



**Marx's Theory  
of Crisis and  
Its Critics**

**Chris Harman**

*Ross Collection*



Chris Harman

## Marx's theory of crisis and its critics [1]

(Winter 1981)

---

From **International Socialism** [2:11](#), Winter 1981, pp. 30–71.  
Transcribed & marked up by [Einde O'Callaghan](#) for the **Marxists'**  
**Internet Archive**.

---

*This is the second part of an article on  
locating the crisis. The first part, [Theories of  
the crisis](#), appeared in **IS 2:9**, Summer 1980*

In the first part of this article [\[2\]](#) I looked at various current theories of the series of crises that have been plaguing world capitalism over the last decade. I argued that all of these were deficient in one way or another, mainly because they saw effects as causes. Theories of wage push, government expenditure, long waves, the crisis of US hegemony, or monopoly and stagnation; all failed to explain why the world system could not deal today with problems it coped with quite adequately for the best part of 25 years. Each

presupposed that some other factor was pushing the world system to stagnation and crisis, which in turn produced the features it dwelt on.

Here I want to look at a quite different explanation – that which Marx presented a hundred years and more ago in order to justify his contention that capitalism as a system is built upon contradictions that ‘lead to explosions, cataclysms, crises’ which ‘regularly recurring lead to their repetition on a higher scale. [3] The more this system developed, Marx insisted, the more unemployment and pauperism would grow. [4] ‘The greater the social wealth, the functioning of capital, the extent and energy of its growth ... the greater is the industrial reserve army ... The greater is official pauperism. *This is the absolute general law of capitalist accumulation.*’ (Marx’s emphasis) [5]

Marx’s picture is of a system which is marked by deeper slumps, interspersed with ever shorter periods of boom, unable to cope with the amount of wealth that could potentially be turned out by the productive apparatus. He sees the owners of capital as being driven on the one hand to ever more grandiose plans for expanding the scale of industry’s output through massive investments, but on the other ever more timorous about taking the risks involved. As a result the course of economic development becomes ever more tumultuous as short bursts of expansion give way to long spells of stagnation in which vast chunks of productive capacity just cannot be employed. It is this, Marx contends, that damns capitalism as a mode of production to historic doom in the same way that ‘the guild system, serfdom and slavery’ were doomed before it. [6]

Just as societies based on these mechanisms for producing wealth had entered into irreversible decline after a period in which they flourished, so Marx saw capitalism

too would enter into such a period. Indeed, by the time Engels wrote the preface to the English edition of **Capital One** in 1886, he felt able to conclude:

The decennial cycle of stagnation, prosperity, overproduction and crisis, ever-recurrent from 1825 to 1867, seems indeed to have run its course; only to land us in the slough of despond of permanent and chronic depression. The sighed for period of prosperity will not come; as often as we seem to perceive its heralding symptoms, so often do they again vanish in the air.’ (**Capital One**, p. 6)

Engels was, of course, to be proved mistaken, just as Marx and he had been mistaken in 1857–8. In a similar way, later thinkers who thought they saw the ‘final crisis’ with the great slump of the 1930s were to discover they were wrong; and so it is hardly surprising that the failure of the prophecies of orthodox Marxists led to a tendency even among their followers to reject the fundamentals of the theoretical analysis of capitalism made by Marx. Sometimes this took the form of openly revising Marx’s model of capitalism by rejecting one or other of the ‘laws’ he saw as fundamental to the system; just as often it took – and takes – the form of verbal acceptance of Marx’s method of analysis combined with the throwing in of so many riders (in the form of ‘countervailing factors’) as to mean that the analysis tells us nothing about the real world.

Yet we are now once again in a period in which the symptoms of Marx’s ‘final crisis’ seem to be present. All the phenomena which Marx pointed to are referred to daily in the media – rising levels of unemployment internationally,

seeming irreversible trends towards economic stagnation, frenetic but very short lived speculative booms followed by ever deeper recessions, secular declines in profit rates, a general feeling that something has gone wrong with the dynamo of the system. Is this merely another illusion? Or is it indeed the vindication of Marx's analysis?

The contention of this article is that the present period of deepening crisis can be seen as flowing from Marx's basic model of capitalism. It is therefore wrong to reject the fundamentals of that analysis (as most of the theorists referred to in my *Theories of the Crisis* have done). But it is also wrong merely to throw all sorts of addendums on to Marx's account so as to deprive it of any explanatory power. Instead, the amendments that have to be made to Marx's account to explain the course of the system since his time have to show how the system itself produces 'countervailing factors' at certain stages in its development – and ceases to produce these factors at later stages. Only on this basis can we see why capitalism could enjoy long spells of prosperity – especially in the 1950s and 1960s – yet also enter long periods of stagnation and crisis in the 1880s, the 1930s and again in the last decade.

### **The tendency of the rate of profit to fall**

At the very centre of Marx's account of the crisis-prone nature of capitalism stands his 'law of the tendency of the rate of profit to fall' (for the sake of brevity referred to from now on as the 'falling rate of profit').

The centrality of the law is often denied by latter day Marxists. It has been fashionable of late to argue that there

are ‘several’ theories of crisis in Marx, of which the ‘falling rate of profit’ is only one. [7] Many Marxists reject the ‘falling rate’ entirely. [8] Others accept it, but in a way that seems to deny it of any force, saying that it should be called ‘the law of the tendency of the rate of profit to fall and its countervailing tendencies’. [9] Now, it is true that the theory of the ‘falling rate of profit’ does not stand alone in **Capital**. It is complemented by a view of how other factors interact to give rise to periodic crises – the role of credit and money, the necessary disproportions between different sectors of production, the lifetime of fixed capital, the low level of consumption of the masses. But it is his belief in the ‘falling rate of profit’ that enables Marx to assert that capitalism is doomed by the very forces of production unleashed by it: The other factors causing crisis could come and go. But ‘The rate of self-expansion of capitalism, or the rate of profit, being the goal of capitalist production, its fall ... appears as a threat to the capitalist production process.’ (**Capital Three**, pp. 236–7). It showed that ‘the real barrier of capitalist production is capital itself (**Capital Three**, p. 245).

This was why, Marx noted, that those economists before him who had observed falling profit rates had viewed them with horror. For it created the ‘feeling that the capitalist mode of production meets in the development of the productive forces a barrier which has nothing to do with the production of wealth as such’ which ‘testifies to the merely historical, transitory character of the capitalist mode of production’ and to the way ‘at a certain stage it conflicts with its own further development’. (**Capital Three**, p. 237)

The claim, then, that there was a ‘law’ of the falling rate of profit was not just one more element in Marx’ account of capitalism. It was central to his contention that capitalism was a doomed system. It tied his analysis of the economic mechanisms of capitalism into his general historical account

of successive modes of production. And it showed the impossibility of any tinkering with the system, any self regulation by capitalists being able to ward off crises, since self regulation was bound to break down when the rate of profit fell below a certain point and replaced 'the operating fraternity of the capitalist class' (**Capital Three**, p. 248) by a bitter mutual struggle for survival.

### **The law itself**

Marx argues that the very process of capital accumulation involves a growth in the ratio of dead labour (means and materials of production) to living labour (workers). 'It is a law of capitalist production that its development is attended by a relative decrease in the variable in relation to constant capital and consequently to the total capital set in motion ... This is just another way of saying that owing to the distinctive methods of production developing in the capitalist system, the same number of labourers, ie the same quantity of labour power operate, work up and productively consume in a given time span an ever-increasing quantity of means of labour, machinery and fixed capital of all sorts – and consequently a constant capital of an ever-increasing value.' [10]

This is an expression of 'the progressive development of the social productivity of labour' – i.e. of the fact that the same number of workers turn out an ever greater number of goods.

‘The growing extent of the means of production as compared with the labour power incorporated with them, is an expression of the growing productiveness of labour. The increase of the latter appears, therefore, in the diminution of the subjective factor of the labour process as compared to the objective factor ...

‘This change in the technical composition of capital is reflected again in its value composition, by the increase of the constant constituent of capital at the expense of the variable constituent ... This law of the progressive increase in the constant capital, in proportion to the variable, is confirmed by every step ...’ (**Capital One**, p. 622).

So the level of investment in means of production must grow, for Marx, much more quickly than the number of workers who will be taken on to work those means of production.

Marx called the ratio of the physical extent of the means of production to the amount of labour power employed on them the ‘technical composition of capital’, and the ratio of value of the means of production to the value of the labour power employed the ‘organic composition’. [11] The growth of the technical composition of capital takes place as the same amount of labour moves larger means of production and more material of production. So an ever greater investment in means of production – and therefore in total capital – is needed to employ the same amount of labour power.

But, however much competition may compel the individual capitalist to take part in this process, from the point of view of the capitalist class as a whole it is disastrous. Capitalists measure the success or failure of their undertakings in terms not of the total profit they bring in



(what Marx calls the '*mass of profit*') but in terms of the profit per unit of investment, the *rate of profit*.

The source of profit is the surplus value created by the exploitation of living labour. The mass of profit is a function of the amount of labour power (i.e. the number of workers employed). [12] But, if the level of investment in labour (variable capital) rises more slowly than the total investment, the source of profit also rises more slowly than the total investment. The profit per unit investment, the rate of profit, must tend to fall. [13]

### **The falling rate and the course of capitalist development**

If the tendency for the rate of profit to fall exists as Marx thought it did, then it does fill in many of the holes in the various arguments we dealt with in my *Theories of the Crisis*. It would, for example, explain why the system could tolerate rising real wages at one stage in its development but find them too much for it at a later stage: with the lower average rate of profit, any rise in real wages would tend to force the least efficient firms into bankruptcy. The same goes for the cost of public expenditure, for the failure of new areas of investment to compensate in recent years for the 'crisis' of hegemony of US capitalism, or for the inability of Keynesian methods to be able to smooth out booms and slumps any longer; with a falling rate of profit, all these other difficulties would seem likely to follow.

But three sets of problems arise if you attempt to read Marx's claimed tendency of the rate of profit to fall directly into the empirical occurrence of crises. First, some very important crises (especially that of 1929 and after) have not followed immediately from some fall in average profit rates. [14] Second, if the 'falling rate' does express itself inexorably, then it is difficult to see how capitalism has escaped from being in permanent crisis since the 1880s [15]; it is true that Marx talked of 'countervailing tendencies' to it, but he hardly believed they could prolong the rapid expansion of the system by more than a century.

Third, empirical studies indicate that the factor producing falling profit rates cited by Marx – the rising organic composition – stopped operating for Britain at about the time when Marx laid down his pen, and for the US by the 1920s. We will look more closely at this empirical material later. But for Britain, the bourgeois statistician Colin Clark has provided figures that show a rise in the capital-output ratio [16] in the period up to the 1880s, then a slight fall, rising again in the decade up to World War One to a little above the figure for the early 1880s, but then declining again. [17] For the US a number of estimates arrive at fairly similar pictures – a rise in the organic composition (or the capital-output ratio) until the 1920s, but then for the tendency to peter out [18] and the organic composition to fall. As an outspoken opponent of the 'law' puts it: 'Most of the figures show a rise up to about the year 1920 and a fall after that date'. [19]

We can ignore, for the time being, calculations for more recent periods – except to note that some seem to indicate a renewed rise in the organic composition in the last 10-15 years.

The important point is that failure for a long period for the organic composition to rise, as Marx predicted,

necessarily caused some questioning of Marx's arguments – and in the case of some Marxists, wholesale rejection of them.

As has been mentioned above, Marx himself listed 'countervailing tendencies' that could, on occasions, offset the downward fall of the rate of profit. Faced with any of the problems referred to (crises not preceded by falling profits, periods free of major crises, periods of stagnation or decline in the organic composition) it has been easy for critics of Marx's 'law' to insist that the counter-tendencies can, in fact, make the law itself into a nullity.

If Marx's 'law' is to be any use in explaining the present period, it has to be able to face up to the objections and to the empirical material. It can do so. But only if certain 'countervailing tendencies' are seen as *built into the structure* of capitalism for a certain period in its development and not just as afterthoughts, (as Marx himself, unfortunately, tended to present them) can it be seen how they have ceased to operate at other periods.

To do this, we will have to look at the main counter-arguments and countervailing tendencies.

### **Dead labour, living labour and technical progress**

It has been argued against Marx that increases in productivity are often brought about by innovations in techniques that are in fact 'capital-saving' rather than labour saving. So, for example, the American radical economist Eric Olin Wright has recently claimed that:

'Neither the empirical demonstration nor the theoretical arguments raised in its (i.e. the rising organic composition of

capital's – *CH*) support have been very convincing ...

‘For the value of the constant capital to rise, there must be a net excess of labour saving technical innovations over constant capital saving innovations ...

‘In a competitive struggle, it does not matter whether costs are cut by savings on labour or savings on capital ...

‘In fact several plausible arguments can be made that suggest in advanced capitalist economies, there should be a tendency for a relative increase to occur in selective pressures for capital saving over labour-saving technical innovations ...’ [20]

Marx himself refers to ‘a few cases’ in which increased productivity is *not* accompanied by a rising organic composition (**Capital Three**, p. 222), without explaining why there should only be *a few* such cases, and again suggests that one of the ‘countervailing tendencies’ is that: ‘New lines of production are opened up, especially for the production of luxuries, and it is these that take as their basis ... relative over population ... These new lines start out predominantly with living labour ...’ But he does not explain why capitalism cannot be continually entering into ‘new lines’ based upon labour intensive innovations, so permanently countering the tendency of the rate of profit to fall.

It is not possible to defend Marx’s main contention that capital accumulation must be capital intensive merely by asserting the fact. [21] But there exists in Marx’s writing the outlines of a watertight explanation that can easily be filled out.

The first part of the explanation flows from the very way in which capital accumulation proceeds. With each round of production new surplus value is produced. The individual capitals which own this surplus value are forced by competition (other things being equal) to plough as much as possible of it into the expansion of production in the next round.

‘All methods for raising the social productive power of labour ... are at the same time methods for the increased production of surplus-value or surplus product, which in its turn is the formative element in accumulation ... The continual re-transformation of surplus value into capital now appears in the shape of the increasing magnitude of the capital that enters into the process of production. This in turn is the basis of an extended scale of production, of the methods for raising the productive power of labour and of accelerated production of surplus value ...’ (**Capital One**, p. 624)

Or, as Marx puts it in the **Grundrisse** (pp.750–51) ‘productively employed capital is always replaced doubly’ – it transmits its own value to the commodities produced and it involves the creation by workers of additional surplus value that finds embodiment in those commodities.

In a ‘pure capitalist system’ (one in which there were only workers and capitalists, all other classes having been destroyed, and in which the capitalists were forced by competition to behave as the pure embodiment of capital by investing all their surplus value), the mass of surplus value would increase with every cycle of production *ad infinitum*. The capitalist class would have ever greater quantities of surplus Value at its disposal and would be under competitive pressure to invest this in an ever-larger scale of production.

As Michael Kidron has put it, Marx’s argument assumed that ‘... All output flows back into the system as productive

consumption. In a closed system like this, allocation would swing progressively in favour of investment'. [22]

That in itself does not automatically mean a rise in the ratio of 'dead labour' to 'living labour'. The investment can be in 'capital saving investment'. If scientific knowledge is progressing and being applied as new technologies, then some of these technologies can well employ less machinery and raw materials per worker than old technologies (to give a relatively recent example, the production of newspapers using phototypesetting and lithopresses is less capital intensive than the use of linotype machines and letter presses. Fewer workers are employed, but the capital equipment also embodies much less 'dead labour').

But that is not the end of the argument. It only shows that at any point in time among new technologies there will be *some* technologies that are capital saving.

The important point, however, is what the *average* sort of new technology will be. And there is an additional stage in the argument that can prove that if there is a massive amount of surplus-value-seeking-investment in the hands of rival capitalists, then the overall tendency will be for the average investment to be capital intensive.

The most competitive capitalists in each line of business will be those who introduce most new innovations. At any given level of scientific and technical knowledge some of these may indeed be capital saving. But when all these have been employed, there will still be other innovations (or at least capitalists will suspect there are other innovations) to be obtained only by increasing the level of investment in means of production.

The fact that some technical progress can take place without any rise in the 'technical composition' of capital does not mean that you can gain *all* the advantages of technical progress without such a rise.

The point can be illustrated quite simply by assuming, for a moment, a state of affairs in which in a given field of production new scientific knowledge is not emerging, and in which all existing techniques possible at a given ratio of dead to living labour have been exhausted. In this situation, a capitalist who *increases* the technical composition of his capital (who uses more means of production per worker) can expect to be able to employ improved techniques of production, which were known about in the past but could not be employed because the ratio of means of production to labour was too small. By contrast, a capitalist who maintains (let alone reduces) the existing ratio of means of production to labour, will find himself stuck with the existing level of techniques of production.

If an individual capitalist can increase the 'technical composition' of his capital, he will be able to invest in capital-intensive as well as labour-intensive innovations and gain at the expense of his competitors. If he cannot increase the organic composition, he gets the benefit of the labour intensive innovations only and loses out in competition.

In fact, every operating capitalist takes it for granted that the way to gain access to the most advanced technical change is to increase the level of investment in dead labour (including that dead labour congealed in past research and development activity). It is only in the pages of the most esoteric journals of political economy that anyone imagines that for the Ford Motor company the way to meet competition from a General Motors or a Toyota is to *cut* the level of physical investment per worker. In the real world the capitalist usually recognises that you cannot get the benefits of investment without paying for it. His firm may by accident stumble upon a capital saving innovation. But the only way he can guarantee getting innovations without

relying on accidents is to expand the level of his investment on dead labour.

There is no simple symmetry between labour intensive and capital intensive investment when it comes to innovation. If you cut the amount of dead labour per worker you might still stumble on some innovation unknown to your competitors; if you increase the investment on dead labour per worker you can not only match these innovations yourself, but you can also obtain technical advances unreachable to competitors who cannot match your 'capital intensity'. And given that, in theory at least, there is no limit to the possible increase in technical composition, there is no limit therefore to possible innovation based upon this method of competition.

For this reason, other things being equal, you can always expect there to be more capital intensive than labour intensive innovations, and for the average technical composition of capital to rise.

The only thing which could stop pressure for this rise would be if, for some reason, there was a shortage of surplus-value-seeking-investment. In such a case the capitalists would be forced to forego hopes of achieving the innovations possible on the basis of capital intensive accumulation and settle for those they might stumble on by accident.

## **Productivity and the cost of means of production**

The fact that the physical size of the means and materials of production grows in relation to the labour force does not mean that cost of investment



necessarily grows faster than the labour force. For, as Marx himself recognised, the very technical progress that follows from increasing the ratio of dead to living labour tends to cut the amount of labour required to produce each machine, factory or bit of raw material. Once again this is a factor referred to by Marx.

‘The value of the constant capital does not increase in the same proportion as its material volume ... The same development which increases the mass of the constant capital in relation to the variable reduces the value of its elements as a result of the increased productivity of labour, and therefore prevents the value of constant capital, although it continually increases, from increasing at the same rate as its material volume ... [in] isolated cases the mass of the elements of constant capital may even increase, while its value remains the same or falls ...’  
**(Capital Three, p. 231)**

In other words, machines grow more powerful and more complex. But they themselves are made by using techniques which are ever advancing and reducing the number of person-hours required to make them. So although one machine might be twice as powerful and productive as the machine it replaces, it could cost less. The technical composition of capital would increase, but the organic composition (in terms of value) remains the same or may even fall.

Marx notes that this ‘is bound up with the depreciation of existing capital which occurs with the development of industry ...’ The fact that a machine can be replaced by one which requires less labour hours to produce (because productivity has advanced), means that the value of the machine to the capitalist falls. A portion of its value has to

be written off, at a speed much faster than the physical wearing out of the machine.

This *depreciation* or '*devaluation*' of constant capital has been most picked on as disproving Marx's law (for example, by Hodgson, Steedman, Himmelweit, Okishio, Glyn). They argue that technical progress means that goods are always being produced more cheaply than in the past. If a raising of the organic composition of capital in a certain industry increases productivity, then the price of its output compared to that of other industries will fall. But that in turn will reduce the costs of investment in those industries in the next production cycle. Cheaper investment throughout the economy will cheapen further production of means of production and consumption and so on. [23] Lower investment costs will *raise* the rate of profit.

At first glance the argument looks convincing. It is however false.

It rests upon a sequence of logical steps you cannot take in the real world. Investment in a process of production takes place at one point in time. The cheapening of further investment as a result of improved production techniques occurs at a later point in time. The two things are *not* simultaneous.

The investment a capitalist makes today is no cheaper because once operating it makes it possible to make the same investment more cheaply in future. The rate of profit is a measure of the surplus value accruing to the capitalist compared to the amount he has laid down in investment in the past. It is not a measure of the surplus value accruing to him compared with the cost of his investment if he were making it afresh. The point has added importance when it is remembered that the real process of capitalist investment takes place in such a way that the same fixed constant capital (machines and buildings) is used for several cycles of

production. The fact that the cost of the investment would be less if it took place after the second, third, fourth etc. round of production does not alter the cost before the first round of production. [24]

Fine and Harris claim that in Marx there is a distinction between the concept *organic composition of capital* and *value composition of capital*. The organic composition is the comparison of investment in means of production and labour in terms of 'old values', whereas the value composition is a comparison in terms of the 'current value of means of production and wage goods consumed'. 'Changes in the organic composition are directly proportional to changes in the technical composition, whereas changes in the value composition are not ...' [25]

For the capitalist it is the 'old' composition, the organic composition, which is the vital thing. For capitalism is based not just on value but upon the *self expansion* of the values embodied in capital. This necessarily implies a comparison of current surplus value with the prior capital investment from which it flows. The very notion of 'self-expanding values' is incoherent without it.

This does not necessarily mean that the actual accounting procedures used by a firm calculate the rate of profit by comparing the profit with the original capital. They may instead use the current replacement cost of capital as the denominator in their rate of profit calculations. But in that case, they have to deduct the loss in value of their original capital from their profits before making the comparison. The effect is the same. The depreciation of capital does not serve to halt a decline in the rate of profit, but to accentuate it. It reduces the organic composition of capital only through reducing the overall mass of profits – and with it the rate of profit too. [26]

In any case, there is an argument for saying that calculations based on the original cost of investment better capture what is at stake for capitalists when they make investment decisions. For what they want to be sure of before investing is that they will earn an adequate rate of profit on the investment they are making now, not on what it would cost them to make it some years hence. This is their prime consideration, even though when it comes at some point in the future to estimating the rate of profit then achieved, they may, for reasons of convenience (because of the difficulty calculating the combined historic cost of investments made at successive points in time) compare their profit, with deductions for depreciation made according to rough and ready procedures, to the replacement cost of their capital.

If, for example, the capitalist has borrowed capital from the bank with which to start production it is the original value of that capital the firm is responsible for, not the amount it would have to borrow from the bank to invest in the same means of production some time later (when these means of production were cheaper). From his point of view, if those means of production are depreciating quickly, that increases his problems and does not ease them. As the total fixed capital is worth less in the second and subsequent production rounds than in the first one, the same portion of means of production used up in the production process is worth less and so the value of constant capital which passes over into the commodities produced is less. The value of the capitalist's output falls and he has greater difficulty in paying back what he owes to the bank. The fall in the value of his capital with the diminution of the current cost of replacing means of production due to increased productivity eats into his surplus value.

Increased productivity does accelerate the rate at which constant capital depreciates. But far from easing the problems of the average capitalists this makes them worse. It means that unless they can increase the rate of exploitation, they have to use a growing amount of surplus value to pay for that depreciation.

In any case, the cheapening of the cost of new physical means of production cannot be the crucial thing when it comes to the pressures for the organic composition of capital to rise. Our argument earlier as to why the organic composition must rise had to do *not* just with the growth in the physical stock of means and materials of production, it had to do above all with the continual growth of the mass of surplus *value* seeking an outlet for investment. We argued that at any point in time, the more of this surplus value an individual capitalist can get hold of and invest in means of production, the more productivity-increasing innovations he will be able to introduce compared to his competitors. It is the investment of greater amounts of surplus *value* in means of production that concerns him, not just the expansion of the amount of physical means of production at his disposal.

The organic composition of capital will therefore tend to rise, other things being equal, if there is at least some surplus value seeking an outlet for self expansion. It makes no difference if the physical means and materials of production are cheaper. All that can do is to cause still greater physical means and materials of production to be employed in order to embody the expanded value of the surplus.

There is only one condition under which there will not be this pressure on the expansion of the value of constant capital – if the scale of devaluation of old constant capital due to increased productivity has been so great that the original capital is not even giving rise to the production of

enough value to cover its own cost and to pay its workers. In this case surplus value is negative, and the and the rate of profit is negative. [27]

But in that case the precondition for a falling organic composition of capital would be *negative* accumulation, a *negative* rate of profit and therefore a complete break down of the system! [28]

### **Increased exploitation and the rate of profit**

Marx lists as one of his ‘countervailing tendencies’ the ability of capital to increase the rate of exploitation of each worker, even as the organic composition of capital rises (**Capital Three**, p. 227 *et. seq.*) So there are fewer workers per unit of investment; but each worker is contributing more surplus value.

Increased exploitation can mean increasing the length of the working day, increasing the physical intensity of labour, or cutting real wages. But it does not have to involve any of these things.

The technical advance associated with more means of production per worker has the effect of raising the productivity of the worker. In a single hour or day he or she produces more than he/she did previously for the same exertion of labour. So the amount of labour he/she has to exert to produce goods equivalent to his/her own consumption falls. And the amount of the working day’s labour the capitalist can take as surplus value rises. The ratio of surplus labour to necessary labour grows as the means of production advance – even if there is no fall in real wages.

‘The tendency of the rate of profit to fall is bound up 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 is expressed under capitalism.’ [29]

This has led to criticisms of the very notion of a ‘law’ of the falling rate of profit to which the rise in the rate of exploitation is merely a countervailing factor. For instance, Sweezy argues:

‘It seems hardly wise to treat an integral part of the process of rising productivity separately and as an offsetting factor; a better procedure is to recognise from the outset that rising productivity tends to bring with it a higher rate of surplus value ... If both the organic composition of capital and the rate of surplus value are assumed variable, as we think they should be, then the direction in which the rate of profit will change becomes indeterminate ...’ [30]

Marx himself does deal with this argument. His contention is that however much the rate of exploitation rises, it is not possible for the total surplus labour (and hence surplus value) extracted from each worker to rise above the length of the working day. Therefore fewer workers must eventually mean less surplus value. Marx’s argument has been reformulated since in more precise mathematical terms and is now generally accepted even by critics of other parts of his argument. [31]

The profitability of the individual capital and of the system as a whole In recent years it has been argued against Marx, that changes in technique alone *cannot* produce a fall in the rate of profit. For, it is said, capitalists will only introduce a new technique if it raises their profits. But if it

raises the profit of one capitalist, then it must raise the average profit of the whole capitalist class. So, for instance, Steedman states: ‘The forces of competition will lead to that selection of production methods industry by industry which generates the highest possible uniform rate of profit through the economy ...’ [32] The same point has been made by Andrew Glyn [33], by John Harrison [34], and has been elaborated mathematically by Okishio [35] and Himmelweit. [36]

They conclude that capitalists will only adopt capital intensive techniques that seem to reduce their rate of profit if that rate is already being squeezed by a rise in real wages. Wages, not the organic composition of capital, hit the rate of profit.

There is a simple answer in Marx to any such argument. It is that the first capitalist to invest in a new technology gets a competitive advantage over his fellow capitalists that enables him to gain a surplus profit, but that this surplus profit will not last once the new techniques are generalised.

What the capitalist gets in money terms when he sells his goods depends upon the average amount of socially necessary labour contained in them. If he introduces a new technique, but no other capitalists do, he is producing goods worth the same amount of socially necessary labour as before, but with less expenditure on real concrete labour power. His profits rise. But once all capitalists have introduced these techniques, the value of the goods falls until it corresponds to the average amount of labour needed to produce them under the new techniques. [37] The additional profit disappears – and if more means of production are used to get access to the new techniques, the rate of profit falls. [38]

Those who use this sort of objection to Marx usually do not differentiate between it and an earlier problem we spoke



of, that of the cut in the cost of constant capital as productivity increases. They argue that the new techniques introduced by raising the organic composition of capital must produce goods more cheaply than before, and therefore serve to cheapen the cost of the investment itself. But against this, the arguments put in the earlier section hold: cheapening new investment means forcing capitalists with old investment to write off much of these. Any improvement in profit rates that comes in through the door of cheaper investment goes out through the window of increased depreciation write-offs.

## **Crises and the devaluation of capital**

We have proved that the cheapening of the means and materials of production due to technical progress could not counter the pressures that force down the rate of profit on the total capital.

However Marx did not simply view the capitalist system as made up of total capital (or, as it is usually called, ‘capital-in-general’). Total capital is composed of individual competing capitals. And these individual capitals are afflicted by periodic crises of the system (in part brought about by the long term decline in the rate of profit) which have the effect of driving some of them out of business, with their means of production either passing out of use or being bought up by other capitals.

In this lies part of the secret of capitalism’s historical ability to overcome the affects of the ‘law’ of the falling rate of profit.

The crisis means that huge chunks of capital lose their value – machines rust, goods are unsold or only sold at

greatly reduced prices, large amounts of credit have to be written off. If this process were distributed evenly over all the capitals, it is difficult to see how they would ever recover from the crisis. But in fact, because some capitals go out of business, those that remain are able to avoid having to pay for the devalued capital. Not only do they succeed in passing the cost of the crisis on to the other, deceased capitals, they also often succeed in enhancing the value of their own capital by buying up means and materials of production on the cheap (ie at less than their current value in terms of labour time).

The surviving capitals get the benefits of past investment made by other capitals, but do not need to worry about covering the original cost of that investment with their profits. They only have to worry about covering its present value (reduced because of technical progress): indeed, with luck they can get control of the investment at less than its present value. The old owners could not gain any benefit from the way in which technical progress was continually decreasing the value of their investment because devaluation was for them a depreciation charge against profit; the new owners gain nothing but benefit, for the old owners have borne the cost of depreciation in going bankrupt and they, the new owners, reap all the further profits to be made.

The critics of Marx's law see the cheapening of the cost of means of production as a smoothly operating mechanism that enables capitalism to expand without facing a falling profit rate. But, in fact, this mechanism can only work in so far as *crises* enable some capitals to benefit at the expense of others. To offset the 'law' the cheapening of the cost of means of production has to find expression in enforced depreciation as whole capitals are destroyed. [39]

‘The periodical depreciation of existing capital – one of the means immanent in capitalist production to check the fall of the rate of profit and hasten accumulation of capital value through the formation of new capital – disturbs the given conditions under which the process of circulation and reproduction takes place, and is therefore accompanied by sudden stoppages and crises in the production process.’ (**Capital Three**, p. 244)

Crises are in part provoked by the tendency of the rate of profit to fall, but in turn counteract that tendency:

‘Crises are always but momentary and forcible solutions of the existing contradictions. They are violent eruptions which for a time restore the disturbed equilibrium.’ (**Capital Three**, p. 244)

What is more, the crisis can reduce or destroy the pressure for the organic composition of capital to rise.

The destruction of value in the crisis includes a destruction of some of the total surplus value. This does not prevent further accumulation, because even if the capitalist class as a whole has less total surplus value at its disposal, this is shared between a smaller number of capitals. Each individual capitalist sees a rise in the amount of profit he can expect in relation to the cost of his investment – a rise in his rate of profit – even though the surplus value accruing to the capitalist class as a whole may have fallen.

Finally, if the total mass of surplus value has temporarily stopped rising (or even fallen) the ability for each individual capitalist to get access to surplus-seeking-investment will be diminished, and the pressure for capital-intensive forms of investment will be reduced.

The crisis has, as a by-product, a reduction in the upward pressure on the organic composition of capital.

Under such circumstances a quite modest rise in the rate of exploitation may be sufficient to offset the downward tendency of the rate of profit. And, in the immediate aftermath of a great crisis, with high levels of unemployment, workers will often accept such an increase in the rate of exploitation.

### **Rationalisation through crisis and the aging of the system**

Once periodic crises are taken into account, there is no difficulty in explaining at least some of the failure of the organic composition of capital to rise as fast as Marx's model would seem to suggest it should. Indeed, it can be argued that provided the crises are deep enough, there is no reason at all why there should be a secular tendency for the organic composition to rise through cycle after cycle, or for the rate of profit to fall. But if that is so, why should crises become ever more serious? Why should the system ever exhaust its ability to expand the productive forces?

The logical conclusion of this line of argument is to see crises as simply a way – a painful but effective way – for the system to rationalise itself, necessary hiccups in its endless movement. The economic turmoil of the last decade then becomes no more than a process of rationalisation and restructuring, a necessary process of transition to a new period of growth. [40]

But this is to overlook the impact on rationalisation-through-crisis of another key feature about the dynamic of

capitalism as portrayed by Marx. Marx's account of capitalism is not of a system that simply undergoes the same motions, year after year, decade after decade, continually reproducing itself in an essentially unchanged form according to fixed and immutable economic laws.

There is, it is true, recognition of the abstract, apparently timeless, laws that govern the motions of any society that has become subject to the dictates of capital: the peculiar features of commodity production that subordinate producers to the unplanned interaction of their products, the uncontrollable drive to self-expansion of value that follows once labourers become separated from the means of production and labour power itself becomes a commodity, the resultant tendencies for the rate of profit to decline on the one hand and for there to be repeated economic crises on the other, the way in which crises can restore the conditions for further self-expansion of capital.

But even such a minimal outline account of the abstract cyclical motions of capitalism implies something else: the system undergoes continual self-transformation as the abstract laws of capitalist production change the relationships of the different units of capital to each other and to the working class. The rising organic composition of capital is itself one aspect of these changes. Another is the tendency towards increasing *concentration* of capital (the units of production getting ever larger) and *centralisation* of capital (the units getting fewer in number). Crises at the same time as overcoming the problems associated with the tendency of the rate of profit to fall, push forward the level of concentration and centralisation of capital.

About the facts of concentration and centralisation of capital over the last century, there should be no argument. Successive waves of bankruptcies, takeovers, mergers and nationalisations have reduced the number of major firms

and increased the proportion of capital under their control. So, for instance, in Britain in 1910 the top 100 firms produced 16% of output, by 1970 they produced 50%; in the US in 1950 the top 200 firms controlled 49% of assets, by 1967 they controlled 58.8%. Of course, in such economies new businesses do come into being. But so too do others disappear – more often than not in larger numbers.

Internationally, very much the same pattern holds – at least since about the close of World War One. Before then German, Japanese, US capitalisms did emerge as viable competitors with British capitalism. Since then, the increasing pattern has been for new areas of industrial expansion to grow up as offshoots of existing capitals (e.g. the economies of Hong Kong, Taiwan, South Korea etc.). The only exception has been where competitive capitals within a country have been more or less completely replaced by state capitals – in Russia, Eastern Europe, a number of third world states etc. But even in these cases; the pattern of the last two decades has been one of increasing integration into – and varying degrees of subordination to – the operations of the giant corporations of the West. [41]

Concentration and centralisation have important effects on the way in which the basic laws of motion of capitalism find expression. The larger the units of capital and the more a few of them dominate the system, the more difficult it becomes for a cyclical crisis to open up a new period of expansion. While there were a large number of relatively small firms, some could go bust without damaging others. But with a few very large firms, the destruction of any of them can do immense damage to the operations of others.

Each giant closely interacts with the others – through supplying components and raw materials, through provisions of finance, through acting as a market for their output. The futures of the great steel corporations cannot be

separated from those of the giant shipbuilding and auto firms; the oil, chemical, plastics and artificial fibre manufacturers increasingly form a single complex of interests; the stability of whole national economies comes to depend upon the well being of a handful of banks, which in turn become dependent upon particular giant enterprises to whom they have lent immense sums. If any one of these giants goes down, it threatens to bring about the progressive collapse of the others that are dependent on it. Instead of crisis allowing the efficient to expand at the expense of the inefficient, it can inflict untold, random damage on efficient and inefficient alike.

Under such circumstances, the cyclical motions of the system do not operate automatically to counter the rising organic composition of capital and the falling rate of profit. When crises come, they depreciate the capital of the survivors, as well as those driven to the wall, forcing profit rates still further down instead of rapidly restoring them. And fearing the threat of such an eventuality, the giant firms inside each country tend to draw together to prop each other up, hoping at best to postpone crisis indefinitely, at worst to use the power of the state to impose its consequences on the capitals of other countries. But this can only prevent crises acting as the main countervailing influence to the long term tendency of the rate of profit to fall. [42]

The more the concentration and centralisation of capital takes place, the less should we expect the system to be able to evade the consequences of Marx's law. If in its youth the countervailing tendency could operate as powerfully as the law itself for long periods of time, in its old age the reverse should be the case. Declining profit rates should drag the system down into a slough of permanent stagnation, of short spurts of half hearted expansion interspersed with long

cyclical crises that resolve nothing.

## **Imperialism and war**

The picture of capitalism we have used so far in order to explain Marx's law and the countervailing factors has been an abstract picture. In it there are only capitalists and workers. The capitalists are forced by competition to accumulate all their surplus value. The only means of competition between them is through trying to undercut each others' selling price on the market. The state and the use of force against the capitalists of other countries hardly exists.

The real history of capitalism is rather more complicated than this. Capitalism grew up in a pre-capitalist environment, in which there were not only capitalists and workers but pre-capitalist exploiting and exploited classes; even under aging capitalism social classes continue to exist between the two great classes. Capitalists have always used some surplus value for things besides accumulation – for the consumption of themselves and social groups dependent on them, for waging war against pre-capitalist ruling classes, for the enslavement of colonies and against one another. The means of competition have never been *just* price competition – it has always involved as well at least some expenditure on advertising, bribery, the use of force to prise open markets.

And the role of the state was central in aiding infant capitalism's entry into the world, was crucial in enabling it to dispose of its pre-capitalist rivals as it entered adulthood,



and is inextricably linked with all of its operations in its dotage.

The move from the abstract outline of the main components of the system to the concrete circumstances in which they operate, necessarily affects the way in which Marx's law works out.

One such effect was included by Marx within his list of 'countervailing factors'. Each capitalist economy operated within a world economy, and 'foreign trade', he argued, could offset the downward tendency of the rate of profit. He pointed to two ways in which this could occur: (1) through access to cheaper raw materials, thus reducing production costs, and (2) through allowing investment in areas where the wages were lower and the rate of profit higher. [43]

Fifty years after Marx, Lenin, following the English liberal economist Hobson, suggested another important effect: Capital could be exported to colonies and semi-colonies which could not find a profitable outlet for investment at home. Lenin himself did not explore explicitly the way this related to Marx's law. But it is not difficult to do so. In the period 1880 to 1913 something like 15% of the British national product went into overseas investment. If invested in Britain, this would have had to increase the pressure for capital intensive investment domestically and to have reduced the rate of profit. As it was, this passed out of the British section of the world economy, and so did not increase this pressure. [44]

But in itself this could not be more than a transitory mechanism for offsetting the fall in the rate of profit. It assumes somewhere 'outside' the capitalist economy to which surplus value flows. This 'outside' existed when capitalism was still restricted to the Western edge of the Eurasian land mass and to part of North America, with precapitalist forms of exploitation dominating even in those

parts of the rest of the world which were integrated into the capitalist world market. But once imperialism had done its work, and capitalist forms of exploitation dominated more or less everywhere the 'outside' no longer existed. [45]

In a world of multinational corporations, surplus value which flows away from one area reducing the upward pressure on the organic composition of capital, merely serves to increase the upward pressure elsewhere. The average *world* rate of profit falls. The world system is driven to stagnation just as the national economy was in Marx's time.

We can begin to understand why in Britain – the most important imperialist power of capitalism's early adulthood – the organic composition fell in the 1880s, 1890s and early 1900s, but then started rising again. The impact of empire was beginning to be exhausted.

But the search for empire brought into operation another factor – one which was to crucially *increase* in importance with the weakening ability of empire to offset the falling rate of profit. Capitalism was increasingly an *international* system. Not just in the sense of capitalists *selling* goods abroad, but in the wider sense of organising productive processes on a scale that cut across national frontiers. By the time of the First World War the largest firms in the advanced capitalist countries depended upon raw materials in one part of the world, production facilities in another, and markets elsewhere.

If you talk about the system today, the trend is even more marked. The seven major oil companies control half the world's output; the giant car firms are all racing towards their own version of the 'world car', made of components manufactured in dozens of different countries. In computers and aerospace firms have to operate internationally in order to stay in business at all.

Yet the only mechanisms that exist with the power to ensure that the rest of society satisfies the needs of the giant firms remain the national states. Each firm – however wide ranging its international operations – depends upon a national state to protect its operations against any threat of force (whether from other firms or from exploited classes). Indeed, the process of Intel-nationalisation of production has taken place step by step with the process (referred to earlier) of monopolisation of each national economy by fewer and fewer giants ever more closely intertwined with the state.

Observation of these two simultaneous, yet apparently contradictory processes – increased reliance on the national state and increased internationalisation – led Lenin and Bukharin to write their classic works on imperialism sixty and more years ago. [46] Their argument was that the contradiction could only be resolved by war. In the modern world, they insisted, ‘economic’ competition between ‘state capitalist trusts’ was more and more supplemented and even replaced by military competition. The great powers were continually partitioning and repartitioning the world as each resorted to violence to protect and reinforce its vital economic interests at the expense of the other. War became as normal a capitalist mechanism as price cutting, boom and slump.

But war has a consequence of immense importance for the basic trend of the system, for Marx’s ‘law’. [47] Vast amounts of capital are physically destroyed (bombed factories, unharvested crops, etc.) and even vaster amounts devalued (as trade patterns are disrupted, goods unsold, credits cancelled etc.). But, typically, the costs of this are borne unevenly – being shifted on to the losers by the winners. War, like crises, enabled the mass of surplus value

seeking investment to be reduced, without necessarily reducing the rate of profit for the surviving capitals.

The scale of destruction of values can be massive. Shane Mage, for instance, has estimated the combined effect of the crisis of the 1930s and World War Two on the US economy: 'Between 1930 and 1945 the capital stock of the US fell from 145bn dollars to 120bn dollars, a net disinvestment of some 20 per cent ...' (**op. cit.**, p. 228). A fifth of the existing accumulated surplus value and the additional surplus value produced over 15 years were wiped out.

The history of the twentieth century suggests that at the point when slumps became a very expensive and very painful way of capitalism offsetting the tendency of the organic composition of capital to rise, imperialist expansion and war took over.

But war also has its problems. As the forces of production grow, so too do the forces of destruction. Weaponry develops which threatens to destroy the capital of all those involved in military conflict, not just some to the benefit of others. Just as restructuring and 'rationalisation' of the world system through slump becomes a very difficult and very painful – even if necessary – process, so does the 'restructuring and rationalisation' through war. Just as you would expect aging capitalism to be permanently on the edge of slump, without gaining its benefits for the system, so you would expect it to be permanently on the edge of war, without its rather dubious benefits either.

## **Unproductive consumption and the rate of profit**

In the **Grundrisse** Marx makes, in passing, one remark that points to something of enormous significance for his general theory based upon the ‘falling rate of profit’.

‘There are moments in the developed movement of capital which delay this movement other than by crises such as, e.g., the constant devaluation of part of the existing capital: *the transformation of a great part of capital into fixed capital which does not serve as agency of direct production; unproductive waste of a great portion of capital* etc. (productively employed capital is always replaced doubly, in that the positing of a productive capital presupposes a counter-value). The unproductive consumption of capital replaces it on one side, annihilates it on the other ... (**Grundrisse**, pp. 750–51. My emphasis – CH)

What Marx is saying is that if for some reason capitalists divert some of the surplus value available for investment into some other use, then the pressure of surplus value seeking self-expansion is reduced, there is less new capital available for capitals seeking innovations that will cut their costs, and the trend towards capital-saving investment will be reduced.

The same point was made much more explicitly in the 1960s by Mike Kidron [48] – apparently without knowing that Marx had spelt the argument out (the **Grundrisse** was not published in English until 1973). He pointed out that

‘His (i.e. Marx’s) argument (about the falling rate of profit) rested on two assumptions, both realistic: all output flows back into the system as productive inputs through either workers’ or capitalists’ productive consumption – ideally there are no leakages in the system and no choice other than to allocate total output between what would now be called investment and working class consumption; secondly in a

closed system like this the allocation would swing progressively in favour of investment. The first is the pivotal one. If dropped, the ratio of the returns to capital to labour within the system becomes indeterminate, the second falls, and the law with it ...' [49]

So 'leaks' of surplus value from the closed cycle of production of surplus value/investment of surplus value/production of more surplus value, would offset the tendency of the rate of profit to fall. As Kidron put it in a later work:

'In Marx the model assumes a closed system in which all output flows back as inputs in the form of investment goods or wage goods. There are no leaks. Yet in principle a leak could insulate the compulsion to grow from its most important consequences. If 'labour intensive' goods were to be drawn off systematically, the overall organic composition of capital would rise faster than in a closed system. If 'capital intensive' goods were drawn off the rise would be slower, and, depending on the volume and composition of the leak, could even stop or be reversed. In such a case there would be no decline in the average rate of profit, no reason to expect increasingly severe slumps and so on.' [50]

The argument is impeccable – apart from the distinction between the effect of drawing off 'labour intensive' and 'capital intensive' goods, since in either case the effect is to reduce the volume of surplus value seeking an outlet in self expansion.

Kidron goes on to suggest the form these leaks have taken:

'Capitalism has never formed a closed system in practice. Wars and slumps have destroyed immense quantities of output, incorporating huge accumulations of value [N.B. Kidron does not here make the false distinction between 'labour intensive' and 'capital intensive' forms of value – *CH*] and prevented the production of more. Capital exports have diverted and frozen

other accumulations for long stretches of time. A lot has, since World War II, filtered out in the production of arms. Each of these leaks has acted to slow the rise of the overall organic composition and the fall in the rate of profit.’ (*Ibid.*, pp. 16–17).

Kidron’s argument was attacked bitterly by some ‘orthodox’ Marxists. It was, for instance, denounced as being ‘under the obvious influence of “fashionable” (i.e. bourgeois) economies’, as resting on ‘a truly remarkable confusion between use values and exchange values’. [51]

But insults aside, there is an attempt at an argument against Kidron. It is that all goods that are produced have the same status (providing they can be sold and the surplus value embodied in them realised). Kidron’s mistakes lie, according to a later work of Mandel, in that:

‘He is patently confusing the *process of production* and the process of reproduction. When the capital invested in the various branches of production has been valorised and the commodities in its possession have been sold at their price of production, the surplus value from this capital has been realised, irrespective of whether or not the commodities sold enter into the process of reproduction.’ [52]

In a footnote Mandel goes on to criticise me for an article I wrote defending Kidron’s account:

‘Harman claims that the drain of capital into Department III takes capital away from Departments I and II which would have increased the organic composition if it had been invested there. He is quite right. But he forgets that the investment of this capital in Department III likewise raises the organic composition of capital there. How it can stop the rate of profit falling remains a mystery.’ [53]

Perhaps if Mandel had read the **Grundrisse** (let alone Mike Kidron or myself) a little more closely, he might have had the key to the ‘mystery’.

What he (following many students of Marx in this century) refers to as ‘Department III’ is the section of the economy which produces goods for consumption by the capitalists and their hangers on, that is, goods that are used neither for the means of production nor to be exchanged (via money) with workers for their labour power.

These are the goods which, by definition, do not enter into ‘productive consumption’: goods which form part of the means of production pass on their value to new goods as they are consumed in the production process; goods which form part of the real wage of workers pass on their value as the workers who consume them create value and surplus value; goods which are consumed, in one way or another by the capitalists (or those they employ non-productively) end their life without passing their value on to anything else. The value which is contained in these goods has come into existence through past labour – on this even Mandel is agreed. But it soon passes out of existence without contributing to further capital accumulation – in this respect Mandel is wrong, for it differs radically from the value contained in ‘wage goods’ and means of production. [54]

OK, it might be said, but can’t Mandel be right on another point? Kidron implies that production of arms takes place with a higher organic composition of capital than average. Won’t this immediately lower the rate of profit throughout the economy as a whole, regardless of the effect in reducing the future organic composition of capital?

Kidron himself relied upon the technical formula devised by the (non-Marxist) Polish economist of the turn of the century, von Bortkiewicz, for working out prices from labour



value (the so called ‘solution to the transformation problem’). This showed that the rate of profit was not affected by the organic composition in parts of the economy producing goods that were unproductively consumed.

This use of von Bortkiewicz has been attacked on the grounds that he was not a Marxist [55] and that his equations rest on assumptions at variance with Marx’s whole approach. [56] There are problems with von Bortkiewicz’s method. [57] But recently both Anwar Shaikh and Miguel Angel Garcia have produced derivations of prices from labour values, using *Marx’s own method* systematically applied. [58] It is easy to see how you can draw the ‘von Bortkiewicz’ conclusion from them.

According to Marx, if one part of the economy has a higher organic composition of capital than another part, then it would, other things being equal, have a lower rate of profit. But this would lead firms to threaten to move away from this area of production, reducing the supply of goods until the prices rose and pushed profit rates up to the average level of the economy. Effectively, by a rise in its prices and a corresponding relative fall in the prices of goods from the rest of the economy, enough surplus value would be transferred from other areas of production to raise its rate of profit to the average.

As a result prices diverge from labour values. It can be seen how this works out for different sectors of production.

A rise in the organic composition of capital in the sector producing wage goods has the effect of raising the *average* organic composition of capital, and reducing the average rate of profit. Crudely, the total social constant capital grows, without a corresponding growth in the source of surplus value, and the rate of profit falls. After the equalisation of the rate of profit, the wage goods sell at above their value (since they rise in price until they enjoy the

average rate of profit). Both investment goods *and* goods in the third sector fall in price by an equivalent amount. The cost of future investment rises a little because the rise in the cost of variable capital is only partly compensated by the fall in price of constant capital. The total cost of investment in the next round increases slightly. And so the average rate of profit falls, and then falls a little more.

The same applies if the organic composition in the producer goods sector rises above the average.

But things are rather different when we come to sector III. The first stage is as with the other two sectors. A rise in the organic composition leads to a rise in the total social constant capital compared to the source of surplus value. The average rate of profit falls. It is at the next stage that things are different. Price changes are brought about by the equalisation of the rate of profit. These now *reduce the cost of new investment*.

The effect of the rise of the price of the output of sector III above its value is to cut the prices of the outputs of sectors I *and* II below their values. Both sorts of productive consumption become cheaper. Having risen in one round of production (due to the growth of constant capital) the cost of investment *falls in the next round of production*.

With a rise in the organic composition in sectors I or II, the rate of profit falls, and stays down. With a rise in the organic composition in sector III, the rate of profit falls *and* then immediately rises again! [59]

These two peculiar features of investment in the output of 'unproductive consumption' goods clearly have immense implications for the dynamics of the system, insofar as this is determined by the effect of the organic composition on the rate of profit. *Any* investment in this sector not only diminishes the upward pressure on the organic composition throughout the system, but also diminishes the effect of any

rise hi the organic composition on the (price) rate of profit.

## **Aging capitalism, unproductive expenditures and new dimensions of competition**

‘As capitalist production, accumulation and wealth become developed, the capitalist ceases to be the mere incarnation of capital. The progress of capitalist production not only creates a world of delights; it lays open, in speculation and the credit system, a thousand sources of individual enrichment. When a certain stage of development has been reached, a conventional degree of prodigality, which is also an exhibition of wealth and consequently a source of credit, becomes a business necessity ... Luxury enters into the expenses of representation.’ (**Capital One**, p. 544)

Marx suggests in passing in **Capital** that capitalism, which initially flourished through the destruction of preceding societies with their vast superstructure of unproductive classes, becomes sluggish as it becomes old and thereby creates its own non-productive superstructure.

In his discussion of commercial capital and commercial profit, he argues that with the expansion of the system, industrial capital has to surrender an increasing amount of surplus value to finance the unproductive buying and selling of its profits. ‘It is clear that as the scale of production is extended, commercial operations required constantly for the recirculation of industrial capital ... multiply accordingly ... the more developed the scale of production, the greater ... the commercial operations of industrial capital.’ (**Capital Three**, p. 293)

Successful capitalist competition is no longer (if it ever was) just a question of accumulating more rapidly than the rivals. It is also, increasingly a question of expenditure of surplus value on means of manipulating the market, advertising goods, creating a 'product image', bribing buyers in firms and state agencies. 'Non-productive' expenditures become increasingly significant for each individual capital. They are the price to be paid for adding a whole new dimension to the competitive struggle.

They are 'non-productive' because, although they nearly always involve the hiring of labour power, this does not produce surplus value. It merely enables the hirer to gain control of surplus value that would otherwise have gone to another capital. That is why Marx refers to them neither as part of variable capital nor constant capital, but as something else, 'the expenses of production'. Yet he also hints that the individual capitalist may regard them as 'productive' in certain circumstances – he has to invest in them if he is to get his appropriate share of the total surplus value already created.

'To industrial capital the costs of circulation appear as unproductive expenses, and so they are. To the merchant they appear as a source of profit, proportional given the general rate of profit, to their size. The outlay to be made on these circulation costs is therefore productive investment for mercantile capital ... And the commercial labour which it buys is likewise immediately productive for it.' (**Capital Three**, p. 296)

Such areas of 'unproductive' expenditure have grown massively since Marx's time, with the spread of advertising etc. The development of finance capital has meant the growth of a vast range of activities not concerned with the production of wealth, but rather

with the speculative redistribution of it among members of the capitalist class, all at great expense.

Other sorts of expenditures which are unproductive for the individual capital, but essential for its continuance have grown as well. The elimination of pre-capitalist forms of exploitation more or less everywhere mean that the expenses of the state have to be borne by the surplus created in capitalist production. Some of these state expenses are not only unproductive in the sense that they do not add to the creation of surplus value; they do not aid the ability of some capitals to get more surplus value out of the common stock held by the capitalist class as a whole in the course of competition either. They are necessary simply in order to maintain the structures of exploitation (expenditures on police, on ideologues, on priests in state financed churches, on social security payments aimed at stopping the permanently unemployed from rioting etc.). [60]

But others do aid the individual capitals to engage productive labour themselves (expenditures on the health and education of workers, on keeping unemployed workers on the labour market, on reassuring employed workers that they will be able to survive when they are too old to work etc.). These are what some modern Marxist writers refer to as 'reproductive' expenditures, others as 'indirectly productive' and still others as 'necessary non-productive'. The best way to see them is as 'non-productive' for the individual capital competing within the closed national market, since although it has to pay for them, they give it no advantage over its rivals who likewise benefit from them. To it they are more or less the same as having to pay more for labour power. But for the aggregate of capitalists (or the 'state capitalist trust') operating within one state in their competition with capitalists from other states they are, in a

sense, 'productive': they expand the scale of production of each capitalist more rapidly than his 'foreign' rivals. [61]

Finally, there are the military expenditures of the state. We have referred already to the contentions of the classic theorists of imperialism that the monopolisation of capital leads to its growing together with the state, and to war and the preparation for war becoming one of the main – if not *the* main – means by which nationally-based capitals try to drive each other to the wall. As the twentieth century has proceeded, military expenditures have come to consume massive amounts of surplus value, until some estimates suggest that they consume as much as the productive investments of individual capitals. [62]

Like expenditures on the police etc., military expenditures do not increase either the output of the individual capitalist or the 'aggregate' capitalist. But like expenditures on advertising they enable one bloc of capital – the 'aggregate' national capital, the 'state capitalist trust' – to encroach on the surplus value in the hands of other capitalists.

Addressing the Fourth Congress of the Communist International in 1922, Nicolai Bukharin suggested that

'Competition between various industrialists whose methods consisted in lowering the price of commodities ... is almost the only form of competition mentioned by Marx. But in the epoch of imperialist competition we find many other forms of competition wherein the method of reducing prices is of no significance. The main groups of the bourgeoisie are now of the nature of trustified groups within the framework of the state ... It is quite conceivable that such a form of enterprise should resort chiefly to violent forms of competition ... Thus arise the new forms of competition which lead to military attack by the state.' [63]

The argument can be rephrased. Marx's model of capitalism is a model in which there is only one

dimension of competition, that based upon competition for markets through accumulating productive investments aimed at reducing production costs and selling prices. But as capitalism gets older new dimensions of competition supplement and even on occasions replace this. [64]

Any assessment of capitalism in the twentieth century has to look at how these new dimensions of competition, and the various expenditures of surplus value which accompany them, affect the basic dynamic of the system and the 'law of the falling rate of profit'.

### **Different dimensions of competition and the falling rate of profit**

With some of the new forms of competition there is not a great deal to discuss. Marx himself, for instance, dealt very well with the effects of expenditure on the costs of retailing (what he referred to as 'merchants' capital). Such expenditure does not increase the total amount of surplus value. But the productive capitalists are forced by competitive pressures either to engage in them themselves or to pay part of their surplus value over to other capitalists to do the job for them, in proportion to the amount of investment undertaken by those capitalists. They therefore serve to reduce the average rate of profit. (**Capital Three**, pp. 292–94)

At the same time, in so far as they divert funds from productive investment, they will serve to reduce the general pressure for the capitalist class as a whole to increase the organic composition of capital, and will reduce long term pressures on the rate of profit.

The real problem arises when we come to the question of the effect of arms expenditure. This cannot simply have the effect of reducing the rate of profit – if only because empirically the period in which peace-time expenditures on arms reached an all-time high (1949 onwards) was a period in which capitalism no longer seemed condemned by the ‘falling rate of profit’ to stagnation and crises. [65] Hence attempts to treat arms as a form of ‘luxury’ expenditure by the ruling class. [66]

If arms *are* ‘luxury’ expenditure, then expenditure on them both offsets the pressures for the organic composition of capital to rise progressively *and* through the ‘von Bortkiewicz effect’ discussed above may not in the long term reduce the average rate of profit. Of course, capitalists have to use some of their surplus value to pay for them. But since the state represents the sum of the capitalists operating from its territory, this is merely a question of how capitalists expend the surplus value they already possess, and cannot alter the fact that they possess it, or the ratio of the total surplus value to the total investment (i.e. the rate of profit).

Such an account has had the advantage of providing some sort of explanation of why capitalism was able to expand in the post war period for nearly 30 years without running into the crises that seemed endemic until then. We will leave the spelling out of what happened in this period to the next part of this article. But the account never assumed that arms expenditure took place simply because of a decision by capitalists to spend their surplus value in a certain way: they did so because they expected to gain certain things from it



(defence of existing areas of exploitation, extension of those areas). And it also pointed to the way in which other forms of competition could force reductions in arms expenditure and a return to the classic pressures on the rate of profit.

[67]

These points need to be spelt out more explicitly and more systematically than previously, if we are really to come to have a framework for understanding the rate of profit and the dynamic of the system under aging capitalism. Such a systematic treatment means looking at ways in which different dimensions of competition, with different implications for the organic composition and the rate of profit, reinforce or contradict one another.

Each form of competition has the same goal: the preservation and expansion of the individual capital (or aggregate national capital) through gaining control of surplus value which would otherwise accrue to rival capitals. But this does not mean that all are equally effective at each stage in the development of the global system. At any particular point, from the point of view of the particular capital (or national capital), one form of competition is likely to be seen as most effective and therefore as most important, and other forms as a diversion from success in this.

The case Marx considered was one in which relatively small scale capitalist enterprises were expanding within what was still a predominantly pre-capitalist world and were doing so very successfully on the basis of 'pure' economic competition through the price mechanism. Under such circumstances, expenditures on the state were necessarily seen as a diversion of the individual capital's surplus value from areas of investment which would produce its self expansion.

It is easy to suggest cases in which things would operate quite differently: situations in which military expenditure would seem to provide the individual capitals of a particular country with better opportunities for expansion than expenditure oriented to price competition, or even situations in which investment oriented to price competition would seem like a diversion from the major means of preserving and augmenting individual capitals' military expenditures.

1. Take the situation where the rate of profit is so low that individual enterprises are unwilling to embark on new investments. Without new investments there is massive excess capacity in whole sectors of industry, goods are being dumped at below their value, there is massive 'overproduction'. Even attempts by the state to mobilise the mass of surplus value for investment seems unlikely to be able to produce goods at a low enough cost to break into new markets.

Under such circumstances, military expenditures can seem like a way of directing otherwise idle surplus value into channels that can be used to expand the share of the home market available to 'national capitalists', by forcibly closing it to outsiders through protectionist methods, and can then go on to forcibly prise open foreign markets at present protected by their states.

The fact that the arms spending does not actually create any fresh value at all does not worry them: it provides them with access to surplus value created via the use of means of production belonging to foreign capitalists. It expands national capital more than civilian investment would, even if it does not expand capital in general. Under this set of circumstances, although arms expenditure is motivated by

other considerations than the luxury consumption of the capitalist class and its hangers on, it has the same effect on the rate of profit. It neither cuts it in the short term, since it concerns simply how capitalists freely decide to use their already existing surplus value. Nor does it necessarily cut it in the long term, since even if it involves a high organic composition of capital, the 'von Bortkiewicz effect' may prevent this reducing the average rate of profit. And in addition it reduces the long term pressure for the organic composition to rise.

2. The situation in which arms expenditure seems the *only* effective dimension of competition are those of all-out war, as in 1914-1918 and 1940-45. Arms expenditure is no longer something capitalists have a choice about. It is an expenditure they have to undertake if they are to survive. They hope that it will, through victory, enable them to gain access to new sources of surplus value and thus to expand their capitals. But they have to undertake it even if these hopes are meagre, since the alternative is a loss of existing sources of surplus value to foreign capitalists. Arms spending is now as much a cost of continuing in production as is expenditure on the police.

At such a point, the rate of profit for the individual capitalist must fall, unless the rate of exploitation of the workforce can be forced up enormously. Arms as a cost of maintaining production have cut right into surplus value in the hands of the capitalist class here. But it is no longer the rate of profit of the individual capitalist which matters. Total war, by definition means that considerations of price competition become completely subordinate to considerations of military survival. If capitalist relations still

prevail, it is because the efforts of the rival capitals to outshoot each others mean that each has to reduce the price of labour power to the minimum in order to invest the surplus in producing more arms. Investment decisions become military, state, decisions, over-riding the decisions of particular owners of capital. [68]

The effects of the tendency of the rate of profit to decline now express themselves at the level of state decision-making, in terms of reducing the ability of the state both to engage in military activity it feels is needs in order to survive, let alone win, *and* to expand (or even simply reproduce) the existing level of non-military production.

These then, are instances in which price competition predominates and in which military competition predominates. But with the aging of capitalism, the trend is likely to be more and more to an interaction of both forms of competition.

The precise mixture is not the same for all powers. It depends upon the relative size of the powers, their geographic location, their natural resources etc. At such a stage, the dimensions of price competition and military competition must come into contradiction with each other. Success in both depends upon past level of accumulation. But one involves further raising those levels through reproductive expenditures. The other involves instead non-reproductive expenditure, which it is hoped, will lead to the grabbing of surplus value produced elsewhere in the system. A certain level of military expenditure therefore cuts one's ability to engage in price competition, even though the expensive and dangerous nature of total war means one cannot avoid price competition.

Over time, the heavy arms spenders can be expected to grow economically more slowly than the not-so-heavy arms spenders. This is of course what has happened over the last

two decades, with the US growing more slowly than Japan and West Germany (and now, with the USSR tending to grow more slowly than the US). This can be put another way: those with most 'leaks' offsetting the tendency of organic competition to rise, grow more slowly than those with fewer leaks. The world wide organic composition will rise under such circumstances, until increases in the rate of exploitation can no longer stop a fall in the rate of profit.

## Conclusion

In the first part of this article, *Theories of the Crisis*, we looked at various attempts to explain the recurrence of crisis since the early 1970s, and found them all inadequate. In this part we have attempted to deal, at an abstract level, with the dynamics of the system as depicted by Marx, and the factors (including those pointed out by Marx himself), which could offset the basic dynamic at various points in the development of the system. It has been argued that as the system gets older, the individual units of capital become a bigger and bigger proportion of the total system, making it more difficult for these offsetting factors to work – whether you are referring to crises, colonial expansion, or unproductive expenditure on war preparations. If this is true, we should expect Marx's prediction of about one hundred years ago about the long term trends in the system to begin to be realised.

We need now to go beyond such abstract, general considerations to look at the empirical trends of capitalism

in the twentieth century and its development today. That will be the aim of the next part of this article.

---

## Notes

1. This could not have been written without substantial discussion with and criticism from Pete Binns, Pete Green, Jon Fine and John Ure; although they are not, of course, responsible for any blemishes in it.

2. *Theories of the Crisis*, **IS2:9**. In an excellent job of cutting the article down to size, the editor inadvertently chopped out one important reference. This was in the section on ‘Long Wave’ theories: most of the references in note 41 come from an article by George Garvey, *Kondratieff’s Theory of Long Cycles* which appeared in the **Review of Economic Statistics**, Vol. XXV, (No. 4, Nov. 1943). Defenders of ‘Long Waves’ usually make reference to this article, but do not seem seriously to have read it, since it destroys most of their contentions.

3. K. Marx, **Grundrisse**, London 1973, pp. 623 and 637.

4. Although it did not necessarily follow that the *employed* section of the working classes would grow poorer. See Rosdolsky’s account of Marx’s views on this question, **The Making of Marx’s Capital** (London 1977), pp. 300–303.

5. K. Marx, **Capital One**, p. 645 (all quotations from **Capital** are from the Moscow edition).

6. **Grundrisse**, p. 749. There is a certain difference of tone in the **Grundrisse** and **Capital**. **Grundrisse** was an unpublished work, written at a feverish pace in the middle of a crisis which Marx thought might lead to an overthrow of the system, whereas the three volumes of **Capital** were an (unfinished) rewriting, reordering and more careful presentation of material and arguments. See Rosdolsky, **op. cit.**

7. See for example, the article by Thomas Weiss in the **Cambridge Journal of Economics**, December 1979.

8. For instance, those who accept the theories of monopoly associated with Baran and Sweezy; the Sraffian, neo-Ricardian

current of Harrison, Steedman, Hodgson, Glyn, etc.; and also critics of the Sraffians like Bob Rowthorn.

9. Ben Fine and Lawrence Harris, **Rereading Capital** (London 1979), p. 64.

10. **Capital Three**, p. 208. ‘Variable capital’ is the term used by Marx for capital invested in employing productive labour. ‘Constant capital’ is capital invested in means and materials of production.

11. The organic composition was depicted algebraically by Marx by the formula  $c/v$ , where  $c$  = constant capital and  $v$  = variable capital. Fine and Harris argue that there is a further, distinct but related concept in Marx – that of the ‘value composition of capital’: the ratio of the *current* value of the means and materials of production consumed to the current value of labour power consumed. The point is that the current value of the capital consumed is not necessarily the same as the value of the original investment – indeed, a point we will deal with later, the value of consumed capital will tend to be *less* than the value of invested capital, as increased capital reduces the socially necessary labour needed to produce each unit of capital. See Fine and Harris, **op.cit.**, pp. 58–60.

12. This is a consequence of the labour theory of value. I do not intend here to go into the debate over the validity of this theory. Readers are referred to the replies to the marginalists by **Hilferding** (reprinted in the English edition of Böhm-Bawerk, **Karl Marx and the Close of his System**, and Bukharin, **The Economic Theory of the Leisure Classes**) and to the replies to the Sraffians by Fine and Harris (**op. cit.**) and Pete Green (**IS 2 : 3** and **2 : 4**).

13. Assuming, that is, that  $s/v$ , the rate of exploitation, does not change. We will look later at what happens if it does change.

14. This is why some of the most popular theories based on the experience of the inter-war crisis (Baran and Sweezy, Steindl, Sternberg) were ‘underconsumptionist’ theories.

15. What Fine and Harris call ‘fundamentalist’ Marxist theories (Yaffe, Cogoy etc.) suffer from this fault. Yaffe, for instance, can

only explain the 30 year boom after World War Two by invoking state expenditure in a thoroughly Keynesian manner.

16. Which means a rise in the organic composition providing there is no change in the rate of exploitation, no change in the duration of fixed capital and that prices reflect values. In that case the capital-output ratio will be equivalent to  $c/(c+v+s)$ , where the organic composition is  $c/v$ .

17. Colin Clarke, **Lloyds Bank Review**, October 1978, and **Oxford Economic Papers**, November 1978.

18. See Joseph Gillman, **The Falling Rate of Profit** (London 1956), p. 56; Shane Mage, *The 'Law of the Falling Rate of Profit', its place in the Marxian theoretical system and its relevance for the US Economy* (PhD thesis, Columbia University 1963); Kalecki, **Theory of Economic Dynamics** (London 1954), p. 20; Kuznets, **Capital in the US Economy** (Princeton 1961), p. 199. Rowthorn, (**NLR 98**, p. 65) allows a rise in the organic composition in manufacturing between 1882 and 1892 'but this was more than offset by an enormous fall in public utilities (transport, electricity etc.)'.

19. Hodgson, **NLR 84**, p. 75.

20. *Alternative perspectives in Marxist theories of accumulation and crisis*, in Jesse Schwartz (ed.), **The Subtle Anatomy of Capitalism** (San Diego 1977), pp. 207–8. Cf. also Phillippe van Parijs, *The Falling Rate of Profit theory of the crisis, a rational reconstruction by way of an obituary*, **Review of Radical Political Economy**, 12:1, Spring 1980, pp. 3–4. I regard Parijs as being an accessory to a case of quite flagrant premature burial.

21. As for example Mandel does in his **Late Capitalism** (London 1975, p. 11), where he asserts that the renewal of fixed capital after crises is 'at a higher level of technology' and therefore 'with an increasing organic composition'.

22. **Western Capitalism since the War** (London 1968), p. 46.

23. The argument is usually expressed in terms of the need to 'go beyond Marx' and to take account (as he did not) of the need to transform the value of the inputs of the production process into prices as well as the output. This solution to the 'transformation



problem' is said to be due to the Polish economist of the turn of the century, von Bortkiewicz. So Glyn, for example, claims that von Bortkiewicz's 'simultaneous solution for the prices of production and the rate of profit demonstrates that any technique introduced by capitalists in order to cut costs will in fact increase the rate of profit if real wages are unchanged.' (**Bulletin of CSE**, Autumn 1973)

24. This point was made by Robin Murray in a reply to an attempt by Glyn to use a 'corn model' to disprove the falling rate of profit. (**CSE Bulletin**, 1973)

25. Fine and Harris, **op. cit.**, p. 59. I say 'they claim', because it is not self-evident that Marx makes the distinction as explicitly as they do (see **Capital One**, p. 612). However, this is not to detract from the utility of the distinction that they make. Unfortunately, they themselves do not seem to draw all the advantages they could from the distinction; they later seem to backtrack by saying that 'the debate between Glyn and Murray over whether the organic composition should be evaluated at current or historic value is essentially irrelevant.' (**Op. cit.**, p. 61)

26. The rate of profit using the original investment cost as the base for calculation would be  $r = s/c+v$ .

The effect of the devaluation of constant capital on this rate is two-fold. Firstly it cuts into the mass of profits by a sum,  $k$ , equal to this devaluation. Secondly it reduces the quantity of capital between which these profits must be shared.

To get the 'corrected' rate of profit we would therefore have to reduce both the numerator and the denominator in the above formula by the same sum,  $k$ .

If  $c+v$  is greater than  $s$ , the effect will be to *reduce* the rate of profit. If it is the other way about it will *increase* the rate of profit. The latter can therefore only occur when  $s$  is greater than  $c+v$ , i.e. where the rate of profit exceeds 100%! The assumption that this could generally be the case is manifestly unreal.

27. Of course, there is also the limiting case in which constant capital depreciation is just covered, with no surplus value being produced. There is also the more concrete case – which we will look at later – where a little surplus is produced, and used to

cover the consumption of the capitalist class and its hangers on, but is not available for investment.

**28.** Here it is worth commenting on one disproof of the mathematical arguments of Okishio and Himmelweit – Anwar Shaikh, *Political Economy and Capitalism: Notes on Dobbs' Theory of Crisis*, **Cambridge Journal of Economics**, Vol. 2, No. 2, June 1978. Shaikh argues that the disproofs ignore the existence of fixed capital. In this he is quite right. But his own mathematical disproof of Okishio and Himmelweit contains an assumption that makes it of very limited value. He takes the example of where the introduction of a new technique involves moving from a capital with a turnover of one cycle of production to that involving several cycles (i.e. from 1 to  $\infty$ ) The rate of profit on fixed capital must fall under these circumstances but this does not mean that the rate of profit must fall when there is a larger fixed capital *with the same turnover time*.

In such circumstances, if you continue – as Shaikh does – to accept the assumption of Okishio and Himmelweit that devaluation of fixed capital reduces the capital on which the rate of profit is calculated, then the rate of profit will rise. Shaikh's mistake is in not going far enough in challenging their assumptions.

**29. Capital Three**, p. 234. For an account of all of Marx's arguments on this score, see Rosdolsky, **op.cit.**, p. 398 *et seq.*

**30. Theory of Capitalist Development** (London 1946), p. 101-2.

**31.** See for instance, Okishio, *A Formal Proof of Marx's Two Theorems*, **Kobe University Review**, No. 18, 1972. *Cf.* also Ian Steedman, **Marx After Sraffa**, London 1977.

Their proof rests on showing that with accumulation the constant capital can expand to infinity. This means that the so-called 'maximum rate of profit' (the rate which could exist were all the value produced surplus value) will tend to zero. And if the maximum rate of profit tends to zero, so must something less than the maximum rate, the actual rate.

**32.** I. Steedman, **Marx After Sraffa**, p. 64; *cf.* also pp. 128–9.

33. **Bulletin of the Conference of Socialist Economists**, Autumn 1973, p. 103.

34. **Marxist Economics for Socialists** (London 1978) p. 103.

35. *Technical Change and the Rate of Profit*, in **Kobe University Economic Review**, 1961, p. 85 *et seq.*

36. **Bulletin of the CSE**, Autumn 1974.

37. 'If one hour's labour is embodied in sixpence, a value of six shillings will be produced in a working day of 12 hours. Suppose with the prevailing productiveness of labour, 12 articles are produced in those 12 hours, let the value of the means of production used up in each article be sixpence. Under these circumstances each article costs one shilling: sixpence for the value of the means of production and sixpence for the value newly added in working with these means. Now let some capitalist contrive to double the productiveness of labour ... The value of the means of production remaining the same the value of each article will fall to ninepence ... Despite the doubled productiveness of labour, the day's labour creates as before a new value of six shillings and no more, which, however, is now spread over twice as many articles ... The individual value of these articles is now below their social value: in other words, they have cost less labour time than the great bulk of the same article produced under the average social conditions ... The real value of the commodity is not its individual value, but its social value, that is to say, the real value is measured not by the labour time the article in each individual case costs the producer, but labour time socially required for production. If, therefore, the capitalist who applies the new method sells his commodity at its social value of one shilling, he sells it above its individual value, and thus realises an extra surplus value of threepence each ...' (**Capital One**, pp. 316–317)

38. It is easy to extend Marx's argument to a situation in which the amount of means of production employed per worker has to rise in order to get the full benefits of technical innovation.

Let us take the example of a firm producing under average conditions in an industry in which the ratio of living to dead

labour is 2:1 and the rate of exploitation is 100%. It turns out 150 worth of output in a single production period.

	C	V	S	output (units)	output price	rate of profit
1.	50	50	50	150	150	50%

Now assume that the firm is marginal to the whole industry – i.e. that its output is so small that a change in the costs of production hardly affect the average for the industry as a whole.

It introduces a capital intensive technique that enables it to produce the total output with the same amount of constant capital but half the workforce.

Because costs throughout the rest of industry remain the same, the price the firm gets for its output remains unchanged, even though its input costs have fallen. Its rate of profit will rise:

	C	V	S	output (units)	output price	rate of profit
2.	50	25	75	150	150	100%

Note that S here does not only include the surplus value produced directly inside the firm; it includes *excess* surplus value accruing to the firm from the rest of the economy because its production costs are less than the average. So its total surplus value and its rate of profit both rise. It is profitable to introduce the new technique.

But precisely because the new technique is more profitable than the old, other firms will adopt it. It will cease to be ‘marginal’ and will begin to exert a downward pressure on the average costs throughout the industry. Still more firms will be forced to adopt the technique and the price that can be obtained for the output will fall towards the new average social costs of production. Eventually a point will be reached at which the technique prevails throughout the economy. The firm now finds:

	C	V	S	output (units)	output price	rate of profit
--	---	---	---	-------------------	-----------------	-------------------

The new techniques will now have *cut* the average rate of profit in that industry.

Yet for each individual firm the initial effect of introducing the technique will be to raise the rate of profit (even the last firm to move from the old techniques to the new ones will find this – it will have been selling its produce at the new lower price at its old higher costs; now it can raise its rate of profit from below the new, lower average – e.g. if it is marginal before making the change over its rate of profit will have fallen from an initial 50% down to nought, and by introducing the technique it can raise this to 33%.

Formula 3 enables us to see the apparent plausibility of the argument of Glyn, Harrison, Okishio and Himmelweit. If the whole world-wide production of a certain sort of goods came from a single firm, with no substitutes available, then it would certainly not introduce new techniques if the result of doing so was to raise the organic composition of capital and reduce the rate of profit. The only thing giving it an incentive to raise the organic composition of capital would be a rise in labour costs which itself would cut the rate of profit anyway.

The whole argument of Steedman, Glyn, Harrison, Himmelweit, Okishio rests on this, unstated assumption. For their argument is about what happens in ‘industries’, not firms. So Steedman writes of the ‘selection of production techniques, industry by industry’. (*ibid.*) In their mathematical arguments, using matrix algebra, Okishio and Himmelweit refer to the effects of technical change in the ‘nth industry’.

Under capitalism, the units of production are not ‘industries’, but firms competing with each other in the same industries and straddling industries. And, as Marx shows, the individual capitalist firm can do things which lead to deleterious effects for the cost structure and rate of profit of the industry as a whole. The ‘disproof of Marx by these writers consists in arguing that the rate of profit cannot fall ... in a society which is not organised along capitalist lines. For there is no room in their matrices for the most basic unit of capitalism, the individual firm.

It is this too which enables some people who hold this view of the rate of profit also to hold the view that the labour theory of value is redundant. Their view of an economy organised into industries, not firms can be fitted into a neo-Ricardian, Sraffian model of the economy, which sees as superfluous Marx's insistence that interrelations between firms are based upon the law of value – the continual reduction of different, concrete labours to abstract labour. For elaboration of this point, see Pete Green, *The Necessity of Value*, **op. cit.**

**39.** The point is well argued in Fine and Harris, **op. cit.**, p. 84 and also pp. 60–61.

**40.** This is the implication of the argument put forward by 'Long Wave', 'structural crises' and 'crises of hegemony' theorists dealt with in *Theories of the Crisis*. It also seems to me to be the implication of the position developed by Fine and Harris, despite their general closeness to many of my arguments so far.

**41.** This a very sketchy summary of a complex process. To fill out some of the details see Nigel Harris, *World Crisis and the System*, **IS** (old series) **100** and *The Asian Boom Economies*, **IS2:3**; see also Chris Harman, *Poland and the Crisis of State Capitalism*, **IS** (old series) **93–94**.

**42.** This insight into the aging of the system is due to Mike Kidron; see, e.g., *The Wall Street Seizure*, **IS** (old series) **44**.

**43.** Section on *Foreign Trade* in **Capital Three**, chapter 14, pp. 232–3.

**44.** See Lenin, **Imperialism, the Highest Stage of Capitalism**. Barratt Brown (**Essays in Imperialism**, p. 35) and Kiernan (**Marxism and Imperialism**, p. 29) object that this overseas investment led to interest returning to Britain greater than the outflow of funds, and that therefore this outflow could not have provided a way to siphon off investment-seeking surplus value. The objection does not hold. Had the overseas investment not initially taken place, there would have been a much higher pool of funds seeking investment in Britain and therefore a higher level of investment with a higher organic composition. This extra investment would have generated its income in Britain just as the investment that in reality went

abroad did. This would have sought further investment in Britain in conditions of a higher organic composition than actually prevailed after the outflow of much previous investment-seeking surplus value. Overseas investment eased the problem of accumulation in Britain, despite the fact that it eventually led to an inflow of funds greater than the outflow.

45. It was the great merit of Rosa Luxemburg's **The Accumulation of Capital** to grasp this and the historically transitory role that imperialism could play in stabilising the capitalist system. However, she did not see this role in terms of its effect on the rate of profit. For a critique of her position, see **N. Bukharin** in R. Luxemburg and N. Bukharin, **Imperialism and the Accumulation of Capital** (London 1972), and Tony Cliff, **Rosa Luxemburg** (London 1980).

46. Lenin, **op. cit.**; N. Bukharin, **Imperialism** (London 1972).

47. Lenin and Bukharin do not seem to have noticed the effect of war expenditures on Marx's law.

48. See **Rejoinder to Left Reformism**, **IS** (old series) 7 (Winter 1961-62).

49. [**A Permanent Arms Economy**], **IS** (old series) 28, p. 10.

50. Kidron, **Capitalism and Theory** (London 1974), p. 16.

51. Ernest Mandel, **The Inconsistencies of State Capitalism** (London 1969), pp. 4 & 6.

52. **Late Capitalism** (London 1975), p. 288.

53. Mandel, **op. cit.**, p. 289. The article he refers to is **The Inconsistencies of Ernest Mandel**, **IS** (old series) 41.

54. Kidron himself confuses the issue a little by defining as 'unproductive' labour which initially created goods which are consumed non-productively. I do not think this definition is helpful. (See my **review** of **Capital and Theory** in **IS** (old series) 76.)

He has not been alone in recognising the peculiar effect of a large 'third department' on the trends in the organic composition of capital. M. Cogoy (*Teoria del Valore e Capitalismo Contemporaneo*, in Alberto Martinelli [ed.], **Stato e accumulazione de capitale**) notes that where you have a two

sector economy, what is productive for each capital is, via reproduction, reproductive for capital-as-a-whole. But when you have a three-sector economy, this no longer applies. Part of the surplus value becomes *revenue* for department three, which gives nothing back in return!

‘The accumulation of total capital is no longer equal to the sum of the surplus value produced by each of the individual capitals, but is the sum of the total surplus value *minus* the total value of production of the third sector. The capital in the third sector is capitalistically unproductive, insofar as it does not contribute to the accumulation of capital.’ (p. 112)

He does not make the mistake Kidron makes, over *only* seeing the constant capital in the third sector as a leak. ‘Total accumulation is not only diminished by the accumulation of sector III, but by all of sector III.’ (p. 112)

However, there is a weakness in his position compared to Kidron’s (or at least the earlier Kidron) – he does not complete his analysis over the effect of these ‘revenues’ on the rate of profit and tends to see them rather as diminishing the rate of profit. This is a point we will return to in a few pages.

**55.** This was the argument against any resort to von Bortkiewicz used by David Yaffe’s followers when they were in IS. See e.g. Dan Siquerra, *Marx, Bortkiewicz and IS*, in **IS Internal Bulletin**, April 1972.

**56.** It ended up suggesting that the total profit in the system was not equal to total surplus value or that total prices did not equal total value. Von Bortkiewicz and those who have followed him have gone on to claim that this proves the general uselessness of the labour theory of value and the contusions drawn from it in relation to the trend in the rate of profit.

**57.** Above all, the use of simultaneous equations can make people forget that production does not take place ‘simultaneously’, but over time.

**58.** Anwar Shaikh, in Jesse Schwartz, **op. cit.**, p. 106 *et seq.*; Miguel Angel Garcia in *Karl Marx and the formation of the average rate of profit*, **International Socialism 2 : 5**. In both



cases the divergences of total price from total value and total surplus value from total profit exist.

The reason for these divergences is no deep mystery. The formation of average prices takes place when profit rates are equalised between different capitals having different organic compositions. The prices of products produced by high organic composition rises above their value, and of those produced by low organic composition below their values. If workers' consumption goods are produced by high organic compositions, their price will rise above their values, while goods going to the capitalists (as luxury goods or means of production) will fall.

When this happens, the distribution of the social product between the classes is changed a little, altering the total profit. If account is not taken of this in equations total price seems to vary from total value and Marx to be 'refuted'.

But the variation of total profit from total surplus value is not random. One depends on the other, and, in theory one could be calculated from the other. As Anwar Shaikh has put the argument (in *Marx's theory of value and the transformation problem*, in J. Schwartz, **The Subtle Anatomy of Capitalism**, p. 125):

'Beginning with prices proportional to values, a sector's total price must fall (or rise) relative to its money cost price according to whether its organic composition is lower (or higher) than the social average if its particular money rate of profit is to conform to the general rate ...

'It does not follow that the general *money* rate of profit will continue to equal the general *value* rate of profit, once prices deviate from a strict proportionality with values ... The aggregate price of commodities is the total price of the commodities which form the social product. On the other hand, the aggregate cost price is the total price of the commodities – the means of production and the labour power – which form the inputs into the aggregate process of production ... The aggregate cost price is, in effect, the total price

of the means of production and the means of subsistence.'

In that case any change in relative prices will change the total money profit, since it depends on the total costs of products in money terms which have deviated from the total costs of production in value terms. Shaikh insists however, that the deviation does not affect the general validity of Marx's argument about the labour theory of value and the dynamics of capitalism.

It is only necessary 'to carefully distinguish between value which stems from production, and money price which is the form taken by value in circulation. With this distinction in hand, it is possible to see that money magnitudes are always different, both qualitatively and quantitatively from value magnitudes.' (*ibid.*, p. 125)

For, 'Like the deviations of process of production from direct prices, the money and value profit rate deviation is systematic and determinate ... It can be shown that the money rate of profit will vary with the value rate ...' (*ibid.*, p. 134) From Marx's analysis of capitalism one can grasp the trend of the value rate of profit, which in turn will directly influence the trend of the money rate of profit.

This was why Marx himself insisted that

'The fact that prices diverge from values cannot, however, exert any influence on the movement of social capital. On the whole there is the same exchange of products, although the individual capitalists are involved in value relations no longer proportionate to their respective advances and to the quantities of surplus value produced singly by each one of them.' (**Capital Two**, p. 393).

However, Shaikh adds, that

'From the point of view of individual capitals the situation is different ... Different forms of value have different effects on individual capitals, and these in turn have different implications for the dynamic process of accumulation and reproduction. It is through the actual movement of money prices that the system is regulated; as such the analysis of prices of production and their relation to values is of the

utmost importance to concrete analysis. The first step (which in most discussions of the ‘transformation problems is the *only* step) along this path is the derivation of prices of production from direct prices.’ (Shaikh, **op. cit.**, p. 127)

The same argument as Shaikh’s is put forward by a 1974 article of Okishio – (*Value and production price*, **Kobe University Economic Review**, 1974, p. 1 *et. seq.*). He shows, using an extension of Marx’s schema, ‘It is immediately clear that the second proposition of Marx, that the total surplus value of all sectors is equal to the total profit, does not generally hold, when we take into consideration the transformation of cost price into production price’. He gives a numerical example where the total surplus value is 120, but the total profit is 114. This, he says, is because with the equalisation of the rate of profit, the cost price in terms of production prices rises above the cost price in terms of values.

This in turn is because

‘In the example, sector II is the wage good sector, and sector I is the production good sector. As we assume the organic composition of capital in sector II is lower, and that in sector I higher than the average organic composition of capital, the production price in sector II is lower than its value and the production price in sector I is higher than its value. Thus in each sector the evaluation of the part C in terms of production price is higher and that of the part V is lower than its value.

‘As in our example, C is greater than V as a whole, the total of the cost price as a whole increases when the cost price is evaluated in terms of production price.’

But

‘If the amount of the surplus product measured in terms of value is re-estimated in terms of production price ... This is equal to the total profit already calculated in terms of production price ... The amounts 120 and 114 only differ because the same surplus product is differently estimated, the former in terms of value and the latter in terms of production price. Therefore it remains completely unchanged that the

surplus labour of workers is the unique source of profit.’  
(**ibid.**, p. 6)

Miguel Garcia’s account of the transformation of values into prices which is very similar to Shaikh’s (although arrived at independently) manages to evade the problem of ‘deviations’ of total profit from total surplus value in two ways.

First, he assumes that in the process of the transformation, the rate of exploitation (or rather the measure of it, the rate of surplus value) changes.

This is a realistic assumption, in that the transformation of values into prices does not affect the use values which workers consume as their real wages. It does however affect the price of these goods, and therefore the proportion of the total social wealth that has to be expended on labour power.

The difference between Garcia’s calculation and that of Shaikh and Okishio is in reality only one of presentation. Garcia’s method does bring out more clearly, however, the fact that it is the bask value relations that determine the rate of profit.

Garcia’s second point is that in practice there is unlikely to be any great difference in the organic composition of capital between the sector producing means of production and that producing wage goods. The means of production do include some items produced with a very high organic composition of capital – steel works, for instance – but they also include raw materials and semi-manufactured goods – produced by labour intensive processes. And all sorts of products can serve indiscriminately as means of production or wage goods (electricity, petrol, foodstuffs – which are means of production when fed to animals, or processed in factories, wage goods when bought directly by workers – buildings, vehicles etc.).

However in one important respect Garcia overstates his case. He fails to draw the conclusions from his own method for the rate of profit in circumstances where the organic composition of the luxury goods sector is higher than average. This is a point which we will return to below.

**59.** This peculiar effect of a high organic composition of capital in department III was one thing von Bortkiewicz did grasp.

However, his method of simultaneous equations made him see the fall and rise in the average rate of profit as taking place at the same time, cancelling each other out, rather than seeing the fall as preceding the rise in time. But this does not excuse a succession of marxist economists who have simply dismissed out of hand his discovery about the impact of department III.

**60.** In this, we are, of course, covering some of the ground dealt with in the discussion on O'Connor and Gough in *Theories of the Crisis*.

**61.** Which is why those who advise capitalism at the national level have been able to work out 'rates of return' on certain state expenditures. See e.g., the **Robbins Report on Higher Education**.

**62.** Mike Kidron, **Western Capitalism since the War** (London 1968), p. 40.

**63.** N. Bukharin, *Address to the Fourth Congress of the Comintern*, in **Bulletin of the Fourth Congress**, Vol. 1, Moscow, 24 November 1922, p. 7.

**64.** When I speak of 'new' dimensions of competition, I do not mean to imply that they did not exist before. In its early 'mercantile' period capitalism was closely dependent upon the activities of the state. But Marx, following the classical political economists, saw this as a declining phenomenon as capitalism became a self sustaining system. The point is that once capitalism entered the 'imperialist' stage, resort to the state became once again an increasing phenomenon in a way unforeseen by Marx.

**65.** As is argued, for instance, by Mandel, **Late Capitalism** (London 1978), pp. 292–93.

**66.** By Mike Kidron, in **Western Capitalism since the War** (London 1968) and **Capitalism and Theory** (London 1974), and by myself in a rejoinder to Mike Kidron, *Better a Valid Insight than a Wrong Theory*, **IS** (old series) **100**.

**67.** See the reference in footnotes 66, and, for an earlier version of the argument, Mike Kidron, *Rejoinder to Left Reformism*, **IS** (old series) **7**.

68. This was certainly true in both Germany and Britain in 1943–4. It was also true in Russia during the Stalin period. For an elaboration of the argument as applied to Russia, see Tony Cliff, **State Capitalism in Russia** (London 1974).

**Note by MIA:** This note and note 58 above differ from the printed version. According to Harman in the next installment of this series a typesetting error led to a number of paragraphs that should have been in note 58 being incorrectly added to note 68. This has now been corrected.

---