transfers of income from high profit - high wage sectors to low profit - low wage sectors in a national economy are, we suggest a political rather than an economic problem. This is no less true internationally but there are no international institutions within which such decisions could be made and no international immunity from the world-wide 'going rate' of accumulation. Nothing less would be needed than that the major capitalist states should regulate internationally as they do nationally by taxation, the going rate of private capital accumulation. This is what Marxian theory would require. Keynesian theory would require rather a subvention of world demands than a regulation of the rate of accumulation.

(12) The argument so far suggests that the crisis of capitalism in Marx's thought - both the cyclical crises of destruction of capital which clears the way for new investment in a restructured and concentrated process of accumulation and the longer-term crisis of the falling rate of profit in the whole system - alike assume a
self-regulating model of capitalism. State intervention is assumed by Marx to be concerned only with the protection of property both at home and abroad. He did not envisage that short of a radical change in capital ownership, state power might be used to regulate both demand (a la Keynes) and as I am suggesting, supply also. For the central feature of the activity of the modern capitalist state is not the "fine tuning" of demand to supply, but the massive state purchases in peace as in war and the increasing state operation of a non-profit making sector that leaves profits to be made elsewhere. This is not to say that the crises of realisation of capital and of maintaining in any given firm or country the international 'going rate' of accumulation have disappeared, but only the state investment can replace or compensate for the cyclical destruction of capital and growing state expenditure can take up the labour that is "saved" by cost reducing technology. The new crises arise from the uncoordinated activities of state enterprise and private capital, the competition for scarce resources, the unequal development of capital in different states, the uncertain applications of the capital accumulation in the transnational companies, and behind all these the contradiction growing in reality and increasingly permeating man's minds, between man's almost unlimited capacity to control his environment, reaching out to the moon and the stars, and the abject conditions of destitution and ugliness, in which the majority of men and women live out their lives on earth.

(13) Decision making groups outside transnational corporations and inside state government already consult closely. As capital is more and more centralised and super states emerge this process is made easier. Some irrationality and anarchy can be avoided, but the continuing competition of capitals on an international scale lead to increased waste and misuse of resources and manipulation of demand by the supplying firms. Keynesian theory assumes that men and women will continue to be motivated primarily by the desire for money, and that this can at best be skillfully managed to evoke optimum use of resources. Marxist Theory starts from human alienation in the process of production and sees as the fundamental contradiction of capitalism its inability to meet the individual and social needs of people at the most advanced levels of technology. The conclusion for Marxists is that modern technology creates the possibilities of social capital over the productive processes as well as the necessity for such social control. State support for private
capital accumulation is double-edged; it supports, but it shows at the same time the social alternative to private ownership which needs only growing consciousness of people, that they might in fact manage their own lives, to transform it into reality. Production for use remains the objective aim of human activity; production for exchange the subjective incentive to that activity. More and more the two are at odds. Reform is not the alternative to revolution, but its precursor. The more that reforms are pressed and even accommodated with the system and fall short of the fulfillment of the expectations they reflect, the more they show the necessity and the possibility of transforming the system. In the last analysis Marxist theory is about social consciousness.

Michael Barratt Brown
In our book *British Capitalism, Workers and the Profits Squeeze* Bob Sutcliffe and I emphasised the role of capitalist competition in the present crisis. We argued that this competition has prevented capitalists in countries like the UK from passing on, in the form of higher prices, the wage increases secured by workers. This has allowed real wages to grow faster than productivity, causing the rate of exploitation and rate of profit to fall. The competition has come from capitalists in other countries facing different rates of cost increase and sometimes with little initial stake in the market concerned. Their interests have apparently best been served by not playing along with the rules of domestic oligopolistic competition, whereby all firms benefit from a tacit understanding that prices are raised to offset cost increases common to the competing firms.

Working with very aggregated figures it appears that the most competitive group of countries more or less maintained their profitability in the expansion of the late fifties and early sixties, increasing their market shares rather than profit margins. Meanwhile in the weaker countries both profit margins and market shares were ground down by the slower rate of cost increase in the strong countries. But the increasing market shares have eventually brought large revaluations in both Germany and Japan and this has hit profitability in these countries as well, while the slackening of the expansion has led to a general intensification of international competition. So international competition appears to have led to a general reduction of profitability, and not a redistribution of a relatively increasing 'world surplus value' with profitability maintained in the weak countries and increasing in the strong.

But this observation does not constitute by itself a theory of the present crisis. The development of increasing wage pressure and uneven productivity growth have themselves to be explained. This brings forward the whole question of the causes of the post-war boom. Here we stressed the importance of the very high rates of exploitation in the ex-Fascist countries after the war and John Harrison and I are exploring this in greater detail by examining profitability and accumulation at the level of individual industries since the First World War. We hope this work will at the same time shed more light on what seems to be the fundamental question of why and how the combination of wage pressure and international competition has led to the particular pattern of profitability changes that has occurred. To put it another way the crucial things to be examined are the determination of the rate of 'world inflation', given the pattern of wage and productivity increases in the different countries, and how the implied pattern of profitability reacts back on capital accumulation, productivity growth, employment and wages.

* I should like to thank Phil Armstrong and John Harrison for comments on this paper and to absolve Bob Sutcliffe from any responsibility for the opening remarks which absence abroad has prevented him seeing.
I do not believe that much is to be gained by speculating about this any more at the present time and would rather wait until it is possible to report on concrete results. But it does seem to be worthwhile arguing against one particular approach to crises which sees changes in organic composition, another manifestation of capitalist competition of course, as the real, underlying, basic cause of all capitalist crises. This seems to me to be unjustifiable theoretically as I argue below. Moreover when organic composition is measured in a rough way, and I am convinced such attempts must be made if Marxian analysis of crises is not to degenerate into sterile assertion, there is no evidence for a decisive increase in the recent period. This main part of the paper on organic composition, and the final brief section on devaluation of capital, have some bearing on the current crisis, for they provide some support for focussing on wage increases and productivity growth as the central determinants of profitability.

1) The organic Composition of Capital

It is easiest to start Marx's analysis of the composition of capital with "the relation between the mass of the means of production employed, on the one hand, and the mass of labour necessary for their employment on the other" (Capital, Vol.I p.612). Remembering that some of the means of production will last for more than one period (fixed capital) it is clear that this relation is the conventional capital/labour ratio with capital measured (somehow) in physical terms. Marx called this relation the technical composition of capital because for him labour-power was one of the parts of productive capital which the capitalist buys at the beginning of the production period; thus comparing means of production with labour was a comparison of the two component parts of capital. If the component parts of capital are compared in terms of value (the total value of the means of production divided by the total value of labour power) it is clear that this value composition is going to be closely related to the technical composition:

\[
\text{Value composition} = \frac{\text{Quantity of means of production} \times \text{unit value of means of production (vmp)}}{\text{No of workers} \times \text{Value of 1 worker's labour power for one period (vlp)}}
\]

\[
= \frac{\text{Technical Composition} \times \frac{\text{vmp}}{\text{vlp}}}{\text{v}} = \frac{c}{v}
\]

So if the ratio of the unit value of means of production to value of labour power stays constant then there will be 'strict correlation' between the two measures. To express this Marx called the value-composition "so far as it is determined by its technical composition and mirrors the changes of the latter, the organic composition of capital." (I p.612)

Marx regarded the technical composition of capital as the measure of productivity - "the degree of productivity of labour, in a given society, is expressed in the relative extent of the means of production that one labourer, during a given time, with the same tension of labour-power, turns into products" (I p.622). On the one hand the growth of materials per worker is an expression of greater productivity, whereas an increase of
of machines per man, a portion of which are turned into products each period, "is a condition of increasing productiveness of labour... But whether condition or consequence the growing extent of the means of production, as compared with the labour incorporated in them, is an expression of the growing productiveness of labour." (I p.622)

If the unit value of the means of production (labour time embodied per unit) and the value of labour power were both constant then the organic composition would rise in line with the technical composition. But, Marx says, with increasing productivity the value of means of production will fall and this will moderate the rise in organic composition: "The increase in the difference between constant and variable capital is, therefore, much less than that of the difference between the mass of the means of production into which the constant, and the mass of the labour-power into which the variable, capital is converted. The former difference increases with the latter, but in smaller degree". (I p.623)

Now the immediate thing to be noticed is that, as Marx states the argument, there is absolutely no reason why the organic composition must rise; it would be perfectly possible for the ratio of vmp/vlp to fall so fast as technical composition rose, leaving organic composition unaffected - organic composition would even fall if the ratio vmp/vlp fell faster than technical composition rose. Perhaps the most peculiar thing is that Marx seems to ignore the one factor which would clinch his argument. For if he assumed that vlp fall in line with vmp, which would follow from assumptions of constant real wages and equal productivity increases in all industries, then organic composition must rise with technical composition.

The reason why Marx did not want to assume a fall in vlp (the labour time necessary to reproduce subsistence) is that he wanted to show that the organic composition must rise even if the value of labour power and therefore the rate of exploitation s/v remained constant. That is even if real wages rose in line with productivity in the industries producing means of subsistence organic composition must fall: "owing to the distinctive methods of production developing in the capitalist system the same number of labourers i.e. the same quantity of labour power set in motion by a variable capital of a given value, operate, work up and productively consume in the time span an ever-increasing quantity of means of labour, machinery and fixed capital of all sorts, raw and auxiliary materials - and consequently a constant capital of an ever-increasing value". (III p.208) This quotation shows that Marx thought that increasing productivity means increasing value of constant capital (c) relative to labour expended (s+v); with v given this must imply a rise in organic composition (c/v). But as I have argued you cannot prove that increasing technical composition and productivity does imply a rise in the ratio c/(s+v). It all depends on the relative growth of technical composition and productivity.

There seems to be an objection to this however. If we take a case where capital is accumulating (surplus value is used to extend the value of capital) and if we assume that the labour force is constant (or that the rate of growth of means of production is greater than the rate of growth of employment) then surely c (representing surplus value accumulated as means of production) must be growing faster than (s+v) - value created which is a measure of the quantity of labour power used (not its
value). Surely the logic of capital accumulation, that is accumulation of value, will in these circumstances lead to a rise in $c/(s+v)$. To see why this is not the case, and to illustrate this whole argument about organic composition we can examine a simple model of a corn economy, and examine the effect of accumulation and productivity increase.

In the table overleaf our initial starting point has a gross output of 100 tons of corn (column 4) produced by 100 man-hours (3) and 50 tons of seed corn (1). Since net output is 50 tons, and current labour is 100 hours we know that value per ton is 2 hours (6). This gives the seed corn a value of 100 (2). The technical composition is the ratio of tons of seed corn to labour hours (7), and the ratio of dead to living labour (9) is the ratio of the value of seed corn ($c$) to current expenditure of labour ($s+v$). With wages fixed at $\frac{1}{2}$ ton per hour we have the total value of labour power ($v$) (11) as the multiple of the wage bill in corn (10) and the value per ton. Finally organic composition (12) is defined as the ratio $c/v$.

The next stage is that we assume that the 25 tons which constitutes the surplus product (gross output less seed corn and wages) is accumulated and used as seed corn in the next period. The first case we examine (II) is based on the assumption that productivity does not rise (i.e. net output is unchanged and gross output increases only by as much as the increase in seed corn). We see that the technical composition of capital (tons of seed corn per person employed) rises from 0.5 to 0.75; and since the value of constant capital rises in line with its volume (since the unit value of corn is unchanged) the ratio of dead to living labour \[c/(s+v)\] is also increased proportionately. Finally since we assume the value of labour power unchanged (which with constant productivity implies constant real wages) we also have a rise of one half in the organic composition of capital.

But it is highly implausible that productivity would not grow. In case III we assume that productivity increases in line with the increase in constant capital (by one half in fact). In III we follow through the implications of this, still valuing constant capital on the basis of situation I's values i.e. we reckon there to have been an accumulation of constant capital in terms of value of 50 (25 tons worth 2 hours per ton). If we assume constant value of labour power the fall in the value of corn implies a rise in wages; but even so technical composition, the ratio of dead to living labour, and the organic composition all behave in an identical way to case II where productivity does not increase. It appears that productivity growth has nothing to do with the question.

But the key to the solution lies in column (7). For we find that the seed corn reckoned according to current productivity represents a smaller value than when valued at the previous period's productivity as in column (1). Now it is totally inconsistent to produce a value scheme where the value of the product (250) is more than the value of the inputs, reckoned at current productivity, plus value created - thus after replacing constant capital (125) and deducting wages (50) and surplus value (50) there would still be unallocated value of 25. The reason for the inconsistency is that a value based on the old productivity level (150 seed corn) is added to new value created (100) which is operating at a higher productivity level. The same point is reflected in the fact that the value per ton
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No—must accumulate $S$

\[ \text{I.e. adjusted at old value in year 1 at new value in year 2 but none if it again} \]

\[ \text{i.e. if value stays fall, technical run at the same} \]
(1\(\frac{1}{2}\)) is greater than value created (100) divided by net output (75),
giving a value per ton of 1\(\frac{3}{4}\), which is quite obviously ridiculous.

If, however, we value the seedcorn at the current value of 1\(\frac{3}{4}\) (in III\(^2\))
we have a quite different result, for the ratio of dead to living labour
and organic composition. Since productivity has risen in line with the
mass of constant capital the value of constant capital is unaffected; so
the ratio of dead to living labour (reckoning past social labour in terms
of its current equivalent) is unchanged and, if the value of labour power
is assumed constant, so is the organic composition. But if the value of
labour power falls and real wages stay constant (at 25 tons) then the
organic composition does fall in exactly the same way as in case I; for
with vmp/vlp constant organic and technical composition move together.

Finally we take the case where productivity rises more than in propor-
tion to the rise in the mass of constant capital (IV). Reckoning constant
capital at its new value we see that its value actually falls; leading to
a fall in the ratio of dead to living labour and a fall in the organic
composition with the value of labour power given. This is despite the rise
in the technical composition. But again if we have real wages constant,
the fall of one half in the value of labour power and value of means of
production ensures that organic composition rises in line with technical
composition.

The position is certainly a bit more complicated if we take account
of different sectors producing wage goods and means of production. For
example if productivity did not increase at all in the wage goods indus-
tries (which is impossible if the value of means of production used there
falls) then the value of labour power would be constant even with real
wages constant, so that the behaviour of organic composition would depend
just on how fast the unit value of means of production fell relative to
the rise in technical composition. Basically the same type of argument
holds as in the one commodity case, so, as I have argued, Marx was wrong
to assert that the ratio of dead to living labour must rise (remembering
that this is equivalent to a rise in organic composition with the value
of labour power constant).

The next question is how to measure organic composition. Clearly it
is highly unsatisfactory to set up an analysis in terms of value, only
to admit that the trends postulated are unmeasurable (and the more the
trends are hypotheses rather than necessarily following from capitalist
development the worse it is to leave them unmeasured). Marx's belief in
rising organic composition was certainly based on observation - "The
law of the progressive increase in constant capital, in proportion to the
variable, is confirmed at every step (as already shown) by the comparative
analysis of the prices of commodities." (I p.622) And it seems sensible
to try and use some of the accumulated data of the past 100 years to test
his hypotheses about how organic composition would develop.

We must start by looking a bit more closely at exactly what the total
of dead labour is. Suppose a firm's costs each period are \(d\) depreciation
y wages (paid at the end of the period) and \(m\) raw materials paid for at
the beginning of the period. Fixed capital lasts \(n\) periods. Production
takes \(t\) periods so that by the time sales begin in the \((t+1)\)th period
after the firm begins to produce, its capital will consist of
(i) Fixed capital of \( d(n-t) \)

(ii) Stocks which cost \( (t+1)m + tv + td \) and which are in various stages of production (\( m \) for example will be raw materials just purchased).

If we work in terms of values we must take account of the surplus value \( ts \), produced by the workers during the previous \( t \) periods while working up the stocks into finished goods. It is correct to regard this as part of capital value since it is embodied in the stocks which form part of the means of production (and the capitalist has 'advanced' it in that it has not been realised in the period it was produced). So total capital value consists of \( d(n-t) \) embodied in fixed capital and \( (t+1)m + t(v+s) + td \) embodied in stocks. Of the latter \( (t+1)m \) represents straight value of materials, \( td \) represents value transferred from the fixed capital to the stocks during the labour process and \( t(v+s) \) is new value added in the firm. In total then the capital value of the firm measures the "dead" labour embodied in means of production, some of which labour is the pre-existing labour carried out in the same firm. Living labour is just \( (v+s) \).

Now consider the conventional capital output ratio in current prices - the ratio of fixed capital plus stocks to output.

\[
\frac{K}{Y} = \frac{\text{Capital at current prices}}{\text{Output at current prices}} = \frac{\text{Capital at constant prices} \times \text{Price per unit capital}}{\text{Output at constant prices} \times \text{Price per unit output}} = \frac{\text{Labour embodied in Capital} \times \text{Quantity of capital per unit labour} \times \text{Price of capital}}{\text{Labour embodied in Output} \times \text{Quantity of output per unit labour} \times \text{Price of output}}
\]

Now the quantity of capital per unit of embodied labour is just the reciprocal of value of unit capital, and similarly for output. So that what \( K/Y \) measures is in fact

\[
\frac{K}{Y} = \frac{\text{Dead labour} \times \text{Ratio of price to value of means of production}}{\text{Living labour} \times \text{Ratio of price to value of total output}}
\]

Provided there is no divergent trend in the ratios of price to value in industries producing means of production and in the rest of industry, then the \( K/Y \) will be a reasonable indicator of changes in the ratio of dead to living labour. This (as I argued earlier) Marx thought would rise and drag organic composition with it even if the value of labour power was constant.

Feinstein's figures for the ratio of net capital stock plus value of

\*C.H. Feinstein, *National Income of the U.K. 1855-1965*. Figures in Kuznets *Modern Economic Growth*, Table 2.7 for other countries in general support the conclusion for the U.K. that the ratio of dead to living labour has not risen.
stocks to net domestic product in the UK, all at current prices, shows a fall from 4.2 in 1860-65 to 2.9 in 1910-1914 to 2.6 in 1934-38 but rose slightly to 2.7 in 1960-65 (presumably the rise would have been greater had capacity utilisation been as high in 1934-38 as in 1960-65). The slightly preferable figures from the National Income Blue Book for the Company sector (i.e. excluding government and dwellings) shows an increase from 2.1 in 1958 to 2.3 in 1970, years of roughly comparable utilisation of capacity, and this confirms that the earlier downward trend has been reversed. While this has obviously made the profit rate fall a bit faster than the profit share in company value added, it is proportionately a much smaller effect than the fall in the share from 21.3% to 12.3% in 1970. Obviously more detailed work has to be done but these figures certainly do not support a dramatic increase in organic composition. The rise in labour's share will mean that the estimated ratio of dead labour to value of labour power (i.e. organic composition) actually fell from 2.7 to 2.6 between 1958 and 1970. This despite the small rise in the ratio of dead to living labour which, I have argued, is the more useful thing to measure as it abstracts from changes in the value of labour power. Of course these indicators could be misleadingly biased if the ratio of price to value was altering in a very different way in the means of production industries from elsewhere. The ratio could be rising more slowly in the means of production industries if organic composition was growing less fast there or if the rise in the value of labour power was pushing up the ratio of price to value to a greater extent in the more labour intensive consumer goods industries. It is difficult to say very much about this a priori but it at least seems reasonable to regard Marx's prediction of a rise in the ratio of dead to living labour not proven, just as the value of labour power appears to have risen rather than fallen. It is certainly hard to envisage that any very rapid changes have taken place in the post-war period on a scale liable to precipitate a profitability crisis.

Marx wanted to use the rising organic composition of capital to argue that if the rate of exploitation remained constant, the rate of profit would fall. Assuming unit turnover time we have \( s/(c+v) = s/v \times v/(c+v) \); clearly if the organic composition \((c/v)\) rose \(v/(c+v)\) would fall and the rate of profit would fall alongside it provided \(s/v\) was constant. But since constant \(s/v\) implies that the organic composition and the ratio of dead to living labour move identically, Marx's result requires that the ratio of dead to living labour must rise and I have argued that accumulation and productivity growth do not necessarily imply this. Marx wanted also to argue that the rate of profit would eventually fall, provided organic composition increased, even if the rate of exploitation rose; this is not obvious from the above formulation since it appears that \(s/v\) (which can tend to infinity) can always rise enough to offset a fall in \(v/(v+c)\) (which Marx believed would tend to zero). But Marx was right as can be seen if the rate of profit is rewritten as follows:

\[
\frac{s}{c+v} = \frac{s}{s+v} \cdot \frac{s+v}{c} \cdot \frac{c}{c+v}
\]

*Constant \(s/v\) implies constant \(v/(s+v)\); since the ratio of dead to living labour \((c/(s+v))\) equals organic composition \((c/v)\) times \((v/(s+v))\), if \(v/(s+v)\) is constant the ratio of dead to living labour and organic composition move together,
Provided there is a continuous fall in \((s+v)/(c)\) - the ratio of living to dead labour - then eventually the tendency for the rate of profit to fall must assert itself - for \(s/(s+v)\) and \(c/(c+v)\) can only rise within definite limits as they cannot exceed one. (Take the case of \(v=1, s=1\) and \(c=2\); the rate of profit is 20% once the ratio of dead to living labour reaches 5 - implying \(c=5\) - the rate of profit must fall below 20% even if the value of labour power is tending to zero). What this is saying is that if the ratio of dead to living labour rises continuously eventually the organic composition must rise so much that \(v/(c+v)\) falls faster than \(s/v\) rises, so that the rate of profit must fall. But the argument of course still depends on the rise in the ratio of dead to living labour which is not the inevitable result of accumulation as Marx seemed to assume.

A final point concerns the possibility that the actual trend in the ratio of dead to living labour is masked, when looking at the capital output ratio, by rises in the ratio of price to value of consumer goods greater than that in means of production industries. It should be noted that, with wages spent on consumer goods, and profits mainly on means of production, such a development would also mean that the ratio of wages to profits would also rise relative to the ratio of the value of labour power to surplus value. So the conventional measure of the rate of profit

\[
\frac{p}{k} = \frac{p}{p+w} \frac{p+w}{k}
\]

would show a trend which was biased downwards (relative to measuring it in value terms) because of the fall in \(P/(P+W)\) relative to \(s/(s+v)\) and biased upwards because of the rise in \((P+W)/K\) relative to \((s+v)/(c+v)\). In the case where all profits are spent on means of production these two biases cancel out and the measure of the rate of profit in price terms is equal to that in value terms. But the rate of profit is a price concept, which may be more or less approximated by \(s/(c+v)\); obviously as far as the rate of profit affects the incentive to invest it is the price concept, actually perceived by capitalists, which is relevant. Moreover the actual money rate of profit is the measure of maximum potential accumulation, for \(s/(c+v)\) is equal to it only when all profits are invested. (Unlike the money rate of profit \(s/(c+v)\) is affected by accumulation because a different proportion of surplus accumulated means a different pattern of industries with a different average organic composition, and thus \(c+v\), though the same \(s\)). For most purposes, then, the money rate of profit is the variable to concentrate on and to attempt to measure as precisely as possible.

2) Depreciation of Capital

During a crisis one way in which profitability can be restored is by reducing the value of (a physical unit of) constant capital. This could happen through technical progress in industries making means of production but during a crisis it is more likely that this will come about in the short-run through a process of rationalisation in those industries

\*With stocks included in \(K\) the wage bill is included with appropriate turnover time as it is reflected in the value of finished goods and work in progress. The value expressions are for simplicity written assuming unit turnover times.
leading to higher productivity and so lower value per unit of output. Marx emphasised this 'depreciation' of constant capital, not only as an offset to the tendency of falling rate of profit which would otherwise be caused by rising technical composition, but also specifically in the context of restoring profitability during a crisis - "ultimately, the depreciation of the elements of constant capital would itself tend to raise the rate of profit" (III p.250).

Now the important effect of such a depreciation due to productivity increases is not that the value of the existing stock of means of production is reduced, but rather that the value embodied in reproducing these means of production is diminished. It becomes profitable not only to continue using the existing stock but also to replace them when worn out (i.e. reproduce them) and (if demand conditions are right) to extend production. The point is that it is profitable to use existing fixed capital provided receipts exceed direct costs (materials plus labour) i.e. provided anything is earned towards depreciation and profits. So nothing that happens to the value of existing capital can have any bearing on whether it is profitable to continue using it (except inasmuch as the machines are made totally obsolescent which is not the question here). But it is only profitable to replace fixed capital if receipts exceed direct costs plus depreciation plus the general rate of profit on the capital laid out. Anything which reduces the value of the fixed capital of a particular type (i.e. reduces the socially necessary labour required to produce it) increases the profitability of using this equipment by reducing depreciation and the mass of profits which must be received to secure the given general rate of profit.

It is sometimes alleged that a crisis involves a different sort of depreciation resulting, not from increased productivity, but rather from some type of marking down of the value of existing capital. Now to the extent that some means of production are just left to rust this clearly does not increase the profitability of production with any other part of the capital stock. Only if the process of discarding them coincides with rationalisation and productivity increase does it improve the possibilities of profitable production. But what if means of production are sold off at bargain prices? The argument used above still holds. Once means of production exist it is worthwhile using them if receipts exceed direct costs. Selling them off to somebody else, even at a fraction of their original cost, will not make their use more profitable, unless the buyer uses them more productively.

The only way in which mere transfer of ownership can make employment of these means of production profitable is if the original firm is forced into bankruptcy by its creditors to whom it is unable to pay interest or repay past borrowings. Bankruptcy 'releases' the physical means of production from their original pattern of financial ownership. Under this pattern the use of these assets was deemed unprofitable, even if they are earning something in excess of direct costs provided the excess is less than that owed to creditors. When the creditors force the firm into bankruptcy they are capitalising their losses by selling the firm at what they can get for it, which in perfect markets would be the capitalised sum of the excess of receipts over direct costs. This selling price will certainly be less than the book value of the assets and could therefore be called depreciation of capital [But not 'devaluation' for this would
equate value with the bourgeois notion of what something sells at, rather than the Marxian notion of social labour time incorporated in it; Marx himself was slipshod in this respect when he talked of the depreciation of 'that portion of the value of capital which exists only in the form of claims on prospective shares of the surplus value' (III p. 249).

So the buyer of the means of production can commence production, whereas the original firm was prevented by its creditors from keeping production going. It is just a matter of the structure of financial ownership, for if all the capital of the original firm had been supplied by shareholders, rather than some being borrowed, then the bankruptcy would not have taken place and the change in ownership would not have been necessary. But the crucial point is that if this is all that happens nothing has occurred to increase the profitability of reproducing, i.e. replacing, the capital; let alone of extending it. For the profitability of reproducing the capital to be increased there must be some increase in productivity which lowers the value of the type of equipment or fall in real wages. Of course the new owner may use the means of production more profitably because he is more efficient, or he may be able to use the bankruptcy as a way of forcing down real wages, but this has nothing to do with the depreciation of constant capital per se.
In *Capital*, vol.I, Marx is concerned with the rate of surplus-value, \(S/V\), rather than with the rate of profit, \(r\). He argues, correctly, that the rate of surplus-value depends on the bundle of commodities making up the real wage and on labour productivity in the production of those commodities; \(^{(2)}\) labour productivity in the production of other commodities has no influence on \(S/V\). In vol.III, part II, however, Marx discusses the rate of profit and prices of production and concludes that the profit rate depends not only on the factors influencing \(S/V\) but also on other factors. We shall argue, first, that there is a logical inconsistency in Marx's treatment of the rate of profit, and, secondly, that when that inconsistency is removed \(r'\) is seen, subject to an important qualification, to depend on the same factors as \(S/V\) and on no others. We shall ignore rent and assume that all capital, constant and variable, is circulating capital. This is not, of course, because fixed capital and rent are unimportant; we make these assumptions merely in order to present our argument in as simple a form as possible.

**Marx's Argument**

In *Capital*, vol.III, part II, Marx determines \(r\) as
\[
 r = \frac{S}{C+V}
\]
where \(S\), \(C\) and \(V\) are aggregate surplus value, constant capital and variable capital respectively. Taking \(r\) to be so determined he then shows that, in general, prices of production diverge from values. Now this argument is internally inconsistent, for if prices of production diverge from values then \(\frac{S}{C+V}\) will, in general, not equal the ratio of money profits to money capital which the rate of profit must equal. Hence, in general, the rate of profit cannot equal \(\frac{S}{C+V}\). It must be noted that this argument has nothing to do with the fact that
Marx did not "transform" the values of inputs into prices of production; even when we do so "transform" them, as Marx realized that we must, the fact remains that, in general, \( \frac{S}{C+V} \) cannot be equal to the rate of profit.

An Alternative Argument

Suppose that there are \( n \) commodities. Let \( p_i \) be the labour commanded by commodity \( i \) and \( r \) be the annual rate of profit. The real wage paid to the workers is the bundle of commodities \( (W_1, W_2, \ldots, W_n) \), where many \( W_i \) will of course be zero. Let \( L \) be total employment in the economy and \( l_{it} \) be the labour exerted \( t \) years in advance in the production of commodity \( i \).

We now have \( n \) "labour commanded" relations (one for each commodity),

\[
\begin{align*}
p_1 &= l_{11}(1+r) + l_{12}(1+r)^2 + l_{13}(1+r)^3 + \cdots \\
& \quad \vdots \\
p_n &= l_{n1}(1+r) + l_{n2}(1+r)^2 + \cdots
\end{align*}
\]

(1)

and one further relation stating that the wage bundle "commands" the total live labour,

\[
L = p_1 W_1 + p_2 W_2 + \cdots + p_n W_n
\]

(2)

If we now use (1) to eliminate the \( p_i \) from (2) we obtain, on collecting together the terms in \((1+r)\), \((1+r)^2\), etc.,

\[
L = (l_{11} W_1 + \cdots + l_{n1} W_n)(1+r) + (l_{12} W_1 + \cdots + l_{n2} W_n)(1+r)^2 \\
\quad + \cdots
\]

(3)

or

\[
L = L_1(1+r) + L_2(1+r)^2 + L_3(1+r)^3 + \cdots
\]

(4)

where \( L_1, L_2, \) etc. are defined in an obvious way. Note that (4) is of the same form as (1); the only difference is that in (1) each
equation refers to a single commodity, whereas (4) refers to a composite commodity, the wage bundle.

We may now note the following points.

(i) Relation (4) determines \( r \) in terms of known quantities of labour.

(ii) It follows from (4), or more obviously from (3), that, other things being equal, an increase in any element of the wage bundle, \( W_i \), will lower \( r \).

(iii) \( r \) depends on the production conditions of commodity \( i \) (\( k_{i1}, k_{i2}, \ldots \)) if, and only if, commodity \( i \) enters the real wage bundle. The conditions of production of non-wage commodities are totally irrelevant to the determination of \( r \). \( r \) depends only on the wage bundle and on the technical conditions of its production, i.e. on the same factors as \( (S/V) \) depends on, (5) subject to the qualification that while \( (S/V) \) depends only on the total amount of labour embodied in each wage commodity, \( r \) depends also on the "time pattern" of labour inputs into wage commodities. It was the importance of the time pattern to which Marx correctly drew attention, in an inadequate way (see below), by his stress on the importance of the composition of capital, \( (C/V) \).

(iv) \( r \) being determined by (4), (1) then determines the labour commanded by every commodity (and hence prices of production in any standard of exchange value), again in terms of known quantities of labour.

Some Further Points

(i) In (4) it will be clear that, in Marx's symbols, \( L = V+S \) and \( L_1 + L_2 + \ldots = V \). Thus, if we define \( e = (S/V) \) and \( \lambda_1 = (L_1/V) \), we can divide through (4) by \( V \) to obtain

\[
(1+e) = \lambda_1(1+r) + \lambda_2(1+r)^2 + \ldots \quad (5)
\]
where \((\lambda_1 + \lambda_2 + \ldots) = 1\).

In (5), \(e\) is the rate of surplus value and the relative sizes of the various \(\lambda_i\) show the time pattern of labour input into the production of the wage bundle. Note that \(r\) is positive if and only if \(e\) is positive.

Marx correctly criticised Ricardo for ignoring constant capital which, in terms of (5), means setting \(\lambda_1 = 1, \lambda_2 = \lambda_3 = \ldots = 0\), and obtaining \(r = e\). More generally, \(r\) depends not only on \(e\) but also on \(\lambda_1, \lambda_2, \ldots\). However, Marx was incorrect in trying to determine \(r\) as

\[
\left(\frac{S}{C+V}\right) = \left[\frac{e}{1 + (C/V)}\right]
\]

and this for two reasons.

First, Marx's \(C\) depends on the output going to capitalists and on the methods of production of non-wage commodities, neither of these factors being really relevant to the determination of \(r\). Secondly, even if \(C\) could be modified to deal with the first objection \((C/V)\) would nevertheless be an inadequate indicator of the time pattern of production; to determine \(r\) we need to know \(\lambda_1, \lambda_2 \ldots\) in full detail and no summary measure of this time pattern will suffice.

(ii) In *Capital, vol. III* ([1], p.157) Marx states that prices of production depend on the general rate of profit and seems to suggest that this general rate has to be deduced directly from quantities of labour. "Without such deduction the general rate of profit (and consequently the price of production of commodities) remains a vague and senseless conception." If the implication is that relating prices to \(r\) and \(r\) to prices would merely produce a vicious circle then Marx would seem to be wrong. We have not deduced \(r\) from quantities of labour, independently of prices, but we have nonetheless determined \(r\) and prices of production.
(iii) Suppose that, as above, \( L, (W_1, \ldots, W_n) \) and all production methods, are given. Then \( V, S, r \) and prices of production are determined.

a) \( C \) is not determined yet for it depends on the pattern of output going to the capitalists - this shows immediately that, in general, \( \frac{S}{C+V} \) cannot equal \( r \). It can be shown, however, that there will be one and only one pattern of output going to the capitalists which is such that \( \frac{S}{C+V} = r \). Thus \( r = \frac{S}{C+V} \) is possible but only by a fluke.

b) Total Profit, in terms of any given standard of exchange value, is not yet determined because it depends on the pattern of output going to capitalists. It follows immediately that, in general, total profit does not equal total surplus value, \( S \). In the same way the total price of output, net or gross, cannot, in general, equal the corresponding value. Of course, we can always choose a standard to create one of these three price/value equalities but then the other two will still not hold.

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Ian Steedman

Notes

(1) While the argument of this paper draws heavily on P. Garegnani, Il Capitale nelle Teorie della Distribuzione, Milano, 1960 I am, of course, responsible for what follows.

(2) Marx also pays considerable attention to the length of the working day but to do so here would merely complicate the analysis while adding little.

(3) This approach would seem to be preferable to that of Sweezy ([3], chap. VII) who, by assuming an equal organic composition for commodities within each of his three sectors
effectively assumes that there are only three commodities and thus, in particular, that a single capital good serves as the produced means of production in each sector. Note also that Sweezy introduces the conditions of reproduction into his analysis when they are, in fact, essentially irrelevant to the problem at hand.

(4) It is, of course, only because we have ignored fixed capital that we are able to represent the production of a commodity in terms of a series of labour inputs; see Sraffa ([2], chaps. VI, IX). Note also that it is implicit in equations (1) that wages are not zero.

(5) C.f. Sweezy ([3], pp. 123-4) who points out that this "result is in accord with Ricardo's theory of profits and Marx's criticism of Ricardo on this score was unjustified."

References

A FEW NOTES ON SOME TROUBLES WE HAVE HAD WITH THE MARXIST EDUCATION COURSE AT S.O.A.S.

Tim Putnam

During the 1971-72 session a committee of the Left Group at the School of Oriental and African Studies in London drew up the syllabus for this course in response to a demand for a foundation in historical materialism with special reference to colonialism and imperialism. The syllabus was divided into three parts: an introductory section dealing with Theory and Practice, Historical Materialism and the concept of Mode of Production, Forces of Production, Relations of Production and their characteristics; a longer second section basically working through Volume I of Capital in the order of Marx's table of contents, but selecting short excerpts on each topic in conjunction with supplementary readings; and a concluding section of meetings on various aspects of Colonialism and Imperialism, for which reading lists have not been worked out. Quite a bit of attention was paid to making the essential readings for each section short, which has the advantage of making people believe that the course is actually possible for them to work into their schedules, but which places a heavy burden on those in the course with greater experience to make the links between, and set the context for the excerpts.

When the course was announced at the beginning of this session, it drew more than twice as many participants as had been anticipated: a dozen graduate students and half a dozen each of lecturers, undergraduates and 'outsiders', and has continued to draw 25-30 people to each meeting despite the very considerable difficulties we have encountered. These difficulties are a compound of the very real difficulty of the subject matter, the problem about the syllabus mentioned above, and the difficulty of developing our work without a common political practice, and are probably more or less universal obstacles to successful Marxist education courses. Our particular compound of troubles has been largely shaped by the extraordinary diversity of the group, not only in occupation, but in type and sophistication of political experience and acquaintance with Marxist theory. This diversity has been an armament against superficiality and dogmatism, but it has made it more difficult, at least immediately, to develop a related political practice, in the absence of which the course lacks an object. As a result of this lack of object, the initial course sessions have been unable to carry the heavy burden of relating the readings on each 'topic', never mind setting the context for the 'topics'.

The sessions have fallen increasingly into a pattern of competing discussions among groups of the 'initiated' about real and difficult problems raised by the readings,
while the less initiated have become spectators. In the fifth meeting there was an explosion of discontent about the failure of people to make themselves clear, and of others to ask questions about things they didn't understand, criticisms about the lack of order and coherence in the discussions, about the failure of the syllabus to deal directly with such important problems as 'empiricism', the failure of the course to bring to the fore what distinguishes Marxism from bourgeois social science, the futility of a course in Marxism without an orienting political or ideological practice. Out of the subsequent discussion we have decided to break up into four small reading groups, one of which is going to start with Hegel and Feuerbach, one of which is beginning the reading list over again, and two of which are going to try and develop a conception of what distinguishes Marxism from bourgeois social science - starting with a discussion of what has brought us to the course, our particular struggles in the bog of our work and our need for theory, - and then go on to select orienting readings and proceed to Volume I. All groups are going to report back to the whole group on their progress.

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WOMEN AND ECONOMICS

Jean Gardiner and Maureen Mackintosh

We are both women economists who are involved in the women's movement, and we have separately and recently together been working on aspects of the political economy of women. We have both at some time felt somewhat isolated, and therefore think that it would be very good if there could be more exchange of views and information between women working in different parts of the country. There will be a meeting at the C.S.E. conference on December 9th (5.30pm) in London for women to meet each other and talk about their work; do come if you are interested, whether or not you are working on women's issues at the moment. We would also like to hear from women who will not be at the conference; our addresses are:

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A three-day seminar took place on October 26th-28th 1972 in Brighton, on the subject 'International Firms and Imperialism Today', under the auspices of the C.S.E. Whereas most meetings of this kind consist of 'finished' papers being presented, this was deliberately designed as a 'work-in-progress' seminar in which comrades presented interim reports for critical discussion, so that there could be more immediate and useful feedback. In addition, it was very much a 'producer' meeting: almost all the 20 or so participants are currently engaged in work in the area.

A total of 9 papers were presented. We began with two more general papers, from Hugo Radice and Nicola Acocella, which examined alternative approaches, bourgeois and Marxist, to international firms. Next came papers from Robin Murray and Steve Merrett on international firms and underdevelopment; two on the car industry, from Heindert Fennema examining international interlocking directorates, and from Rhys Jenkins on the international structure and the industry in Latin America; and a paper from David Yaffe on the role of foreign technology suppliers in Soviet industrialization. Finally, the session on the third day considered the relation between capital and the state in the advanced countries, with a paper from Don Wells on the politics of U.S. industrial dominance in Canada, and from Ed Sciberras on the electronics industry in Europe.

A most important general point kept emerging in the discussion: that most analysis of international firms, including 'critical' work, is oriented towards the sphere of circulation (e.g. market structures) rather than the sphere of production, while a Marxist approach should consider both. Further, there was agreement that the international firm had to be seen as a particular form of certain underlying forces to be understood in the theory of imperialism: bourgeois analyses fail to go behind the institutional form in any but a piecemeal manner. What was badly needed was adequate analysis at a level between the very general (international operation of the law of value, emergence of finance capital, etc.) and the concrete (managerial structures, size and nature of capital flows, mechanisms of profit-taking, etc.). Only in this way could we begin to generate a body of analysis which could be linked to a meaningful political practice against world imperialism. In addition to these more general questions, there was a great deal of exchange of information and ideas on specific issues.

Because it was loosely structured and small in size, the seminar tended to ramble about the subject, which some found annoying; but all agreed that it was very worthwhile. We hope that some of the work being done will eventually find its way into future issues of the Bulletin; and we will also be holding a follow-up meeting next year at which finished work will be presented in a more formal manner.