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Henryk Grossmann

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THE LAW OF ACCUMULATION AND BREAKDOWN OF THE CAPITALIST SYSTEM

Being also a theory of crises

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CONTENTS

Introduction 1
CHAPTER ONE: The downfall of capitalism in the existing literature 3
1. The point at issue 3
2. The conception of breakdown in the existing literature 5
3. How Kautsky finally abandoned Marx's theory of accumulation and of breakdown 10
CHAPTER TWO: The law of capitalist breakdown 13
1. Is there a theory of breakdown in Marx? 13
2. Preliminary remarks of a methodological nature. The coordinate system of economics—the need for simplifying assumptions; the assumption of constant prices as the starting-point of the analysis (The value of money held constant. The equilibrium state of the capitalist mechanism and its value=price coincidence. Exclusion of competition) 13
3. The equilibrium theory of the neo-harmonists. Otto Bauer's reproduction scheme 16
4. The conditions and tasks of 'schematic' analysis 18
5. Why was classical economy alarmed by the fall in the rate of profit despite an expanding mass of profit? 18
6. The views of classical economists on the future of capitalism. Ricardo, JS Mill 19
7. The Marxian theory of accumulation and breakdown 20
(a) The failure of valorisation due to overaccumulation 21
(b) The formation of the reserve army and of fallow capital due to overaccumulation 21
8. Marx's theory of breakdown is also a theory of crises 24
9. An anti-critical interlude 26
10. The logical and mathematical basis of the law of breakdown 31
11. Why the Marxian theory of accumulation and breakdown was misunderstood 33
12. The factors of the breakdown tendency. The problem of the periodicity of crises. The business cycle and the problem of establishing the length of its phases. The statistical empiricism of the 'business cycle' schools. The provisional exclusion of credit. The tempo of capital accumulation (of booms) and the rate of expansion of population 34
13. Crises and underconsumption theory. Reintroducing credit into the analysis. The cyclical process in the 'three markets': the impulse behind a boom in production (business). Repercussions of the industrial cycle on the money-market and the stock-exchange 40

PRINTED MATTER

14. The elasticity of accumulation. The problem of the sporadic and one-sided growth of individual spheres of industry. The relationship between the scale of the productive apparatus and the size of the sales turnover ... 44
15. The restricted development of productive forces under capitalism ... 45
16. The Marxian theory of imperfect valorisation due to overaccumulation and Luxemburg's theory of the impossibility of 'realising' surplus-value under capitalism ... 48
CHAPTER THREE: Modifying countertendencies (verifying the abstract analysis through the concrete appearances of capitalist reality) ... 50
PART ONE: Restoring profitability through structural changes internal to the mechanism of capital ... 52
1. Increases in the rate of profit through the expansion of productivity and its impact in reducing the costs of constant capital ... 52
2. Reducing the costs of variable capital through increases in productivity ... 55
3. Shortening of the turnover time and its impact on the rate of surplus-value and the rate of profit ... 55
4. The 'additional money-capital' required for an expanded scale of production ... 56
5. The conflict between use-value and exchange-value and increases in productivity (cheapening of the elements of production and expansion of the mass of use-values) ... 57
6. The emergence of new spheres of production with a lower organic composition of capital ... 59
7. The struggle to abolish ground-rent ... 60
8. The struggle to eliminate commercial profit. The economic role of the new 'middle class' ... 61
9. The economic function of 'third persons'. The impact of 'dependent' incomes on the process of reproduction ... 62
10. Expanding the scale of production on the existing technological basis (simple accumulation) ... 63
11. The impact of the periodic devaluation of capital on the accumulation process. Crises and wars as factors that postpone the breakdown ... 63
12. The expansion of share capital ... 65
13. The accumulation of capital and the problem of population. Fear of overpopulation ... 65
PART TWO: Restoring profitability through world market domination. The economic function of imperialism ... 68
1. The function of foreign trade under capitalism ... 69
(a) The importance of foreign trade for the increasing multiplicity of use-values ... 69
(b) Expansion of the market as a means of reducing the costs of production and circulation ... 69
(c) Foreign trade and the sale of commodities at prices of production deviating from values ... 70
(d) The international character of economic cycles ... 72
2. Foreign trade and world monopolies. The struggle for world raw materials ... 73
3. The function of capital exports under capitalism. Over-accumulation of capital and the drive for spheres of investment. The role of speculation in capitalism ... 74
(a) Earlier presentations of the question ... 74
(b) Overaccumulation and export of capital in Marx's conception ... 78
(1) Absolute overaccumulation of capital with the size of population and technology held constant ... 79
(2) Absolute overaccumulation of capital with a growing population and changing technology (increases in the organic composition of capital) ... 80
(c) An inductive verification ... 80
(d) The result. Intensified international struggle for investment outlets. Transformations in the relationship of finance capital and industrial capital ... 80

1

THE LAW OF ACCUMULATION AND BREAKDOWN OF THE CAPITALIST SYSTEM

Being also a theory of crises

(Partly summarised and partly translated)

Introduction (pp V–XI)

The present book forms part of a larger work to appear soon on the tendencies of development of capitalism in the theory of Marx. The origins of this work lie in lectures prepared in the course of 1926-27 at the Institut fur Sozialforschung for the University of Frankfurt.

The results of my research are twofold. (1) For the first time ever, the method underlying Capital has been subjected to a reconstruction, and (2) on this basis important areas of Marx's system of theory have been described in a fundamentally new perspective. One of these new findings is the theory of breakdown, which is expounded below and which forms the cornerstone of the economic system of Karl Marx. For decades this theory was the centre-piece of fierce controversies of theory, yet in all that time no one ever attempted a reconstruction or definition of its place in the system as a whole. But it would be a useless task to increase the dogmas surrounding Marxism with a new interpretation and simply reinforce the view of Brief that Marxism has become a matter of interpretation. My view is that the unsatisfactory state of the literature on Marx is ultimately rooted in the fact—which will appear strange to some—that until today no one has proposed any ideas at all, let alone any clear ideas, about Marx's method of investigation. There has been a general tendency to cling to the results of the theory: these have been the focal point of interest, on the part of both critics as well as defenders. In all this the method has been totally ignored. One simply forgot the first rule of any scientific investigation—which is that, however fascinating a conclusion might appear, it is something worthless unless one knows the way in which it was established. A conclusion can after all only become a matter of conflicting interpretation when it is completely divorced from the path that led to its formulation.

A proper exposition of Marx's method of investigation will have to be left to my major work. The short methodological remarks that follow appear to me to be indispensable only insofar as they bear on the understanding of the arguments of this book.

The real world of concrete, empirically given appearances is that which is to be investigated. However, in itself this is too complicated to be known directly. We gain an approach to it only by stages (stufenweise). To this end we make various simplifying assumptions (vereinfachende Voraussetzungen) that enable us to gain a cognition of the object of knowledge in its nuclear structure (Kernstruktur). This is the first stage of cognition in Marx's method of approximation to reality (Annaherungsverfahren). This is the particular methodological principle that finds its specific reflection in Marx's reproduction schemes, which form the starting-point of his entire analysis, and which already underlie the arguments of Vol.1 of Capital. Among the numerous assumptions connected with the reproduction schemes are the following assumptions, for example—that the capitalist mode of production exists in an isolated state, ie, that foreign trade is excluded; that society consists of capitalists and workers alone, hence that we abstract from all the so-called 'third persons' in the course of our analysis; that commodities exchange at value; that credit is ignored; that the value of money is assumed constant, and so on and so forth.

Now it is clear that, thanks to these fictitious assumptions, we achieve a certain distance from empirical reality, even while the latter remains the target of our explanations. It follows that conclusions established on such a structure of assumptions can have a purely provisional character, and therefore that the initial stage of the cognitive process must be followed by a second, concluding stage. Any set of simplifying assumptions will go together with a subsequent process of correction that takes account of the elements of actual reality that were disregarded initially. In this way, stage by stage, the investigation as a whole draws nearer to the complicated appearances of the concrete world and becomes consistent with it.

Yet an almost incredible thing happened—people saw that Marx works with simplifying assumptions, but they failed to notice the purely provisional nature of the initial stages and ignored the fact that in the methodological construction of the system each of the several fictitious, simplifying assumptions is subsequently modified. Provisional conclusions were taken for final results. Otherwise it is quite impossible to understand how E Lederer ('Konjunktur u. Krisen', Grundr. d. Sozialokonomik, IV/I Tubingen, 1925, S.368) could criticise Marx's method the way he does: he argues that simplification is part of any theory, of course, but he himself would not wish to go as far in this direction as Marx did; because 'excessive simplification only creates problems in the way of our understanding. If, like Marx we suppose the whole economic universe to be composed only of workers and capitalists, then the sphere of production becomes too simple'. Salz (id. IV/I S.219) reiterates this criticism of 'over-simplification'. Moreover, only this pure misunderstanding of Marx's method could explain why Sternberg (Der Imperialismus, Berlin, 1926, S.301,303) actually reproaches Marx for 'having analysed capitalism under the quite unrealistic assumption that there is no non-capitalist sector. Such an anlysis works with assumptions that have not been demonstrated'. Finally, Muhs (Anti-Marx, Jena, 1927) goes so far as to say that 'Marx obviously indulged in massive orgies of abstraction' and introduced 'impossible because irrational assumptions that were bound to defeat any analysis of the historic process'.

Anyone who has grasped the essence of Marx's method will immediately be struck by the totally superficial character of these criticisms, and a critique of them would be quite superfluous. It is also not difficult to see why in the existing debates on the theory of Marx the greatest confusion could

and was bound to arise. Marx's method of approximation to reality is defined by two stages, sometimes even three. Entire phenomena and problems are tackled at least twice, initially under a set of simplifying assumptions, and later in their final form. As long as this remains an obscure mystery, we shall repeatedly run up against 'contradictions' between the individual parts of the theory. To take one example, this is the source of the famous 'contradiction' discovered by Bohm-Bawerk between Vols.1 and 3 of Capital.

The problem analysed in this book was tackled by Marx in three stages. Initially he examines the contradictions that define the process of reproduction in its normal trajectory, or he examines simple reproduction. At a second stage of his analysis, he focuses on the impact of the accumulation of capital with its resulting tendency towards breakdown. Finally, in the third stage Marx investigates the factors that modify this tendency.

In the terms of content, this problem is the central or, rather, *the* problem of capitalism. The question I shall examine is whether fully developed capitalism, regarded as an exclusively prevalent and universally widespread economic system relying only on its own resources, contains the capacity to develop the process of reproduction indefinitely and on a continually expanding basis, or whether this process of expansion runs into limits of one sort or another which it cannot overcome. In examining this problem the moments specific to the capitalist mode of production have to be drawn in. Ever since the beginnings of human history it has always been the capacity of the individual worker with his labour-power L to set into motion a greater mass of the means of production M that has signalised technological and economic progress. Technological advance and the development of mankind's productivity are directly expressed in the growth of M relative to L. Like every other form of economy, socialism too will be characterised by technological advance in its immediately natural form M:L.

The specific nature of capitalist commodity production shows itself in the fact that it is not simply a labour-process in which products are created by the elements of production M and L. Rather, the capitalistic form of commodity production is constructed dualistically—it is simultaneously a labour-process for the creation of products and a valorisation-process. The elements of production M and L figure not only in their natural form, but at the same time as values c and v. They are used for the production of a sum of values w, and indeed only on condition that over and above the used-up value-magnitudes c and v there is an excess s, that is, $s=w-(c+v)$. The capitalist expansion of production, or accumulation of capital, is defined by the fact that the continuous expansion of M relative to L occurs on the basis of the law of value, ie, that it takes the specific form of constantly expanding capital c relative to the sum of wages v, such that both components of capital are necessarily valorised; from which it follows that the reproduction process can only be continued and expanded further if the advanced, constantly growing capital $c + v$ can actually secure a profit, s (surplus value). This problem can then be defined as follows—is a process of this sort possible in the long run?

The following study is divided into three chapters. The first chapter surveys the existing literature on Marx's theory of breakdown and also describes the views of more recent Marxists about the end of capitalism. The second chapter is an attempted reconstruction of the Marxian theory of accumulation and the theory of breakdown (this being the basic element of the theory of crisis) in its pure form, unfettered by the working of 'countertendencies'. Finally, the concluding chapter attempts to grasp these counteracting tendencies which modify the law of breakdown in its pure form. By this means it seeks to establish a certain basic consistency between the actual reality of capitalism and the law in its pure operation. Here it is not a matter of describing in detail the actual processes that go on in the environment of capitalism. On principle I shall abstain from presenting the extensive and rather exhausting factual material. The work is intended to bear a theoretical character, and certainly not a descriptive one. To the extent that factual material is presented, the aim is to illustrate the various theoretical propositions and deductions. I have only tried to show how the empirically ascertainable tendencies of world economy which are regarded as defining characteristics of the latest stage of capitalism (and listed in various writings on imperialism—monopolistic organisations, export of capital, the struggle to divide up the sources of raw materials, etc) are only secondary surface appearances that stem from the essence of capital accumulation as their primary basis. Through this inner connection it is possible to use a single principle, the Marxian law of value, to explain clearly all the appearances of capitalism without recourse to any special ad hoc theories, and to throw light on its latest stage, imperialism. I do not need to labour the point that this is the only form in which the tremendous consistency of Marx's economic system can be clearly drawn out.

Because in the study which follows I deliberately confine myself to describing only the economic presuppositions of the breakdown of capitalism, let me dispel any suspicion of 'pure economism' from the very start, in order to avoid misunderstanding. It is perfectly unnecessary to waste paper over the connection between economics and politics—that there is a connection is obvious. However, while Marxists have written extensively on the political revolution, they have neglected to deal theoretically with the economic aspect of the question and have failed to appreciate the true content of Marx's theory of breakdown. My sole concern here is to fill in this gap in the tradition.

CHAPTER ONE

The downfall of capitalism in the existing literature

1. The point at issue (pp1-23)

Already prior to Marx certain representatives of political economy had a clear presentiment of the historically ephemeral character of the bourgeois mode of production. Sismondi was the first to uphold it against Ricardo. He argued that in the course of time every mode of production becomes 'intolerable' and 'the social order, continually threatened, can only be maintained by force.' (See Grossmann, Sismonde de Sismondi et ses theories economiques, 1924 S. 63/64). However, for capitalism this conclusion was based not on an economic analysis of its mode of production but purely on historical analogies. Therefore Marx was right to say, 'at the bottom of his (Sismondi's) argument is indeed the presentiment that new forms of the appropriation of wealth must correspond to the productive forces that have developed in the womb of capitalism...that the bourgeois forms are only transitory' (TSV III, p56). About 25 years later Richard Jones developed the same insights when he described capitalism 'as one stage in the development of society'. But like Sismondi, Jones gained his insight into the historically transitory character of capitalism through a mainly historical-comparative analysis of successive forms of economy.

The development of the productive power of social labour is the driving force of historical evolution. When the earliest modes of production proved unable to develop the productive forces of society any further, they were bound to disintegrate. 'Hence the necessity for the separation, for the rupture, for the antithesis of labour and property....The most extreme form of this rupture, and the one in which the productive forces of social labour are also most powerfully developed, is capital' (TSV III, p423). Marx writes, 'It is one of the civilising aspects of capital that it enforces...surplus-labour in a manner and under conditions that are more favourable to the development of the productive forces... than under preceding forms of slavery, serfdom, etc' (Cap 3, p799).

Yet at a certain point in its historical development capitalism fails to encourage the expansion of the productive forces any further. From this point on the downfall of capitalism becomes economically inevitable. To provide an exact description of this process and to grasp its causes through a scientific analysis of capitalism was the real task Marx posed for himself in his Capital. His scientific advance over Sismondi and Richard Jones consisted precisely in this.

But how did Marx carry through this analysis? He says, at a certain stage 'the monopoly of capital becomes a fetter upon the mode of production which has flourished alongside and under it. The centralisation of the means of production and the socialisation of labour reach a point at which they become incompatible with their capitalist shell. This shell is burst asunder. The knell of capitalist private property sounds' (Cap 1, p929).

Marx refers to an antagonism between the productive forces and their capitalist shell. What is this, however? There is nothing more erroneous than the prevalent identification of the development of productive forces with the growth of c in relation to v. This simply confuses the capitalist shell in which human productivity obtains a form of appearance with the essence of that productivity itself. The development of productivity has in and for itself nothing at all to do with the capitalist valorisation process, which, as a process of formation of values, has its roots in 'abstract, human labour'. The antagonism that Marx refers to is an antagonism between the forces of production in their material shape as elements of the labour-process, as means of production and labour-power, and these same forces in their specifically capitalist shell, or in the shape they assume as values c and v in the valorisation-process. In Vol.3 Marx clearly attacks 'the confusion and identification of the process of social production (ie a specific social form of production, Grossmann) with the simple labour-process....Insofar as the labour-process is simply a process between man and nature, its simple elements remain common to all social forms of development. But each specifically historical form of this process further develops its material foundations and its social forms. At a certain stage of its maturity, the specific historical form is discarded and gives way to a higher form.... A conflict then ensues between the material development of production and its social form' (Cap 3, p861), that is between M:L and c:v. The form of the productive forces peculiar to capitalism, their capitalist shell, c:v, becomes a fetter on the form they share in common with all modes of production, M:L. The solution of this problem forms the specific task of this book.

It is quite characteristic of the intellectual crisis or even decay of contemporary bourgeois economics that it denies that there is any such problem as the problem of accumulation! The apologetic optimism of bourgeois economics has simply extinguished all interest in a deeper understanding and analysis of today's mechanism of production. Economists like JB Clark and Alfred Marshall imagine that the psychological, individual motivations that drive capitalists to 'save' account for the entire problem of the accumulation of capital. They do not bother to ask if there are not objective conditions that determine the scope, the tempo and finally the maximal limits of the accumulation of capital. If accumulation were purely a function of the subjective propensities of individuals and the number of these individuals grows constantly, how do we explain the fact that the tempo of accumulation shows periodically alternating phases of acceleration and slowing down? How do we account for the fact that the tempo of accumulation of the capitalistically advanced countries is often slower than that of the less developed countries, although the number of those individuals is obviously greater in the former? Elsewhere Marshall tries to explain things with the banal observation that the extent of the demand for capital depends on the level of the rate of interest. But Marshall breaks off his analysis where the real problems begin. Prior to the World War the USA was massively in debt to Europe despite its high interests rates. On the other hand, in 1927 the USA exported capital sums totalling 14.5 billion dollars, and this export of capital showed no signs of abating, although the rate of

interest had already fallen to 3.5%. This also contradicts the analogus view of Cassel that the 'low rate of interest that prevails during a depression obviously acts as a powerful stimulus to the expanded production of fixed capital' (Cassel, Theoretische Sozialokonomik, 3 A. 1923 S.570). Why, despite the low rate of interest in the USA, did the expansion of production come to a halt in that country, or why was capital exported and not invested at home? If one answers that higher rates of interest prevailed abroad, the problem is only displaced. For why did the rate of interest fall in the USA? Because of an 'oversupply' of capital there? Then under what conditions does such an 'oversupply' of capital arise?

This brings us back to the problem that is completely ignored in contemporary economics. In this respect Marx was closer to classical economy in the way he posed the problem. But whereas classical economy presumed the possibilities of an unlimited accumulation of capital, Marx predicted insuperable limits to the development of capitalism and its inevitable economic downfall.

How did Marx conduct this proof? This brings us to the well-known debate regarding the form in which Marx grounded the 'necessity of socialism'. K Diehl (Uber das Verhaltnis von Wert und Preis im okonomischen System von Karl Marx, Jena, 1898 S.42) tells us, 'Marx's theory of value never formed the fundamental basis of his socialistic principles'. According to him, Marx's socialism is grounded not in the Marxian law of value, but in his materialist conception of history. As proof of the argument that the labour theory of value contains little that is specifically socialist, Diehl cites the case of Ricardo who likewise saw in labour the most suitable measure of value. For Diehl the moral postulate of a just distribution of income forms the only possible link between socialism and the law of value. However, as there is no such postulate in Marx, Diehl rejects the idea that Marx himself draws any such connection.

This fairly widespread conception is totally false. Under capitalism the entire mechanism of the productive process is ruled by the law of value, and just as its dynamic and tendencies are only comprehensible in terms of this law, its final end, the breakdown, is likewise only explicable in terms of it. In fact, Marx provided such an explanation.

The idea that capitalism 'creates its own negation with the inexorability of a natural process' was already enunciated in Vol.1 in the section on the historical tendency of capitalist accumulation. However, there Marx did not explicitly state how this negating tendency asserts itself, how it must lead to breakdown of capitalism or through what immediate causes the system meets its economic downfall. If one then turns to the corresponding chapter of Vol.3 dealing with the 'law of the tendency of the rate of profit to fall', one is immediately disappointed. The very causes that affect the process of accumulation also produce the fall in the rate of profit. But is this fall a symptom of the breakdown tendency? How does this tendency work itself out? Methodologically speaking, this is where Marx should have demonstrated the breakdown tendency. Indeed, Marx does ask, 'What must be the form of this double-edged law of a decrease in the rate of profit and a simultaneous increase in the absolute mass of profit arising from the same causes?' (Cap 3, p215). One feels, now the decisive answer will come. But it doesn't come.

Already in 1872 a Petersburgh reviewer of Capital Vol.1 wrote: 'The scientific value of such an inquiry lies in the illumination of the special laws that regulate the origin, existence, development and death of a given social organism and its replacement by another, higher one' (Postface to the Second Edition, Cap 1, p102). Citing these words with the comment that they provide 'a striking description' of his own actual method, Marx says about the dialectical method that 'it includes in its positive understanding of what exists a simultaneous recognition of its negation, its inevitable destruction: because it regards every historically developed form as being in fluid state, in motion, and therefore grasps its transient aspect as well' (id. p103). In this sense, Bernstein was perfectly right in saying, against social democracy's views about the end of capitalism, 'If the triumph of socialism were truly an immanent economic necessity, then it would have to be grounded in a proof of the inevitable economic breakdown of the present order of society'. However, Bernstein himself believed that such a proof was impossible, and that socialism could not therefore be deduced from any economic compulsions (Bernstein, Vorwarts, 26 March, 1899). In Marx's theory of the 'negation of the negation' Bernstein could only see only one of the 'pitfalls of the dialectical method of Hegel', a product 'of one of the residues of Hegel's dialectic of contradictions', a 'schema of development constructed on Hegelian lines' (Bernstein, Die Voraussetzungen des Sozialismus, Stuttg. 1899, S.22 f) because Marx had expressly avoided any proof of the law of breakdown. The theory of breakdown was, according to him, a 'purely speculative anticipation' of a process that had barely sprouted. This critique was based exclusively on the empirical fact that the material position of certain strata of the working class had improved. For Bernstein this was proof that 'the actual development had proceeded in a quite different direction' to that predicted by Marx! As if Marx had ever denied the possibility of such improvements in the position of the working class at specific stages of capitalist development!

But how did Kautsky answer Bernstein's critique? If Kautsky had tried to show that relative wages may fall even while real wages (measured in product terms) rise, and that even in this favourable situation the 'social misery' and dependence on capital of the working class actually increase—he would have contributed to deepening Marx's theory. But Kautsky simply rejected the theory of breakdown, arguing that 'a special theory of breakdown was never proposed by Marx or by Engels' (Kautsky, Bernstein u. das soz-dem. Programm, Stuttg. 1899, S.42). Kautsky rejected the notion that the Marxian theory of breakdown clearly establishes a tendency for the position of the working class under capitalism ultimately to deteriorate, in the strong sense of an absolute worsening of its situation, an absolute growth of its economic misery. In fact, Kautsky proposed the very opposite idea. According to him, Marx and Engels were distinguished from the other currents of socialism by the circumstance that apart from the tendencies that depress the proletariat, they also foresaw, unlike other socialists, positive tendencies that elevate its position. They foresaw 'not simply an increase in its misery.. but also an increase in its training

and organisation, its maturity and power' (id. S.46). 'The notion that the proletariat increases in maturity and power is not only an essential part of Marx's theory of the breakdown of capitalism, it is its defining part' (id. S.45). Thus Kautsky quietly ignored Bernstein's argument that for the triumph of socialism to be an immanent economic necessity it would have to be traced to underlying economic causes.

Yet the same Kautsky, who in dealing with Marx's theory one-sidely accentuated the tendencies that elevate the working class, would observe some years later that from a certain stage on these positive tendencies come to a standstill, that a retrograde movement gains the upper hand. 'The factors that led to an increase in real wages in the last few decades have already been wiped out' ('Verelendung u. Zusammenbruch', Neue Zeit 26, 1908). Kautsky analyses these various factors. Quite convincingly he shows that the trade unions have been continuously pushed back on the defensive, while the capitalists, united in various associations, have enormously expanded in strength. 'All of which means that the period of rising real wages for one stratum of the working class after another has come to an end, and in many sections will even face a period of wage cuts. This holds true not only for periods of temporary depression, but even for periods of prosperity' (id. S.549). A year later (1909), 'It is remarkable that already in the last few years of prosperity, when industry worked continuously and there was a constant complaint of labour-shortage, workers proved unable to increase their real wages, and that they even fell. For various strata of the German working class this has been proved in unofficial studies. In America there is an official acknowledgement of this fact for the entire working class'. Kautsky sees the facts, but his description does not go beyond this purely empirical level. Having rejected Marx's theory of breakdown, he finds it impossible to account for them in terms of Marxist theory. What deeper causes govern the movements of wages and what their fundamental tendency is he does not explain.

Thus in the famous 'debate on revisionism' there was no real dispute about the theory of the economic breakdown of capitalism, because both Kautsky and Bernstein abandoned Marx's theory of breakdown, and the debate itself revolved around less important issues that were partly terminological.

Yet this remarkable result of the Bernstein-Kautsky debate was not the only consequence of the fateful omissions in the exposition of Vol.3 of Capital. Right down to today there rules an absolute chaos of conflicting views, quite irrespective of whether the individuals concerned are bourgeois writers or belong to the radical or moderate wing of the workers' movement. Both the 'revolutionist' Tugan-Baranovsky and the 'Marxist' Hilferding could reject the idea of a breakdown of capitalism, of absolute, unsurpassable limits to the accumulation of capital, and put in its place the theory of a possible unlimited development of capitalism. It was a great historical contribution of Rosa Luxemburg that she, in a conscious opposition to the distortions of the 'neo-harmonists' adhered to the basic lesson of Capital and sought to reinforce it with the proof that the continued development of capitalism encounters absolute economic limits.

Frankly, one has to regard Rosa Luxemburg's effort to have failed. According to her exposition, capitalism simply cannot exist without non-capitalist markets. If this line of reasoning were true, the breakdown tendency would have been a constant symptom of capitalism from its very inception, and it would be impossible to explain either periodic crises or the characteristic features of the latest stage of capitalism called 'imperialism'. Yet Rosa Luxemburg herself had the feeling that the breakdown tendency and imperialism only appear at an advanced stage of accumulation and find their sole basis in this stage. 'There is no doubt that the explanation for the economic roots of imperialism must be deduced from the laws of capitalist accumulation' (Accumulation of Capital: An Anti-critique, p61). However, Luxemburg herself provided no such deduction and even made no attempt in this direction. Her own deduction of the necessary downfall of capitalism is not rooted in the immanent laws of the accumulation process, but in the trancendental fact of an absence of non-capitalism from the sphere of production to that of circulation. Hence the form in which she conducts her proof of the absolute economic limits to capitalism comes close to the idea that the end of capitalism is a distant prospect because the capitalisation of the non-capitalist countries is the task of centuries.

Moreover, the collapse of the capitalist system is conceived in a mechanical fashion. Once capital rules the entire globe, the impossibility of capitalism will become evident. Hence one anticipates in theory a situation in which capitalism will be automatically destroyed, although we know that there are no absolutely hopeless situations. Luxemburg thus renders the theory of breakdown vulnerable to the charge of a quietist fatalism in which there is no room for the class struggle.

No other attempts were ever made to examine the problem of the 'catastrophe' of capitalism, as the neo-harmonists deliberately called it. Some examples will show the fantastic confusion that prevails today on this decisively important aspect of Marx's theory.

2. The conception of breakdown in the existing literature (pp23-59)

First I shall deal with VG Simkhovitch, professor at the University of Columbia, New York, with the German professors W Sombart and Spiethoff and with the Frenchman Georges Sorel.

Simkhovitch correctly disputes the view of Anton Menger that Marx's socialism is rooted in the moral interpretation of the theory of value. According to him, this would simply wipe out the distinction between the early utopian socialism and modern scientific socialism (Marxism versus socialism, p2). Like Diehl, Simkhovitch argues that the Marxian idea of breakdown is anchored not in the theory of value, but in a historically constructed proof. The decisive element is the materialist conception of history expounded in the Communist Manifesto, which, Simkhovitch argues, 'contains no reference at all to any theory of value' (p4). Thus whereas Bernstein saw in the Marxian theory of breakdown a schema of development constructed on Hegelian lines, something derived in a purely speculative manner from Hegel's dialectic of contradiction, Simkhovitch sees in it a

reflection and generalisation of actual circumstances and tendencies that prevailed empirically at the time of the writing of the Manifesto. Like the pessimistic wage-fund theory of the classicals, Marx's theory of the immiseration was drawn from actual historical circumstances.

As at the start, so in Capital also 'Marx remained in his theory a typical free-trader of the classical variety' (p69). Only this position could allow Marx to establish his theories of immiseration and breakdown. Of course, Marx lived to see the introduction of the 10-hour day and factory legislation. 'But it was too late; Marx's theory had acquired a finished shape and formulation. As a theory it was profound, but it bore no relation whatever to the social changes going on before his very eyes' (p70). From the wage-fund theory Marx accepted the assumption that the working class could never improve its situation. To support this view he used Andrew Ure's theory of impact of machinery on labour (p70). 'Marx constructed his theory of wages and population around these facts. This data tended to suggest that in industrial society technological improvements lead to a surplus population, immiseration of the unemployed and low wages' (p71). Through the setting free of workers such improvements would lead to the formation of a reserve army which would in turn keep wages low. Hence Marx precluded the possibility of any wage increases that might threaten the continuous expansion of capital (p73). With a fairly arbitrary jump, Simkhovitch shifts from the descriptive part of Capital where Marx deals with the impact of the introduction of machinery to the chapter on accumulation where he summarises the general historical tendencies of accumulation (p76). And because, according to Marx, the progress of accumulation sets free an ever greater mass of workers, the result is an increasing pauperisation of the working class (p76).

After this description of Marx's theory, its critique becomes all too easy. Simkhovitch claims to test the theory in the light of data on wages. He concludes that the 'experience of all the industrial countries without exception shows a continuous and unprecedented improvement in the position of the working classes' (p93). With this reference to empirical facts Simkhovitch imagines he has disposed of the whole of Marx's system, because its cornerstone is the theory of immiseration (p82).

Simkhovitch does not notice that he has confused two things which have nothing to do with one another, and which, in Marx, stand quite independent of one another—the empirical fact of the displacement of workers through machinery has nothing to do with the Marxian theory of immiseration or with the process by which workers are 'set free' due to the general law of capitalist accumulation and its historical tendency. Whereas the 'setting free' of workers through machinery which Marx describes in the descriptive portion of his book is an empirical fact, the theory of immiseration and breakdown as expounded in the chapter on accumulation is a theory derived in a deductive manner, on the foundation of the law of value, from the fact of capitalist accumulation, and a theory that makes no sense apart from the law of value. For the 'setting free' of workers through the introduction of better machinery is a result of the technological relation M:L. It is an expression of technological advance, and as such something characteristic of any mode of production, including the planned economy of socialism. The Marxian theory of immiseration and breakdown, on the other hand, flow from the fact that in the capitalist accumulation process means of production and labour-power are applied in their value-forms c and v. These value-forms are the primordial source of the absolute necessity for valorisation, with all its consequences: imperfect valorisation, the reserve army, etc. 'The fact that the means of production and the productivity of labour increase more rapidly than the productive population expresses itself...under capitalism, in the inverse form that the working population always increases more rapidly than the valorisation requirements of capital' (Cap 1, p798).

W Sombart's treatment of the theory of breakdown is characterised by complete superficiality and an almost incredible ignorance of facts. According to him, Marx founds the necessity for the proletarian revolution on his theory of crises and his theory of immiseration. He claims that the theory of crises was proposed initially in the Manifesto and not developed by Marx or Engels or by anyone after that. The same is supposed to hold true of the theory of immiseration. It is a striking sign of Sombart's theoretical illiteracy that in a work of two volumes running into a thousand pages and devoted to the theme of 'Marxism', the Marxian theory of accumulation is not mentioned once with the problem of the downfall of capitalism! Sombart's hopeless empiricism is obvious in the way he tries to finish off Marx's theory. The two theories in question are described as an expression of the 'situation' or the 'mood' of the 'circumstances of that time'. This epoch has been relegated to the past, however, and recourse to experience is enough to establish the weakness and untenability of those theories. Now quite apart from the fact that for Sombart any type of deduction is a scholastic meditation, his work abounds in a manifest ignorance of Marx's writings. Sombart claims that after its formulation in the Manifesto, the theory of crises was never developed any further by Marx. A mere glance at the dozens of important passages in Vols 2 and 3 of Capital and the 100 pages of the relevant section of Theories of Surplus-Value (Pt.2, ch.17) would be enough to convince anyone of the baseless character of these assertions. Sombart is quite unaware of the fact that the schematic description of the reproduction process in Vol.2 was intended to specify the conditions that define its normal trajectory and which, insofar as they cannot be maintained turn into as many conditions of its abnormal crisis-ridden trajectory.

Later we shall see that the Marxian theory of immiseration was not a formulation based on the 'circumstances of the time' but a deduction drawn logically from the Marxian theory of value and accumulation.

A Spiethoff's great 'discovery' in the field of crisis theory is his attempt to explain crises in terms of the overproduction of means of production relative to means of consumption. Spiethoff tries to present Marx's own theory as an underconsumptionist one: the final breakdown of capitalism is supposed to follow as a consequence of the insufficient consumption of the masses (Spiethoff, 'Einige Bemerkungen zur Lehre von der Sozialisierung', Schmollers Jahrbuch, 1919, I, 439). Where Spiethoff finds such a formulation in Marx he does not say. But it enables him to prove Marx's

theory false by recourse to facts. 'The actual course of development was quite different to the one Marx supposed....' Capitalism does not suffer from restricted consumption, according to him. The sharpest market fluctuations are found in the spheres of industry that produce means of production, not in those that produce the means of consumption. Elsewhere Spiethoff adds some further elements to his description of Marx's theory of crises ('Krisen', Handworterb. d. Staatswissensch. IV. Aufl., 1925). 'Marx's starting-point is the falling tendency of the rate of profit'. Whether and what sort of connection there is between this tendency of the rate of profit and crises—this question which is so fundamental to any understanding of the Marxian theory of crises—is quietly ignored. He simply produces a few quotations from Capital and then explains that Marx confused general tendencies pertaining to the final collapse of capitalism with short-term fluctuations. But because Spiethoff himself cannot grasp the logical relationship between these two elements he passes over the real kernel of Marx's theory of crises and breakdown without the least understanding and interprets the theory as one of disproportionality and underconsumption at the same time.

Whatever Sorel has to say about the theory of breakdown only proves that for him the economic side of Marx's system remains a book of seven seals. He tries to justify his own lack of comprehension by raising it to the status of a general principle. In other words, one does not really need to understand the Marxian theory of breakdown, for the 'final catastrophe' is simply a 'social myth' designed to rally the proletarian masses for class struggle. The basis of this entire conception is the view that 'men of action would lose all sense of initiative if they reasoned things out with the rigour of a critical historian' (Sorel, Le decomposition du marxisme, Paris, 1907).

To take yet another version of bourgeois criticism, Th G Masaryk (Die philosophischen u. soziologischen Grundlagen des Marxismus, Wien, 1899) argues that Marx and Engels expected the collapse of bourgeois society in their own lifetime. He ascribes to Marx the argument that the ever-growing concentration of capital would lead to a breakdown. In fact, Masaryk's view is totally gratuitous and false. Marx argued only that due to the process of concentration competitive capitalism is transformed into a monopoly capitalism. The breakdown was derived by him from completely different causes. But, to refute Marx, Masaryk appeals to the fact that the middle classes have not in fact disappeared and that even the position of the working class has improved. In his conception Marx supposedly derived the necessity of a breakdown from the proletarianisation of the middle classes. There could not be an easier refutation of Marx's system. But as for theoretical arguments against the theory of accumulation and breakdown, Masaryk can think of none.

Schumpeter (Grundr. d. Sozialokon. I, 1914) repeats the same banal dogmas against Marx. For him Marx was an underconsumptionist—he derived crises from the 'discrepancy between society's capacity to produce and its capacity to consume.'

Among Marx's critics, Robert Michels takes special place as he has devoted a whole book to the question of immiseration and breakdown (Die Verelendungstheorie, Leipzig, 1928). In this book Michels proposes to clarify the issues involved once and for all, and to show that Marxism has been 'scientifically overvalued', a fact which is only explicable, according to him, due to the 'crass ignorance' that prevails about Marx's predecessors and contemporaries. A comparison between Marx and writers of the 18th and 17th centuries would prove that Marx was hardly original. Most of Marx is to be found not only among the socialists, but even among contemporary liberals and clericalists. Indeed, as early as 1691, Locke had a certain presentiment of the existence of a reserve army and its tendency to become pauperised (p55).

Yet in direct contradiction to the view that Marx simply plagiarised the early theory of pauperisation from writers of the 18th and early 19th centuries, there stands the opposite view that this theory, like the theory of 'catastrophe', was basically only a reflection of the specific relations in which the young industrial countries of Europe found themselves on the outbreak of the February revolution in Paris (p195). Still, Marx had a lot to recommend him over countless numbers of his predecessors. What the latter often stated only in the form of isolated observations, empirical accidents and even episodes, appeared in Marx in the form of 'the causal connections and overall plasticity of a system' (p196).

About what sort of 'causal connections' or what 'system', you find in Michels not even a dying word, as he is thoroughly incapable of any theoretical analysis. Michels obviously believes that independent ideas are quite unnecessary for a writer and are infinitely replaceable by 'erudition'. He can think only politically and historically. To him knowledge contains no room for theory. Can you wonder that with such an attitude Michels is quite incapable of grasping the simplest elements of theory and fills hundreds of pages in his book, in one massive confusion, with things that have absolutely nothing to do either with Marx or with the Marxian 'theory of immiseration'? Anyone at all who has ever written about poverty becomes immediately transformed into a 'predecessor' of Marx. Because Michels ignores the specific nature of Marx's theory of immiseration, its derivation from the specific moments of the capitalist process of reproduction, because his study concentrates on an amorphous 'poverty', the opposition of rich and poor, he can trace these 'predecessors of Marx' back into the 17th century and, even further back, into antiquity and the bishops of the ancient church. Finally, because Michels has not the least notion of the theory that was actually worked out by Marx, nowhere mentions the actual moments that lead to a disruption of the capitalist mechanism in the course of accumulation, for him 'poverty' as such becomes the sole source of the revolutionary hopes of Marxian socialism. But he knows that Marx himself supported trade union struggles as a means of improving the position of the class and is therefore forced to conclude that 'there is an indisputable contradiction here' (p127).

Even more strange than the interpretation of the theory of breakdown by the bourgeois economists was its description in the writings of Marxists and socialists.

The oldest representative of the theory that traces the breakdown of capitalism to a lack of non-capitalist market

outlets is H Cunow (Neue Zeit, 17, 1898, I. pp424-430). Marx's diagnosis of the tendencies of development of capitalism was basically correct, Cunow argues, but he misjudged their tempo, insofar as he regarded the market outlets of that time as given. Capital's ability to win new spheres for investment and trade in the final decades of the century had a mitigating impact on the breakdown tendency. The expansion of foreign markets 'not only created an outlet that could absorb the constantly recurring superabundance of commodities' but could also, through this mechanism, 'diminish the tendency towards the outbreak of crises' (p426). Without the conquest of new markets in the 1870s and 1880s, English capitalism would long ago have faced a contradiction between the absorptive capacities of her existing markets and the gigantic growth of her capitalist accumulation. Bernstein's basic mistake was to generalise from a specific stage of development and project its special tendencies across all stages, hence also into the future, without asking whether the conditions would always exist for an extension of the world market to keep pace with the expansion of production (p424). Cunow himself ruled this out (p425). Down to the 1870s England enjoyed a monopoly on the world market, after which Germany and the USA emerged as industrial competitors. This in turn was followed by the industrialisation of India, Japan, Australia, Russia and would soon be followed by that of China (p427). To Cunow the breakdown of capitalism was only a matter of time (p427).

Fifteen years later Rosa Luxemburg took over this theory word for word and tried to deepen it theoretically. (Cunow himself later, during the War, abandoned his theory of breakdown. Capitalist expansion had at its disposal such an enormous reservoir of 'third persons' that to speak seriously of proletarian revolution was pure utopianism. Capital had scarcely accomplished its historical mission.) The only theory of breakdown that A Braunthal (Die Entwicklungstendenzen der kapitalistischen Wirtschaft, Berlin 1927) refers to and grapples with is this theory which Cunow developed and which was later defended by Luxemburg and her followers, eg F Sternberg. Braunthal knows of no other theory of breakdown, and he regards the very conception as fundamentally incompatible with Marx's system. He accentuates the tendencies towards the concentration and centralisation of capital and the polarisation between the classes, and rejects a theory of breakdown because it is incompatible with Marx's theory of class struggle. 'For any work in the present a theory of breakdown clearly leads to pure passivity....If one took the theory to its logical conclusion, the proletariat's present task would consist only of organisational and educational preparation for the revolution. Any activity immediately directed to the present, any class struggle for the present goals would be basically useless. For in that case all objective development leads to a pauperisation of the proletariat, and it makes no sense to put oneself into opposition to such development' (p43).

Bukharin (Imperialism and the Accumulation of Capital) likewise fails to provide a serious account of the theory of breakdown and simply ends up with nebulous phrase-mongering about 'contradictions'. Bukharin tears all the threads that tie the breakdown of capitalism to actual tendencies of economic development. His theory of breakdown is the following: 'Capitalist society is a "unity of contradictions". The process of movement of capitalist society is a process of the continual reproduction of the capitalist contradictions. The process of expanded reproduction is a process of the expanded reproduction of these contradictions. If this is so, it is clear that these contradictions will blow up the entire capitalist system as a whole'. Satisfied with the results of his analysis, Bukharin then proclaims, 'We have reached the limit of capitalism'. 'Even this general...explanation of the collapse of capitalism postulates a limit which is in a certain sense(!) objective. This limit is given to a certain degree by the tension of capitalist contradictions' (p264 f. English edition). 'Their increasing size and growing intensity will unavoidably lead to the collapse of capitalist rule' (ibid). And Bukharin decrees, 'It is a fact that we have entered into the period of the collapse of capitalism' (p260).

The exactness of Bukharin's analysis is simply amazing! He obviously believes that pure assertions will do by way of proof. Bukharin calls his 'contradiction' phraseology 'dialectical'. The lack of any concrete proof-procedure, the complete inability to conduct a theoretical analysis, is covered up with the term 'dialectical' and this is the 'solution' of the problem. Bukharin's statement that it is a fact that we have entered a period of the breakdown of capitalism may very well be true, but it is precisely a question of explaining this fact causally, of establishing by way of theory, the necessity for a tendency to breakdown under capitalism. As for what kind of sharpening of 'contradictions' we might expect. Bukharin naturally refers us to his book Economics of the Transformation Period, where his hopes about the breakdown of capitalism are shifted on to a 'second round' of imperialist wars and the gigantic destruction of productive forces caused by war. Bukharin's 'theory' of breakdown turns out to be nothing but a reformulation of Russia's own experiences during the War. 'Today we are able to watch the process of capitalist collapse not merely on the basis of abstract constructions and theoretical perspectives. The collapse of capitalism has started. The October Revolution is the most convincing and living expression of that' (p266). As for the causes of this collapse in Russia, 'The revolutionisation of the proletariat was doubtless connected to the economic decline, this to the war, the war to the struggle for markets, raw materials and spheres of investment, in short with imperialist politics in general' (p267).

So according to Bukharin, the collapse of capitalism flows from the destruction of the economic base, but this latter is not grounded in economic forces, in inexorable economic laws of

the capitalist mechanism itself, but in war, in a force that exists outside the economy and which exerts a disintegrating influence on the apparatus of production from the outside. It would be useless to search Bukharin for any other cause of the breakdown of capitalism than the ravages created by war. A fine 'objective' economic limit to capitalism, to be sure! The breakdown flows from transcendental causes, whereas, for Marx, it is an immanent consequence of the very laws that regulate capitalism.

If, like Bukharin, one expects the breakdown of capitalism to flow from a 'second round' of imperialist wars, then it is necessary to point out that wars are not peculiar to the imperialist stage of capitalism, they stem from the very essence of capitalism as such, during all its stages, and have been a constant symptom of capital from its historical inception. Later I shall show that far from being a threat to capitalism, wars are a means of prolonging the existence of the capitalist system as a whole. The facts show precisely that after every war capitalism has entered on a period of new upsurge.

In a more profound study than anything offered by Bukharin, G Charasoff (Das System des Marxismus, Berlin 1910) correctly underlines the strict connection between Marx's theory of breakdown at the end of Vol.I and the theory of the falling rate of profit. 'All the propositions of the theory of breakdown are basically intended to be only different expressions of a single fundamental fact—the fall in the rate of profit' (p3). The fall in the rate of profit is according to Marx only an expression of the fact that with the advance of technology an ever smaller mass of living labour is required to set capital, or dead labour, into motion. With the incessant development of social productivity, the rate of profit must fall and capitalism becomes intrinsically unstable. There is an intensified competition and concentration of capitals, 'overproduction becomes inevitable, the reserve army forms with the force of a natural law and the final catastrophe supervenes...' (p4). However, Charasoff himself disputes the correctness of this idea, on two grounds. Firstly, he disputes the fact of the falling rate of profit (p294-97). This law in his opinion is obviously wrong. Secondly, he doubts whether the breakdown as such can be deduced from the tendential fall in the rate of profit (p299). Charasoff feels that in Marx the breakdown is connected to the falling rate of profit, but what this connection is he himself cannot show. In this sense he fails to demonstrate the economic necessity of the breakdown from ,the laws pertaining to the system itself. Therefore he ends up saying that 'the fall (in the rate of profit) has to be consciously produced' (p316). This alone will enable Marxism to overcome its 'fatalistic character' according to which socialism is a product 'mainly of the external collapse of capitalism and not of the conscious assaults' of the masses (p318). By struggling on its wage demands, the working class consciously reduces the rate of profit and prepares the ground for the generalised crisis.

Boudin (Das theoretische System von Karl Marx, Stuttgart 1909) likewise accepts the idea that the downfall of capitalism is inevitable. He correctly says that this can only be understood and explained with the help of Marx's theory of value (p160). 'According to the theory of Marx,' he writes, 'the purely economic-mechanical breakdown of capitalism is a result of the inner contradictions of the law of value' (p173). But Boudin offers no proof of this. He simply offers a description of the concentration and centralisation of capital that flows from competition in which the bigger capitalists beat the small, and concludes that if the laws of capital were to operate unhindered, no capitalists would be left to form any sort of social class (p172). Boudin does not get past generalities of this kind. It is not surprising, therefore, that finally he falls back on Cunow's theory of the necessity for non-capitalist markets as a condition of existence of capitalism. The industrialisation of non-capitalist countries is 'the beginning of the end of capitalism' (p264). Capitalism's inability to find outlets for its surplus product is the basic cause of periodic disturbances 'and will finally lead to its breakdown' (p255).

It should be obvious that not only Tugan-Baranovsky but also the socialist neo-harmonists Hilferding and Otto Bauer are completely hostile to the idea that capitalism contains unsurpassable economic limits. Tugan says, 'the absolute limit to any further expansion of production is given in the quantum of productive forces at the disposal of society: capitalism is defined by an incessant but futile striving to reach these limits. Capital can never actually reach them' (Studien zur Theorie und Geschichte der Handelskrisen in England, 1901, p31). Therefore, 'capitalism can never collapse from purely economic causes, whereas it is doomed for moral reasons' (Der Zusammenbruch d. kapitalistischen Wirtschaftsordnung im Lichte d. nationalokon. Theorie. Archiv f. Soz.-wiss. u. Soz.-pol. XX 1904). Elsewhere, 'There are no grounds for supposing that capitalism will ever meet with a natural death; it has to be destroyed through conscious, human will, destroyed by the class exploited by capital, by the proletariat' (Der moderne Sozialismus in seiner geschichtlichen Entwicklung, Dresden, 1908, p90).

Tugan upholds this idea because he opposes the materialist conception of history and grounds socialism moralistically in the conscious will of the proletariat as something divorced from the objective course of economic development. Yet the same idea is taken over by Bauer, Hilferding and Kautsky who stand on the terrain of historical materialism. According to Bauer (Die Akkumulation des Kapitals, Neue Zeit, 31. 1913) objective limits are indeed imposed on accumulation by the size of a given population, ie, the extent of accumulation does not depend on the arbitrary will of the capitalists. However, within these demographic limits, unfettered accumulation occurs. Of course, in actual reality accumulation is accompanied by violent crises, but only because accumulation surpasses the given demographic limits, ie, in relation to the population at the disposal of

capital, there is either an overaccumulation or an under-accumulation of capital. Yet these periodic crises are only momentary disruptions of the equilibrium of capitalist accumulation. 'The periodic occurrence of phases of prosperity, crisis and depression is only the empirical expression of the fact that the mechanism of the capitalist mode of production automatically eliminates over- or under-accumulation, and always adjusts the accumulation of capital to the growth of population'. 'Under capitalism there is a constant tendency for the accumulation of capital to adjust to population' (p871).

Thus for Bauer crises are passing phenomena that are automatically overcome by the mechanism of capitalist production. The schematic equilibrium of the reproductive process is also Hiferding's peculiar obsession. Crises are a 'reality' only because production is not 'regulated'. With a proportional distribution of capital in the individual branches of industry, there would never be overproduction. In a case like that capitalism could expand without limits, 'production could be indefinitely extended without leading to an overproduction of commodities' (Das Finanzkapital, Wein, 1923, p300). On the few occasions that Hilferding refers to breakdown, he hastens to add that 'one is dealing with a political and social breakdown, not with economic breakdown, which is anyway a conception that makes no sense' (p471). When the bourgeois economist Mises (Theorie des Geldes und der Umlaufsmittel, 1912) argues that the modern organisation of exchange and credit are a threat to the continued existence of capitalism, that 'the development of the means of circulation must necessarily produce crises under capitalism', Hilferding can only deride this 'latest representative of the breakdown theory'. Far from leading to the breakdown of capitalism, the credit system is to him a means of transferring the entire productive mechanism from the hands of the capitalists into those of the working class (N. Zeit, 30, 1912).

'By its very nature finance capital signifies the emergence of social controls over production. The socialising function of finance capital enormously facilitates the overcoming of capitalism. Once finance capital brings the most important branches of production under its control, society has only to seize hold of it through the state, which is the organ of its conscious will and which the proletariat conquers, in order to dispose of these branches. The expropriation of the six largest Berlin banks would today mean the expropriation of the most important spheres of large-scale industry' (p473). This entire conception corresponds to the dream of a banker aspiring for power over industry through credit. It is the putschism of Blanqui translated into economics.

At the Keil convention of the Social Democratic Party (May 1927) Hilferding explained in his report: 'I have always rejected any theory of economic breakdown. In my opinion, Marx himself proved the falsehood of all such theories. After the war a theory of this sort was represented mainly by the Bolsheviks who thought we were on the verge of the collapse of the capitalist system. No such collapse followed. There is no reason to regret that. I have always been of the opinion that the downfall of the capitalist system is not something one waits for fatalistically, not something that will flow from the inner laws of the system, but that it must be the conscious will of the working class. Marxism has never been a fatalism, but, on the contrary, the most intense activism' (Leipziger Volksztg. 27/5/27. With the same logic Hilferding might have argued that the conscious will of workers who force wages up through strike action proves that there are no economic laws governing the movement of wages.)

In other words: the breakdown of capitalism was either rejected completely, or grounded in a political voluntarism. No economic proof of the necessary breakdown of capitalism was ever attempted. And yet, as Bernstein realised in 1899, the question is one that is decisive to our whole understanding of Marxism. In the materialist conception of history the social process as a whole is determined by the economic process. It is not the consciousness of mankind that produces social revolutions, but the contradictions of material life, the collisions between the productive forces of society and its social relations. 'If one wants to prove that capitalism cannot continue for ever, one has to prove the necessary breakdown of capitalist economy and its inevitable transformation into socialist economy. Once this is established, one has proved the necessary transformation of capitalism into its opposite and one has then brought socialism out of the realm of utopia into that of science' (Tugan, Theoretische Grundlage des Marxismus, 1905, p209). I shall show later that Marx provides all the elements necessary for this proof.

3. How Kautsky finally abandoned Marx's theory of accumulation and of breakdown (pp60-77)

In his latest book (Materialistische Geschichtsauffassung, Berlin, 1927) Kautsky abandons his earlier method of distorting Marx under the guise of defending him, in order openly to oppose the basic ideas of Capital. In the chapter called 'The Downfall of Capitalism', he asks, 'Will capitalism end the same way that feudalism did before it?' That it will is a pure 'assumption', according to Kautsky, and one which Marx and Engels never completely rid themselves of. 'It is still very widespread in socialist circles' (p539). Here we have a good example of Kautsky's method of distortion. Kautsky tries to create the impression that at one time Marx and Engels supported the idea of the economically necessary downfall of capitalism, but soon tried to rid themselves of it and never fully succeeded. In fact, the idea of the necessary downfall of capitalism is absolutely basic to Marx's theory of accumulation and crises both in Vol.1 and in Vol. 3.

According to Kautsky, the notion of breakdown contradicts the facts. Like the bourgeois critics of Marx he argues that the Marxian theory of immiseration is an empirical deduction from the conditions prevailing in the

1840s. It was an assumption one could validly support in the terms of the frightful ravages caused by capitalism in the working classes of the early 19th century. But after 1847, Kautsky continues, England saw the repeal of grain tariffs, the institution of a 10-hour working day and the beginnings of a new epoch of expanding industry and unionism. 'In industries covered by the Factory Acts the condition of the working class improved significantly' (p541). Political methods likewise contributed to improving the economic position of the workers. 'As democracy expanded, the proletariat of the large towns increasingly gained control of their administration and, even in the midst of bourgeois society, gained the capacity to improve their conditions of welfare and life to such a degree that their general conditions of health improved perceptibly' (p542). By way of a conclusion Kautsky says, 'Today it is no longer possible to maintain that the capitalist mode of production prepares its own downfall through the very laws of its own development' (p541). Kautsky's argument is based entirely on the fact that the position of the working class improved after the conditions described in the Manifesto. And from this fact he draws the conclusion that Marx's theory of the development of the productive forces under capitalism is untenable, especially the idea, basic to Marx, that from a certain stage onwards capitalism is a fetter on the productive forces. To this Marxian theory Kautsky contraposes the directly opposite conception: 'If earlier modes of exploitation ultimately led to a destruction of the productive forces, despite short spasms of expansion, industrial capital is defined by its tendency to augment them' (p539). Some pages later, 'In the first volume of Capital, 1867, Marx spoke an entirely different language...' (p541). That is, in Capital Marx is supposed to have abandoned the theory of pauperisation. Yet the essential aspects of Marx's theory of immiseration and breakdown were first presented only in Capital. This was possible despite his acknowledgement that the position of the working class had improved, because he did not derive the inevitable pauperisation of the working class under capitalism from the empirical conditions of England in the 1840s, but by way of a deduction, from the 'very nature of capital' or the law of accumulation peculiar to capitalism. The worsening position of the working class and the growth of the reserve army are certainly not the primary facts from which the breakdown is deduced; rather, they are the necessary consequences of the accumulation of capital at a specific stage of capitalism; it is the accumulation of capital that forms the primary cause that leads ultimately to the economic failure of capitalism due to an imperfect valorisation of the accumulated capital. Characteristically Kautsky completely ignores the theory of accumulation and breakdown formulated in the chapter on the general law of capitalist accumulation. This is especially obvious in the way he refutes Luxemburg. 'Yet another hypothesis that attempts to deduce the ineluctable necessity for a final economic breakdown of capitalism from the conditions of its process of circulation despite, or rather, precisely because of, its expansion of the productive forces — in direct opposition to Marx who proved the exact opposite in Vol.2 of Capital' (p546). So in Vol.2 Marx is supposed to have proved the possibility of an unfettered development of the productive forces under capitalism! Kautsky finally has to appeal to Otto Bauer's reproduction scheme which he calls 'the most important critique' of Rosa Luxemburg's theory and where Bauer likewise defends the thesis of a possible unlimited accumulation (Bauer, art. cit.).

Tugan was the first to suppose that Marx's reproduction schemes at the end of Vol.2 are proof that Marx himself was convinced of the possibility of a crisis-free, unlimited development of the productive forces of capitalism. Tugan admits that Marx never explicitly formulated the thesis of equilibrium that allegedly underlies the reproduction schemes and that these schemes were never developed logically by Marx. 'The logical deductions that flow from them, which Marx himself totally neglected, are a blatant contradiction with the ideas he professed before constructing the schemes' (Tugan-Baranovsky, Les crises industrielles en Angleterre, Paris, 1913, p203). Naturally Tugan has to clarify this astonishing contradiction, and he tries to do this by seeing the system prior to the construction of the schemes as an older, outdated draft of Marx's theory. Because Marx never reworked this earlier portion, 'Marx's analysis remained incomplete...' (ibid).

Insofar as Kautsky accepts Bauer's theory he rejects the notion of a final limit to capitalist accumulation, and stands on the same ground as Tugan 25 years earlier. (At the time Kautsky had attacked Tugan, from an underconsumptionist standpoint, in his articles on the theories of crisis, Neue Zeit, 20, 1902). But if Tugan was at least aware of the contradiction contained in an harmonist interpretation of the reproduction schemes, it is characteristic of Kautsky, Bauer and Hilferding that they are not in the least bothered by it. When the contradiction is apparent, they abandon Marx's theory and stick to their own harmonist interpretations. To Kautsky crises are only temporary disruptions caused by the lack of proportionality between individual branches. But 'the correct proportionality is always re-established' (p548).

Kautsky is not content simply with abandoning Marx's theory of the final economic end of capitalism. He becomes an unconditional, pure, 100 per cent admirer of capitalism. During the great catastrophe of the War 'capitalism did not collapse. It showed us that its elasticity, its capacity to adjust to new conditions was much stronger than its vulnerability. It stood the test of war and stands today, from a purely economic point of view, stronger than ever...' (p559). Kautsky's faith in the economic future of capitalism, his optimistic enthusiasm for it, are carried so far that like Bernstein he concludes that capitalism is always capable of surmounting all obstacles, that not only has no one ever produced a theoretical proof of its economically necessary downfall, but that such a proof is impossible. The practical experiences of capitalism 'more than testify to its capacity to survive and to adjust to the most manifold and even desperate situations' (p559). 'Three decades ago', Kautsky says, 'I dealt with the problem of crises. Since then capitalism has survived so many crises, has shown its capacity to adapt to so many new, often quite astonishing and extraordinary demands that today it seems to me, from a purely economic point of view, far more capable of survival than it did some decades back' (p623).

It is quite sad to watch a thinker of such exceptional merit rejecting his entire life's work, at a single stroke, towards the closing stages of his active life. The conclusions Kautsky draws constitute an abandonment of scientific socialism. If there is no economic reason why capitalism must necessarily fail, then socialism can replace capitalism on purely extra-economic — political or psychological or moral — grounds. But in that case we abandon the materialist basis of a scientific argument for the necessity of socialism, the deduction of this necessity from the economic movement. Kautsky himself senses this. 'The prospects for socialism depend not on the possibility or necessity of a coming collapse or decline of capitalism but on the hopes we must have that the proletariat attains sufficient strength, that the productive forces grow sufficiently to provide abundant means for the welfare of the masses...finally, that the necessary economic knowledge and consciousness develop in the working class to ensure a fruitful application of these productive forces by the class — these are the preconditions of socialist production' (p562).

Kautsky displaces the question from economics to politics, from the sphere of economic laws to the sphere of justice. Once problems of distribution become decisive, socialism retrogresses three quarters of a century to its historical starting-points, to Proudhon and his demand for just distribution. To abandon materialism as our basis is to abandon socialism in favour of reformism.

Once the economic basis for the destruction of capitalism is given up, where is the certainty that the proletariat, having become the decisive class, will define its goal as the destruction of capitalism? Will it not perhaps prefer to reconcile itself with the existing order of society? (Wo ist die Gewissheit dass das Proletariat, zur entscheidenden Klasse geworden, sich die Abschaffung des Kapitalismus als Ziel setzen wird? Wird es vielleicht nicht vorziehen, sich mit der bestehenden Gesellschaftsordnung zu versohnen?) Why should the working class come out against capitalism, when it is not only capable of an unfettered development of the forces of production and actually develops them, but secures for it a constant improvement in its conditions of life and ever increasing protection through social reforms? Capitalism is doing all that, as Kautsky today assures us, and yet the workers will realise socialism. For according to Kautsky, despite all the developments of productive forces, despite all the improvements in the position of the working class, despite all advances in social legislation, class antagonisms become progressively sharper, not milder, under capitalism, so that the conscious intervention of the proletariat is something inevitable. Kautsky enumerates a series of subsidiary moments that will lead to a sharpening of class antagonisms. 'Here, and not in the accumulation of capital or the growth of crises, will the fate of socialism be decided' (p563). Kautsky doesn't realise that he is simply moving in circles. If these causes of sharper class struggle are economically conditioned, then his own standpoint proves the necessary collapse of capitalism, with only this difference that the causes given by Marx (growing accumulation and its consequences: insufficent valorisation, crises) are replaced by other causes. Or — and that is the second alternative — these causes are not economically conditioned, in which case the growth of class oppositions are traced to the consciousness of the working class as something pure, something cut loose from the economic movement. In fact, this is the ultimate basis on which Kautskyan socialism is grounded — the realisation of socialism purely voluntaristically, through the conscious will of the workers, without any economic failure of capitalism and despite improvements in the conditions of life of the proletariat.

CHAPTER TWO

The law of capitalist breakdown

1. Is there a theory of breakdown in Marx? (p78-79)

Even if Marx did not actually leave us a concise description of the law of breakdown in any specific passage, he did specify all the elements required for such a description. It is possible to develop the law as a natural consequence of the capitalist accumulation process on the basis of the law of value, so much so that its lucidity will dispose of the need for any further proofs.

To begin with, however: is it correct that the term 'theory of breakdown' stems from Bernstein, not Marx? Is it true that Marx nowhere ever spoke of a crisis that would sound the deathknell of capitalism, that 'Marx uttered not a single word that might be interpreted in this sense', that this 'stupid idea' was smuggled into Marx by the revisionists? (Kautsky, 'Verelendung und Zusammenbruch', N. Zeit 26). To be sure, Marx himself referred only to the breakdown and not to the theory of breakdown, just as he did not write about a theory of value or a theory of wages, but only developed the laws of value and of wages. So if we are entitled to speak of a Marxian theory of value or theory of wages, we have as much right to speak of Marx's theory of breakdown. In the section on the law of the tendency of the rate of profit to fall in the course of accumulation where Marx shows how the accumulation of capital proceeds not in relation to the level of the rate of profit, but in relation to its mass, he says, 'This process would soon bring about the breakdown of capitalist production were it not for counteracting tendencies that have a continuous decentralising impact alongside the centripetal one' (Cap 3, p241).

So Marx observes that the centripetal forces of accumulation would bring about the breakdown of capitalist production, were it not for the simultaneous operation of counteracting tendencies. However, the operation of these counteracting tendencies does not do away with the action of the original tendency towards breakdown; the latter does not cease to exist. So Marx's statement is only intended to explain why this tendency towards breakdown does not enforce itself 'soon'. To deny this is to distort the clear sense of Marx's words.

However, it is scarcely a matter of 'words' which 'might be interpreted in this sense', and so on. Where the mere interpretation of words leads to is quite obvious from the directions in which Kautsky drags Marx's theory. For us the question is: suppose initially we abstract from the counteracting tendencies that Marx speaks of, how, in what way, can accumulation bring about the breakdown of capitalist production? This is the problem one has to solve!

2. Preliminary remarks of a methodological nature. The coordinate system of economics—the need for simplifying assumptions; the assumption of constant prices as the starting-point of the analysis (The value of money held constant. The equilibrium state of the capitalist mechanism, and its value=price coincidence. Exclusion of competition) (pp79-99)

We have to show how, due to causes that stem from the economic process itself, the capitalist process of reproduction necessarily takes the form of cyclical and therefore periodically recurring movements of expansion and decline and how finally it leads to the breakdown of the capitalist system. However, if the investigation is to be fruitful and to lead to exact results, we shall have to choose a method that can ensure this exactness.

What should we regard as the characteristic, determining condition of the reproductive cycle? Lederer identifies this as the price movements in the course of the business cycle — in periods of expansion all commodity prices, including the price of labour-power, rise, in periods of crisis and depression they fall. Therefore, his way of posing the question is the following: how is a general increase of prices possible in periods of expansion? Expansions in the volume of production such as characterise periods of boom are, according to Lederer, only possible due to price increases. Therefore these are what he has to explain first. Lederer sees the creation of additional credit as the sole impulse behind price increases. Consequently, he attributes to this factor the major role in determining the shape of the business cycle. To take another example, Spiethoff's explanation is quite different: 'An increase in capital investments forms the true hallmark and causal factor of every boom'. Here not one word is said about price increases, and we could just as well choose a whole series of other forces as our basic 'indicators' without moving one step further in explaining the problem. For the question is not one of which appearances are 'characteristic' or 'typical' of the business cycle, but, which are necessary to it, in the sense that they condition it. That price increases generally occur during an upswing does not mean that they are necessarily connected with it. If like Lederer, we were to assume that upswings presuppose rising prices we would be totally stumped by the American booms which were sometimes characterised by falling prices. That one has chosen a wrong starting-point is obvious. Both rising prices and expanded outlays on production are in themselves matters of indifference to the capitalist entrepreneur. The capitalist process of production has a dual character. It is a labour-process for the production of commodities, or products, and its is at the same time a valorisation-process for obtaining profits or surplus-value. But only the latter process forms the essential, driving force of capitalist production, whereas the production of use-values is for the entrepreneur only a means to an end, an unavoidable necessary evil. The entrepreneur will only continue production and extend it further if it enables him to enlarge his profits. Expanded outlays on production, or accumulation, is only a function of valorisation, of the magnitude of profits. If profits are expanding production will be expanded, if valorisation fails production will be cut. Furthermore, both situations are compatible with constant, falling or rising prices.

Of these three possible price situations the assumption of constant prices is the one most appropriate to theory, in the sense that it is the simplest case and a starting-point from which the other two more complicated cases can be examined later. The assumption of constant prices thus forms a methodologically valid theoretical fiction with a purely

provisional character, it is, so to speak, a coordinate system within economics, a stable reference point that makes possible exact measurement of quantitative variations in profitability in the course of production and accumulation. The basic question we have to clarify is: how are profits affected by the accumulation of capital, and vice versa: do profits remain constant in the course of accumulation, do they grow or do they, on the contrary, decline? So the problem boils down to an exact determination of variations in surplus-value in the course of accumulation. In answering this question we also clarify the cyclical movements or conjunctural oscillations that define the process of accumulation.

These considerations underlie Marx's analysis. 'Since the production of exchange-value — the expansion of exchange-value — is the immediate aim of capitalist production, it is important to know how to measure it' (TSV 3, p34). In order to establish whether an advanced capital value has grown during its circuit or to know how much it has grown in the course of accumulation, we would have to compare the final magnitude with the initial magnitude. This comparison, which forms the basis of any rational capitalist calculation, is only possible because, in the form of costs of production and prices of the end product, value exists under capitalism as an objectively ascertainable independent magnitude, and because as something which is objectively ascertainable on the market, it constitutes both the basis of capitalist calculation and its form of appearance. Its explanation is thus the starting-point of any theoretical analysis.

From the very beginnings of free capitalism, attempts were made to grasp the independent character of value, its aspect as an objective, external entity, in numerical terms. Sieveking (Wirtschaftsgeschichte, Leipzig u. Berlin, 1921, p96) tells us that 'the rational approach to economics was enormously speeded up by the introduction of book-keeping'. Sombart even takes the year 1202 as 'the turning-point in world history' and 'the year modern capitalism was born' because 'in that year there appeared Leonardo Fibonacci's Book of the Abacus which created the basis in theory for capital's most significant attribute, its "calculability" ' (Der moderne Kapitalismus). The ability to calculate the yield on a sum of values invested originally is a vital condition of capital. 'Its identity with itself is established in the capitalist's ledger, or in the form of money of account' (Cap 2, p233). 'As value in process...capital exists ideally in the shape of money of account, at first in the head of the commodity producer, capitalist or otherwise. By way of book-keeping...the movement of capital is registered and controlled. The movement of production and particularly of valorisation...thus receives a symbolic reflection in the imagination'(Cap 2, p211).

Through prices, the fluctuations of a given capital value in the course of its circuit become expressed in money, which serves as measure of value required for accounting. And with respect to this measure of value Marx proceeds from the assumption, which is purely fictitious and which forms the basis of his analysis, that the value of money is constant (Cap 1, p214). At first sight this appears to be all the more surprising in the sense that, in his polemic with Ricardo's 'invariable measure of value', Marx constantly emphasised that gold can only serve as a measure of value because its own value is variable, yet the contradiction is only apparent, and soluble methodologically. Factually speaking, in empirical reality, the values of all commodities, including gold, are variable. But science needs non-variable measures. 'The interest in comparing the value of commodities in diifferent historical periods is in fact not an economic interest as such, but an interest related to scientific inquiry' (TSV 3, p133, t.m.).

From historical surveys of the development of thermometry we know that a reliable measure of heat variations was established through the fundamental work of Amonton, with the discovery of two fundamental points (boiling-point and absolute null point of water) for any liquid used as the measure of heat variations. This alone could establish the constant reference points with which it became possible to compare the variable states of heat (Mach, Die Prinzipien der Warmlehre, 1900, p8 ff). Now there are no such constant reference points for gold as the measure of value. Thus an exact measure of the value fluctuations of commodities would be impossible. For either the value of money varies differently in relation to value changes of individual commodity types; in which case we have no exact measure to ascertain how far, for example, the rising prices of an actual commodity have been caused through changes in its own value and how far through changes in the value of money. In this case, suppose one were studying variations in the magnitude of surplus-value, then, with a variable value of money, it would be difficult to tell whether a given increment in value (or price) was not something merely apparent and caused purely by changes in the value of money. 'In all these cases, however, there would be no change in the magnitude of capital value, but only in the money expression of this value and surplus-value...thus there is only the semblance of a change in the magnitude of the employed capital'. 'The same occurs with a purely nominal change of value, the rise or fall of mere tokens of value, other conditions being equal' (Cap 3, pp137-138). Or, the value of money varies in the same proportion as the values of other commodities, eg, due to general changes in productivity — a limiting case that is scarcely possible in reality; in that case there would have been enormous absolute changes in the real relations of production and wealth, but these actual changes would be invisible on the surface, because the relative proportions of individual commodity values would remain the same. The value-index would not register the actual changes in productivity.

Thus it was entirely valid for Marx to substitute the 'power of abstraction' for the missing constant reference points, so falling into line with Galileo's principle, 'Measure whatever is measurable, and make the non-measurable measurable'. Eg, to ascertain the impact of changes in productivity on the formation of value and surplus-value, Marx is forced to introduce the assumption that the value of money is constant. This assumption is therefore a methodological postulate that equips Marx with an exact measure for ascertaining variations in the value of industrial capital during its circuit. It is an assumption underlying all three volumes of Capital.

The variability of the measure of value, or of money, is, however, only one of the causes behind price changes. Such

changes can just as well stem from causes that lie on the commodities' side. Here we should distinguish two cases. Either these variations of price, are, from a social point of view, consequences of actual changes in value. (This is the case that preoccupies Marx initially, and it is these changes he wants to measure.) Or these variations of price represent deviations of prices from values, which do not in any case affect the total social mass of value, because price increases in one sector of society correspond to price reductions in another. The specific task that Marx set himself, of measuring as exactly as possible increases in surplus-value over and above the initial magnitude of the advanced capital, forced him to exclude price changes of the latter sort. Price fluctuations that represent deviations from the value-average are the result of changing configurations of supply and demand. Now if one proceeds from the assumption that supply and demand coincide, then prices will coincide with values. Motivated by specific methodological considerations, Marx starts off his analysis with the assumption that supply and demand coincide. Or he assumes a state of equilibrium with respect to supply-demand relationships, both on the commodity market and on the labour market in order to be able to cover the more complicated cases later. Hence, whenever production is expanded it is presupposed that this occurs proportionally in all the spheres so that the equilibrium is not destroyed. The reverse case, where production expands disproportionally, is taken up only later.

Deviations at any later time-point of the analysis are likewise exactly measurable only due to the simplifying assumptions that define this hypothesised state of equilibrium which is not only directly reflected in the reproduction schemes but which forms the starting-point of the analysis as its coordinate system. Marx's Capital has a mathematical-quantitative character. Only these methodological devices allow an exact analysis of the accumulation process. (Oppenheimer, who is otherwise a sharp thinker, fails to notice the methodological significance of Marx's schemes. He argues that Marx's division of the annual product into c + v + s 'was simply a device for the deduction of surplus-value. The deduction failed' (F Oppenheimer, Der heutige Stand der Theorie des Sozialismus in Deutschland, in 'Die Wirtschaftstheorie der Gegenwart', 1928, Bd IV, p311). But Marx did not need any device for the 'deduction' of surplus-value, because the latter is a fact and facts do not need any 'proofs'. The methodological construction was designed not to prove the fact of surplus-value, but to establish exactly the variations in the magnitude of surplus-value in the course of accumulation.) Can accumulation proceed indefinitely without halts in the process of reproduction? To say 'yes' and to regard this as something self-evident without undertaking an actual analysis is to misunderstand the question completely. Eg, Prof. Kroll argues that if commodities were exchanged at equilibrium prices, where supply = demand, then there would be no conjunctural oscillations. He supposes that any decline in profitability is obviously because wages are 'too high' (Schriften des Vereins f. Sozialpolitik, Bd.172, 1926, p214). But why were they not 'too high' previously? What can 'too high' mean when we have no basis of comparison in the form of a 'normal case' such as represented by the reproduction scheme? If all the elements are variable, then the influence of any individual factor is impossible to assess. The causal relation that Kroll observes between the level of wages and sagging profitability is not something we can presuppose, it has to be demonstrated. Therefore a scientific analysis is in principle bound to take as its starting point the case where wages are held constant in the course of accumulation, and it has to find out whether in such cases profits do not fall in the course of accumulation. If they do, then it would be a logically exact proof that sagging profitability, or crises, bear no causal connection with the level of wages, but are a function of the accumulation of capital. The assumption of equilibrium, or of constant prices, is nothing but the method of variation applied to the problem of the business cycle in a form that excludes from the analysis all oscillations produced by changes in the volume of credit, prices, etc, and studies only the impact of a single factor, the accumulation of capital, on quantitative changes in surplus-value.

Actually this is also the assumption behind Marx's analysis of the crisis. 'The general conditions of the crisis, insofar as they are independent of price fluctuations...must be developed from the general conditions of capitalist production' (TSV 2, p515 t.m.). According to Marx, crises can also result from price fluctuations. As such they were of no concern to him, they are 'special crises'. On the contrary, Marx takes as the object of his analysis 'capital in general', ie, he is concerned only with those crises that stem from the nature of capital as such, or from the essence of capitalist production. However, this is only penetrable when we abstract from competition and thus confine ourselves to 'the examination of capital in general, in which prices are assumed to be identical with the values of commodities' (TSV 2, p515). This identity of price and value is in turn only possible if the apparatus of production is assumed to be in a state of equilibrium. Marx makes an assumption of this sort. And the same holds for credit. Credit crises are possible and do occur. But the question is, are crises necessarily connected with the movement of credit? Hence, on methodological grounds, we must first exclude credit and then see whether crises are possible. Marx says, 'In investigating why the general possibility of crises turns into real crises, or in investigating the conditions of crisis, it is therefore quite superfluous to bother about those crises that stem from the development of money as means of payment (credit, Grossmann). This is precisely why economists like to suggest that this obvious form is the cause of crises' (TSV 2, p514 f.).

(It is amusing to see how Hilferding tries his best to account for the turn from upswings to crises in terms of reductions in profitability induced by purely contingent increases in prices and wages (Finanzkapital, p322f) He himself polemicises against the 'barbaric idea' of the economists that conjuctural oscillations are explicable in terms of the rate of interest and its fluctuations. But he finds this idea barbaric not because such fluctuations are cited as the basis for an explanation, but because 'several other' price changes play a role in producing crises. The neo-harmonists glorify the equilibrium schema not because it is a provisional methodological tool of analysis but because they think they

can use it to establish the equilibrium tendency of capitalism. Theoreticians like Hilferding have not the least notion that to be exact any analysis must proceed from the assumption of constant prices and 'normal' relationships, and that it has to explain both the upswing as well as the crisis independently of all fluctuations of prices.)

Once we have shown that even in such a state of equilibrium, where prices and credit are ignored, crises are not only possible but necessary, then we have proved that there is no intrinsic connection between the movement of prices and credit on the one hand, and crises on the other. 'That is to say, crises are possible without credit' (TSV 2, p514).

Bourgeois economists try to explain the movement of market prices by competition or the changing relations of supply and demand. But why does competition exist? This question they do not pose. Competition becomes some mysterious quality that one simply assumes or submits to without exploring its causes. 'Competition exists only in industry', Sternberg tells us, 'because the law of rising returns is fully valid for industry, or individual entrepreneurs struggle to control the market by cheapening their commodities' (Der Imperialismus, 1926, p2). But why should they struggle to 'control' the market, why should there not be outlets for the 'rising returns' of industry? This is not something logically necessary or obvious, and simply to assume it is to start off by presupposing what has to be proved. And with this mysterious force which has been left unexplained, one then tries to 'explain' all other phenomena. 'It (competition) forces the industrialists to accumulate capital', Sternberg continues. Marx was perfectly right in saying, 'Competition has to shoulder the responsibility of explaining all the meaningless ideas of the economists, whereas it should be the economists who explain competition' (Cap 3, p844).

In fact, 'a scientific analysis of competition is possible only if we can grasp the inner nature of capital, just as the apparent motions of the heavenly bodies are intelligible only to someone who is acquainted with their real motions which are not perceptible to the senses' (Cap 1, p433). 'It is a work of science to reduce (reduzieren) the visible, merely apparent movement to the real, intrinsic movement' (Cap 3, p307 t.m). But how do we grasp the 'inner nature' of capital? Marx's answer is, because the individual commodity owner 'seeks to sell his commodity as dearly as possible,...the inner law enforces itself only by means of their competition...through which the deviations are mutually cancelled' (Cap 3, p858). So in actual reality the inner law of capitalism enforces itself through the mutual cancellation of deviations of supply and demand, which only means that it is through this process that the mechanism preserves its equilibrium. 'Obviously the real inner laws of capitalist production cannot be explained by the interaction of supply and demand' (Cap 3, p186). Or the inner law only emerges in the state of equilibrium.

'If supply and demand coincide...the prices of commodities then appear to be regulated by the immanent laws of capitalist production, independently of competition' (Cap 3, p349). One has to find the law that 'regulates competition' (Cap 3, p842). This inner law only works itself out in reality through the constant deviation of prices from values. In order to gain a theoretical perception of the law of value itself, one has to assume it as already realised, ie, to abstract from all deviations from this very law. This does not mean that competition is discarded; rather, it is conceived in its latent state, viz. in the special case where its two opposing forces are in equilibrium. Only this 'normal case' draws out the various economic categories — value, wages, profit, ground-rent, interest — in their 'pure', 'normal' form, as 'independent categories' (Cap 3, p790) corresponding to their 'concept'. These categories and the inner laws are only knowable if 'the capitalist mode of production is presupposed in its normal functioning' (Cap 3, p730). 'It is precisely this normal condition which has to be analysed here' (Cap 3, p738). This is the starting-point of Marx's analysis. 'Let us assume that the component value of the commodity product, which is formed in every sphere of production by the addition of a new quantity of labour, hence a newly produced value,...always splits into constant proportions of wages, profit and rent, so that the wage actually paid always coincides with the value of labour-power, the profit actually realised with the portion of the total value that falls to the share of each independently functioning particle of the total capital by virtue of the average rate of profit, and the actual rent is always limited by the boundaries within which ground-rent on this basis is normally confined. In a word, let us assume that the division of the social value-product and the regulation of prices of production proceed on a capitalist basis, but with competition eliminated' (Cap 3, p847-48).

Only when we start from this methodological basis is it possible to ask — what is the impact of the accumulation of capital on the process of reproduction? Can the equilibrium which is presupposed be sustained in the long run or don't new moments emerge in the course of accumulation which have a disruptive effect on it?

3. The equilibrium theory of the neo-harmonists. Otto Bauer's reproduction scheme (pp99-104)

In solving this problem I shall refrain from constructing any schemes of my own, and demonstrate the real facts through Otto Bauer's reproduction scheme (see Table 1 below). In chapter 1 we saw the neo-harmonists Hilferding, Bauer and others join the company of Tugan-Baranovsky in producing a re-edited version of Say's old proportionality theory in order to prove that capitalism contains unlimited possibilities of development.

There is no possibility of doubting that as an answer to Luxemburg's theory the reproduction scheme constructed by Otto Bauer represents a distinct progress over all earlier attempts of this kind. Bauer succeeded in constructing a reproduction scheme which, with the exception of some mistakes, matches all the formal requirements that one could impose on a schematic model of this sort. (The basic mistake is Bauer's assumption that the rate of surplus-value is constant, despite the assumed rising organic composition of capital. Bauer's other mistakes relate not so much to the construction of his scheme as to his underlying lack of methodological clarity. He confuses the purely fictitious trajectory of accumulation represented by the scheme with

the actual trajectory of accumulation.)

Bauer's scheme shows none of the defects that Luxemburg ascribed to the reproduction scheme of Marx. (1) It takes account of incessant technological advances and incorporates this in the form of an ever-increasing organic composition of capital — consequently, what Luxemburg calls the 'cornerstone of Marxian theory' is preserved. (2) It avoids Luxemburg's criticism that 'there is no obvious rule in this accumulation or consumption', for Bauer's scheme does specify rules to which accumulation must correspond — constant capital grows twice as fast as variable capital, the former by 10%, the latter by 5%, per annum. (3) Although capitalist consumption increases absolutely, increases in productivity and the mass of surplus-value allow a progressively greater portion of the surplus-value to be earmarked for the purposes of accumulation. (4) Bauer's scheme preserves the symmetry between Depts 1 and 2 required by Luxemburg. In Marx's scheme Dept 1 always accumulates half its surplus-value, whereas accumulation in Dept 2 is fairly anarchic and jerky; on the other hand, in Bauer's scheme both departments annually devote the same percentage of surplus-value to accumulation. (5) Finally, the rate of profit behaves according to the Marxian law of its tendential fall. No wonder Luxemburg herself preferred the cautious warning: 'Naturally I shall not let myself be drawn into a discussion of Bauer's tabulated calculations. His position and his critique of my book depend mainly on the theory of population which he counterposes to my ideas as the basis of accumulation, and which in itself has nothing to do with any mathematical models' (Anti-critique, p90).

The critique that I shall make of Bauer's scheme starts from a quite different perspective from Luxemburg's. I shall show that Bauer's scheme reflects and can reflect only the value side of the reproduction process, that in this sense it cannot describe the real process of accumulation in terms of value and use-value. Secondly, Bauer's mistake lies in his supposing that the scheme is somehow an illustration of the actual processes in capitalism, and in forgetting the simplifications that go together with it. But these shortcomings do not reduce the value of Bauer's scheme. As long as we examine the process of reproduction initially from the value side alone.

TABLE ONE

Bauer's reproduction scheme

Yr.	Dept.	c		v		k		a_c		a_v		AV	k/s %	$a_c + a_v/s$ %
1.	I.	120000	+	50000	+	37500	+	10000	+	2500	=	220000		
	II	80000	+	50000	+	37500	+	10000	+	2500	=	180000		
		200000	+	100000	+	75000	+	20000	+	5000	=	400000	75.00	25.00
2.	I	134666	+	53667	+	39740	+	11244	+	2683	=	242000		
	II	85334	+	51333	+	38010	+	10756	+	2567	=	188000		
		220000	+	105000	+	77750	+	22000	+	5250	=	430000	74.05	25.95
3.	I	151048	+	57576	+	42070	+	12638	+	2868	=	266200		
	II	90952	+	52674	+	38469	+	11562	+	2643	=	196300		
		242000	+	110250	+	80539	+	24200	+	5511	=	462500	73.04	26.96
4.	I	169124	+	61738	+	44465	+	14186	+	3087	=	292600		
	II	96876	+	54024	+	38909	+	12414	+	2701	=	204924		
		266000	+	115762	+	83374	+	26600	+	5788	=	497524	72.02	27.98

Symbols:

c = constant capital
v = variable capital
k = capitalists' consumption (personal)
a_c = accumulated as constant capital
a_v = accumulated as variable capital
AV = value of annual product
s = surplus-value (= k + a_c + a_v)

$$\frac{k + a_c + a_v}{c + v}$$ (rate of profit)

year 1. 33.3%
2. 32.6%
3. 31.3%
4. 30.3%

4. The conditions and tasks of 'schematic' analysis (pp104-109)

In the following sections I propose to accept Bauer's assumptions completely. But the problem is not simply to explain crises, or the periodic expansions and contractions of the business cycle under capitalism, and their causes, but also to find out what are the general tendencies of development of the accumulation of capital. Initially we make the favourable assumption that accumulation proceeds on the basis of dynamic equilibrium of the kind reflected in Bauer's scheme.

On this assumption Luxemburg's criticism that 'the question of markets does not even exist for Bauer' although disproportions between production and market 'are obvious in reality' (Anti-critique, p121) becomes meaningless and untenable. For Marx worked out the problem of accumulation and the whole analysis of Vol.I on the conscious assumption that commodities sell at value, which is only possible when supply and demand coincide. Marx studied the tendencies of accumulation in abstraction from all disturbances arising out of disproportions between supply and demand. Such disturbances are phenomena of competition that help us to explain deviations from the 'trend line' of capitalism, but not this trend line itself. These phenomena are the 'illusory appearances of competition' for Marx, and for that reason he abstracts from the movement of competition when investigating the general tendencies. Once these general tendencies have been established, it is an easy task to explain the periodic deviations from the basic line of development, or the periodic crises. In this sense the Marxian theory of accumulation and breakdown is at the same time a theory of crises.

With Bauer we shall assume a productive mechanism in which constant capital amounts to 200 000 and variable capital to 100 000. The other assumptions are that the constant capital of Dept 1 (means of production) is 120 000, of Dept 2 (means of consumption) 80 000, whereas the variable capital is equally divided between both spheres; further, that the constant capital expands by 10% a year, variable capital by 5%, the rate of surplus-value is 100% and in any given year the rate of accumulation is equal in the two departments. Proceeding from these assumptions, Bauer has constructed a reproduction scheme which in his view manifests perfect equilibrium year by year despite annual accumulation of capital and despite the fact that there are no non-capitalist markets in which the surplus-value might be 'realised'. With this scheme Bauer thinks he has established 'an unexceptionable basis for tackling the problem raised by Cd. Luxemburg'(p838). He rejects her theory of the crucial role of the non-capitalist countries in the realisation of surplus-value; surplus-value can be realised entirely within capitalism. As long as the expansion of capital is proportional to the growth of population — for the given levels of productivity — through accumulation the capitalist mechanism creates its own market. As for the question whether the accumulation of capital encounters insuperable limits, Bauer's answer is 'no'. 'This condition of equilibrium between accumulation and the growth of population can only be maintained, however, if the rate of accumulation rises sufficiently fast to enable the variable capital to expand as rapidly as population despite the rising organic composition of capital' (p869).

But can the rate of accumulation rise so fast? Bauer does not pose this decisive question even once! Bauer simply took the basic point at issue as something self-evident, as if the speed with which the rate of accumulation rises depended solely on the will of the capitalists! From his position it followed that capitalism would be destroyed not through any objective limits on the growth of accumulation, but by the political struggle of the working class. The masses would be drawn to socialism only through painstaking, day-to-day educational work. Socialism can only be the product of their conscious will.

But Tugan-Baranovsky showed some time back that a conception of this sort means giving up the materialist conception of history. If capitalism really could develop the productive forces of society without hindrance, the discontent of the working class would lack any psychological basis. If one hopes for the downfall of capitalism purely in terms of the political struggle of the masses trained in socialism, then 'the centre of gravity of the entire argument is shifted from economics to consciousness' (Tugan, 'Der Zusammenbruch d. kapitalistischen Wirtschaftsordnung').

Rosa Luxemburg wrote in similar terms some 12 years later. 'If we assume the economic infinity of capitalist accumulation, then the granite foundations of the objective historical necessity of socialism disintegrate under our feet. We then take refuge in the mist of pre-Marxian systems and schools which attempted to deduce socialism solely on the basis of the injustice and evils of today's world and the revolutionary determination of the working classes' (Anti-critique, p76 t.m.).

5. Why was classical economy alarmed by the fall in the rate of profit despite an expanding mass of profit? (pp109-111)

In Bauer's scheme the portion of surplus-value reserved for the individual consumption of the capitalists (k) represents a continuously declining percentage of surplus-value, true, but it grows absolutely despite increasing accumulation from year to year, and so the motive or purpose that drives capitalists to expand production is given.

One might argue that Bauer's harmonist conclusions are obviously confirmed by his table. For the percentage fall in the rate of profit is of no concern, because despite this fall the absolute mass of profit can and does grow, as long as the total capital expands more rapidly than the rate of profit falls. 'The same development of the productivity of social labour expresses itself, with the progress of capitalist production, on the one hand in a tendency of the rate of profit to fall progressively, and, on the other, in a constant expansion of the absolute mass of appropriated surplus-value or profit' (Cap 3, p218). 'The number of workers employed by a given capital, hence the absolute mass of the labour set in motion by it, and therefore the absolute mass of surplus labour...the mass of the surplus-value produced by it, and therefore the

absolute mass of the profit can consequently increase and increase progressively, in spite of the progressive fall in the rate of profit. And this not only can be so, it must be so, on the basis of capitalist production' (Cap 3, p213).

If this is so however, the question arises — why should the capitalist be so worried if the rate of profit falls as long as the absolute mass of his profit grows? To ensure this growth all he needs to do is to accumulate industriously, and of course to accumulate at a rate that exceeds the fall in the rate of profit. Moreover, why was classical economy dominated by a deep sense of disquiet, of real 'terror' before the falling rate of profit? Why is it a veritable 'day of judgement' for the bourgeoisie (TSV 2, p544), why were Ricardo's followers in 'dread of this pernicious tendency' (TSV 2, p541), why does Marx refer to the 'great importance that this law has for capitalist production' (Cap 3, p209), why does he see in the law of the falling rate of profit 'the fate that hangs ominously over bourgeois production' (TSV 2, p541), whereas, on the other side, vulgar economy 'pointed self-consolingly' to the increasing mass of profit as against its falling rate (Cap 3, p219)? The existing Marxist literature has no answer to any of these questions.

In other words, is the falling rate of profit a real threat to capitalism? Bauer's scheme appears to show the opposite. By the end of year four both the fund for accumulation and the fund for capitalist consumption have grown absolutely. And yet, precisely with Bauer's scheme it will be shown that there are economic limits on accumulation, that Bauer's harmonist conclusions about possibilities of unlimited development represent a banal delusion.

6. The views of classical economists on the future of capitalism. Ricardo. JS Mill (pp111-117)

Marx's theory represented only the final stage of a fairly long development. It was directly linked to the theory of the classical economists and absorbed specific elements from the latter in a modified and deepened form.

Ricardo had already reached the conclusion that due to the rising costs of basic means of subsistence profits must necessarily shrink.'Profits have a natural tendency to fall'. However, since profits are the only motive for accumulation, it follows that 'without this motive there could be no accumulation....Their motive for accumulation will diminish with every diminution of profit, and will cease altogether when their profits are so low as not to afford them an adequate compensation for their trouble and the risk they take...' (Principles, p141). Ricardo viewed the distant future of capitalism with a sense of apprehension. 'If our progress should become more slow; if we should attain the stationary state, from which I trust we are yet far distant, then will the pernicious nature of these laws become more manifest and alarming' (Principles, p129).

The roots of Ricardo's theory of breakdown are discernible in the imperfect valorisation of capital that defines advanced stages of accumulation. The actual phenomenon, the tendency for the rate of profit to fall, was correctly perceived by Ricardo but he explained it in terms of a natural process rooted in the declining productivity of agriculture. Marx had only to replace this natural basis with a social one intrinsic to the specific nature of capitalism.

The theory of breakdown acquired a more developed form in the work of John Stuart Mill (Principles of Political Economy, B.IV.Chap IV,4-8) despite the several distortions produced by his false theory of wages (the wage fund theory), his false theory of ground-rent, his erroneous conception of the relation of fixed capital to the level of the rate of profit, and by his general lack of clarity about the decisively important role of profit for the existence of capitalism. Mill viewed the 'stationary state' as the general direction of the advance of modern society, but, unlike Ricardo, he contemplated the tendency with a sense of equanimity. 'I cannot regard the stationary state of capital and wealth with the unaffected aversion so generally manifested towards it by political economists of the old school' (Principles, Vol.2, 2nd ed., 1849, p310). His standpoint was one of a petty-bourgeois reformism that sought to appease capital with the idea that 'a stationary state of capital' would in no sense jeopardise the general progress of 'human improvements'. In his completely unreal utopianism Mill seems to have forgotten that the accumulation of capital is an essential condition of capitalist production, that the capitalists have not the least interest in 'human improvements', they are interested only in the level of profitability and that in this respect Ricardo and his school showed a more correct understanding of the vital conditions of capitalism than Mill himself.

But if we ignore these obviously essential points, then we shall have to concede that Mill showed a far clearer insight into the breakdown tendency and its causes, as well as into many of its counteracting moments. In his fundamental principle he argued that if capital continued to accumulate at its existing rate and no circumstances intervened to raise its profits, only a short time would be needed for the latter to fall to the minimum. The expansion of capital would then soon reach its ultimate limit (Principles, p289 f.), and a 'general overstocking' of the market would occur. To Mill the basic difficulty was not the lack of markets, but the lack of investment opportunities.

Now obviously 'counteracting circumstances' can to some extent displace or postpone this 'ultimate limit'. Among such circumstances which counteract absolute overaccumulation, Mill lists 1. worsening conditions of workers, 2. devaluation or destruction of capital, 3. improvements in technology, 4. foreign trade that procures cheaper supplies of the elements of production, including raw materials and means of subsistence and finally 5. export of capital to the colonies or to foreign countries. We shall go into these circumstances in more detail later.

Any comparison of the corresponding sections in Vol.3 with this theory of breakdown developed by Mill will immediately show that Marx linked up his own theory to the one proposed by Mill. Even if Marx gave it a much deeper foundation and made it consistent with his law of value, its seminal role is indisputable. Already in its external structure it shows the same logical construction one finds in Ricardo and in Marx. Marx also tackles the problem in two stages: first the tendency towards breakdown, then the counteracting tendencies, and refers to the fact that the process of capital accumulation 'would soon bring about the breakdown of capitalist production were it not for counteracting tendencies

that have a continuous decentralising impact...' (cf p13 above). In fact, Marx mentions all the 'counteracting tendencies' adduced by Mill, even if he adds some others and to some extent ascribes a different theoretical meaning to them (eg. regarding the function of international trade, where Mill follows Ricardo).

7. The Marxian theory of accumulation and breakdown (pp117-137)

If we are going to discuss the tendencies of development of a system, in this case, the tendency of accumulation to adjust to the growth of population, then it is not enough to look simply at one or two years, we have to view the development of the system over a much longer span of time. Bauer did not do this. He restricted his calculations to just four cycles of production. This is the source of his mistakes. (The same holds for Tugan, who followed through the development of his system for only three years and claimed, 'It is quite unnecessary to continue with this analysis into the fourth, fifth and following years' (Studien, p24). The problem is precisely whether accumulation under the conditions postulated by Bauer is possible in the long run. If Bauer had followed through the development of his system over a sufficiently long time-span, he would have found, soon enough, that his system necessarily breaks down.

If we follow Bauer's system into its 36th year, holding by all the conditions postulated, we shall see that the portion of surplus-value reserved for capitalist consumption (k) which amounts to 86 213 in the fifth year and grows over the following years, can only expand up to a definite highpoint, after which it must necessarily decline, because it is swallowed up by the portion of surplus-value required for capitalisation.

TABLE TWO
Bauer's reproduction scheme continued

Yr.	c		v		k		a_c		a_v		AV	k/s %	a/s %
5.	292600	+	121550	+	86213	+	29260	+	6077	=	535700	70.90	29.10
6.	321860	+	127627	+	89060	+	32186	+	6381	=	577114	69.70	30.30
7.	354046	+	134008	+	91904	+	35404	+	6700	=	622062	68.60	31.40
8.	389450	+	140708	+	94728	+	38945	+	7035	=	670866	67.30	32.70
↓													
20.	1222252	+	252691	+	117832	+	122225	+	12634	=	1727634	46.60	53.40
21.	1344477	+	265325	+	117612	+	134447	+	13266	=	1875127	44.30	55.70
25.	1968446	+	322503	+	109534	+	196844	+	16125	=	2613452	33.90	66.10
↓													
34.	4641489	+	500304	+	11141	+	464148	+	25015	=	5642097	0.45	99.55
35.	5105637	+	525319	+	∅	+	510563	+	14756	=	6156275	∅	

\# required: 26265
deficit: 11509

36. (i) capital available: 5616200
(ii) capital in operation: 5499015
(iii) surplus capital: 117185

population available: 551584
active population: 540075
reserve army: 11509

549015 + 540075 + ∅ + 540075# + ∅##

\# deficit: 21545
deficit: 27003
total deficit: 48548

$$\frac{k + a_c + a_v}{c + v}$$ (rate of profit)

year	%
5.	29.30
6.	28.40
7.	27.40
8.	26.50
↓	
34.	9.70
35.	9.30
36.	8.70

(a) The failure of valorisation due to overaccumulation

Accumulation proceeds at an accelerated tempo despite the fall in the rate of profit, because the scope of accumulation expands not in proportion to the level of the rate of profit, but in proportion to the weight of the already accumulated capital (Cap 3, p240), 'because beyond certain limits a large capital with a small rate of profit accumulates faster than a small capital with a large rate of profit' (Cap 3, p245-46). (One really understands nothing of Marx's system if one thinks, as Boudin does, that a fall in the rate of profit 'naturally interrupts the advance of the accumulation process and acts like an automatic brake' which slows down its tempo (p169). I have shown that it is not only not 'natural' that accumulation should slow down with the fall in the rate of profit, but that, on the contrary, it can proceed at an accelerated pace.) In fact, we can see that after 10 years the original capital expands from a value of 300 000 to 681 243, or by 227%, despite a continuous fall in the rate of profit. In the second decade the rate of expansion of capital amounts to 236%, although the rate of profit falls even further from 24.7% to 16.4%. Finally, in the third decade, the accumulation of capital proceeds still faster, with a decennial increase of 243%, when the rate of profit is even lower. So Bauer's scheme is a case of a declining rate of profit coupled with accelerated accumulation.

And of course, constant capital grows rapidly, so that from 50% in the first year, its share of the annual product reaches 83% in the thirty-fifth year. The portion k reaches a peak in year 20 and from the following year on (r point) declines both relatively and absolutely. In year 34 it reaches its lowest level only to disappear completely in year 35, from which it follows that the system must break down (wodurch das System zusammenbrechen musste). Ie, the capitalist class has nothing left for its own personal consumption, all existing means of subsistence have to be devoted to accumulation and in spite of all that there is a deficit of 11 508 av. In year 35 Dept 2 produces consumer goods to a total value of 540 074 whereas, on Bauer's assumption of a 5% increase in population, 551 584 v is required, and that too for the working class alone, so that the capitalist will again have to live on air. In other words, Bauer's assumptions cannot be sustained any further, the system breaks down and this breakdown of valorisation is reflected as its incipient crisis. From year 35 on any further accumulation of capital under the conditions postulated would be quite meaningless (zwecklos). The capitalist would be wasting effort over the management of a productive system whose fruits are entirely absorbed by the share of workers.

'Overproduction of capital', Marx writes, 'always means overproduction of means of production — of means of labour and consumption — which could serve as capital, ie, be employed to exploit labour at a given degree of exploitation; on the other hand, a fall in this degree of exploitation below a given point produces disruptions and stoppages in the capitalist process of production, crises and destructions of capital' (Cap 3, p250 t.m.).

If this state persisted, it would mean a destruction of the capitalist mechanism, its economic end. For the class of entrepreneurs accumulation would be not only meaningless, it would be objectively impossible, because the overaccumulated capital would lie fallow, would not be able to function, would fail to valorise, to yield any profits. 'A sharp and sudden fall in the rate of profit would occur' (Cap 3, p246), and would in turn produce a sudden, precipitous devaluation of capital. Yet this fall in the rate of profit at the stage of overaccumulation is different from the fall in the rate of profit at early stages of accumulation of capital. As such, a falling rate of profit is a permanent symptom of the progress of accumulation through all its stages, though at the initial stages of accumulation it goes together with an expanding mass of profits and expanded capitalist consumption. 'Beyond certain limits' Marx says, (these limits are symbolised as r1; in the scheme they appear in year 21) the falling rate of profit is accompanied by a fall in the share of surplus-value earmarked for capitalist consumption (k) and soon afterwards of the portions of surplus-value destined for accumulation. 'The fall in the rate of profit would then be accompanied by an absolute decrease in the mass of profit...and the reduced mass of profit would have to be calculated on an increased total capital' (Cap 3, p247).

This Marxian theory of the economic cycle which sees the growing valorisation of social capital as the determining cause of accumulation, or of the upswing, and its imperfect valorisation as the cause of the downturn into crisis, has been fully confirmed by recent empirical studies. WC Mitchell has shown for the United States, Lescure for France (period 1874-1919) and finally Stamp for Great Britain (1880-1914) that in periods of boom profits show an uninterrupted rise, whereas in periods of crisis the level of profitability declines. (Mitchell, Business Cycles, New York 1927; Stamp, 'The effect of trade fluctuations upon profits', Journal of the Royal Statistical Society of London, 1918; Lescure, Des crises generales et periodiques de surproduction, Paris 1910). However, the agreement is at a purely factual level. Lescure supposes that reductions in profitability are due to shifts in commodity prices and prime costs. He overlooks the fact that profitability depends on the magnitude of capital, namely, on the relationship between the rate of increase of profits and that of capital. Overaccumulation is possible, and at a specific stage of accumulation, necessary, even for a given level of commodity prices and a given level of prime costs. Further expansion of production can become unprofitable even if the level of profits remains the same, in fact, even if it rises. But to understand these complicated relationships, it is not enough simply to observe the movement of prices. A more sophisticated method is required, and here the assumption of constant prices for all elements of cost is crucial to the exactness of the investigation. Price changes in the level of costs (means of production, wages, interest) only encourage or constrain phases of boom or stagnation, they do not actually produce these phases themselves.

(b) The formation of the reserve army and of fallow capital due to overaccumulation

Imperfect valorisation due to overaccumulation is, however, only one side of the accumulation process, and we have to look at its second side. Imperfect valorisation due to

overaccumulation means that capital grows faster than the surplus-value extortable from the given population, or that the valorisation base, the working population, is too small in relation to the swollen capital. But soon overaccumulation leads to the opposite tendency — towards the closing stages of the business cycle the mass of profits (s), and therefore also the portions ac and av, contract so sharply that the additional capital is no longer sufficient to keep accumulation going on the previous basis, hence no longer sufficient to enable the process of accumulation to absorb the annual increase in population. To illustrate this in terms of the scheme, in year 35 the rate of accumulation requires a level of 510 663 ac + 26265 av = 536 818, whereas the actual available mass of surplus-value totals only 525 319; in relation to the actual available surplus-value, the requisite rate of accumulation is thus 104.6%, which is a logical contradiction and impossible in reality. From this point onwards valorisation no longer suffices to enable accumulation to proceed in step with the growth of population. (Naturally we presuppose the given level of technology.) Or accumulation has become too small, which means that a reserve army is inevitably formed and grows larger year by year. Given our analysis of the reproduction process in terms of a schematic model whose presupposition is dynamic equilibrium, and where, therefore, by definition there can be no surplus population, or reserve army, initially, the latter emerges only at an advanced stage of accumulation and as its product. The assumption which is made initially can no longer be sustained and it is violated. 'A surplus population of workers is a necessary product of accumulation' (Cap 1, p784). In fact, Table 2 on p20 shows that 11 509 workers remain unemployed, they form a reserve army. And because only a part of the working population now enters the process of production, only a part of the additional constant capital (5 10 563 ac) is required for buying means of production. The active population of 540 075 requires a constant capital of only 5 499 015, with the result that 117 185 represents a surplus capital with no investment possibilities.

The scheme is thus a lucid example of the condition Marx had in mind when he called the corresponding section of Vol.3 'Excess Capital and Excess Population' (Cap 3, p245). Overaccumulation, or imperfect valorisation, ensues because the population base is too small, and yet there is overpopulation, a reserve army. But we cannot speak of a logical contradiction here. 'This plethora of capital' Marx writes, stems from the very circumstances that produced relative overpopulation, and is therefore a phenomenon that supplements the latter, although they stand at opposite poles — unemployed capital at one pole, and a populaton of unemployed workers at the other' (Cap 3, p246 t.m.). And a few pages later: 'It is no contradiction that this overproduction of capital goes together with fairly widespread relative overpopulation. The very circumstances that raised the productivity of labour, augmented the mass of commodity products, expanded markets, accelerated the accumlation of capital in terms of mass and in terms of value, and depressed the rate of profit — these very circumstances have also created, and continue to create, a relative over-population, an overpopulation of workers who can find no employment with the surplus capital due to the low degree of exploitation of labour at which they would necessarily be employed, or at any rate due to the low rate of profit they would yield at the given degree of exploitation' (Cap 3, p250-51 t.m.).

(Thus according to Marx there is too much capital and there are too many workers with respect to valorisation, or the rate of profit. Rosa Luxemburg shatters the clear sense of this passage by forcibly introjecting her theory of insufficient market outlets, of which there is no trace in Marx. After quoting the passage concerned, she asks, 'In relation to what is there "too much" of both? In relation to the market under normal conditions, ie, those that would secure the necessary profit. As the market for capitalist commodities periodically grows too small, a portion of the capital must lie fallow' (Anti-critique, p126 t.m.). But at Cap 3, pp250-251 Marx says not a single word about the lack of markets, and on the contrary goes so far as to say that the very causes that expanded markets and accelerated accumulation have also lowered the rate of profit. Hence the precise opposite of what Luxemburg supposes: not decline in profitability due to lack of markets and the impossibility of accumulating, but decline in profitability due to accelerated accumulation and expansion of markets. Moreover, Luxemburg states that the market for capitalist commodities periodically grows too small. But she herself makes not the slightest effort to show why there is this periodic shortage of outlets, and from her standpoint the periodicity of crises simply cannot be explained.)

A classic illustration is the USA today (March 1928), where, together with a superfluity of capital, shortage of investment opportunities and massive speculation in real estate and shares, there is a surplus working population of 4 million unemployed workers! And this not because too much surplus-value has been produced (as Luxemburg supposes) but because in relation to the accumulated mass of capital too little surplus-value is available. 'The fact that the means of production and the productivity of labour increase more rapidly than the productive population expresses itself, therefore, under capitalism, in the inverse form that the working population always increases more rapidly than the valorisation requirements of capital' (Cap 1, p798).

Now we must be careful to distinguish the formation of the reserve army due to a crisis of valorisation and the 'setting free' of workers through machinery. The displacement of the worker by machinery, which Marx describes in the empirical part of Vol.1 ('Machinery and large-scale industry') is a technical fact produced by the growth of M relative to L and as such not a specifically capitalist phenomenon. All technological advance rests on the fact that labour becomes more productive, hence that it is economised, or set free, in relation to a given product. That machinery sets free labour is an incontrovertible fact that hardly needs any 'proof', because it belongs to the very concept of machinery as a labour-saving means of production. This process of the 'setting free' of workers will occur in any mode of production, including the planned economy of socialism. From this it follows that Marx could not possibly have deduced the breakdown of capitalism from this 'natural' fact. In fact, in chapter 25 of Vol. 1, where Marx derives the general law of capitalist accumulation, the setting free of the

worker through the introduction of machinery is not mentioned. Here what Marx emphasises are not the changes in the technical composition of capital (M : L) but changes in the organic compostion of capital (c:v). 'The most important factor in this investigation is the composition of capital, and the changes it undergoes in the course of the process of accumulation' (Cap I, p762). To make the meaning clear, he adds later, 'Wherever I refer to the composition of capital without further qualification, its organic composition is always understood' (id.). Now the technical composition forms only one component of the organic composition; the latter is something more. It is a value composition determined by the technicial composition and reflecting its changes. Consequently here Marx converts the techncial side of the labour-process, the relation M : L. into a value-relation, c:v. Under capitalism, the means of production M and L figure as components of capital, as values, and they have to be valorised, ie, yield a profit. The valorisation process, and not the technical process of production, is the characteristic driving force of capitalism. Wherever valorisation falters, the process is interrupted, even if from the standpoint of the satisfaction of needs the productive process as a technical process may be desirable and necessary. Workers are retrenched. The existing literature has totally ignored the fact that the process of 'setting free' of labour that Marx describes in the chapter on accumulation, and which is reflected in the formation of the reserve army, is not rooted in the technical fact of the introduction of machinery, but in the imperfect valorisation of capital specific to advanced stages of accumulation, and therefore in a cause that flows strictly from the specifically capitalist form of production. Workers are made redundant not because they are displaced by machinery, but because, at a specific level of the accumulation of capital, profits become too small, and consequently it does not pay to purchase new machinery and so on, and profits are not sufficient to cover these purchases anyway.

(On the decisive role of the valorisation needs of capital, see Cap I p782, p784, p798. That according to Marx crises, disruptions and, ultimately, the breakdown are caused by imperfect valorisation is something Luxemburg simply cannot deny. She writes, 'Throughout the chapter dealing with the labouring population Marx talks about the "valorisation requirements" of capital. Demand for labour, wage levels, prosperity or crisis all depend on these. What are these "valorisation requirements" which Marx mentions all the time and Bauer not once in his entire "mechanism"?' (Anti-critique, p131). Luxemburg's answer to this question comes a few pages later when she identifies the valorisation needs of capital with its 'market prospects' (p134). It is quite remarkable that Marx 'all the time' mentions only valorisation when he has in mind the market prospects. It would be hard to beat Luxemburg in her stupid scholasticism. Bukharin too is forced to concede that imperfect valorisation of capital plays the decisive role in the failure of capitalism, but he does not trace this to the inner laws of capitalism as their necessary consequence, but reduces it to purely contingent and external circumstances. Of course, valorisation can fail when there are no markets available. But to formulate the problem in these terms is to obscure it. The real problem lies in showing how valorisation can disappear despite a state of equilibrium where a stable market appears to be secured, or where no wars disturb the mechanism from the outside.)

The portion of surplus-value destined for accumulation as additional constant capital (ac) increases so rapidly that it devours a progressively larger share of surplus-value. It devours the portion reserved for capitalist consumption. k, swallows up a large part of the portion reserved for additional variable capital (av) and is still not sufficient to continue accumulation at the postulated rate of 10% a year. In year 1 the portion ac is 20 000 or 20% of the disposable surplus-value of 100 000. By year 35 it climbs to 510 563. or to over 97% of the disposable surplus-value. 14 756 survives as a residue to cover wages, whereas for full employment 26 265 is required. For the capitalist's consumption nothing remains. The disposable mass of surplus-value does not suffice to secure the valorisation of the swollen capital. Because 11 509 workers remain unemployed in the following year, the expanded capital now operates on a reduced valorisation base.

Long before this final point is reached, already from year 21 onwards, when the k-portion begins to decline absolutely (r point), accumulation will have lost all meaning for the capitalist. Each further advance in accumulation means a further absolute reduction in capitalist consumption.

At r point the progress of accumulation is thus necessarily interrupted and a crisis sets in.

The vital importance of capitalist consumption (k) to the continued existence of capitalism is evident only at this point. For accumulation to occur, surplus-value must be deployable in a three-fold direction and must be divided into three corresponding fractions:

1 into additional constant capital, ac,
2 into additional variable capital, av, or additional means of subsistence for workers,
3 into a consumption fund for the capitalists, k.

Each of these three fractions is equally essential to the further expansion of production on a capitalist basis. Suppose the available surplus-value could cover only the first two, accumulation would be impossible. For the question necessarily arises — why do capitalists accumulate? To provide additional employment to workers? From the point of view of capitalists that would make no sense once they themselves get nothing out of employing more workers.

From the point of view of the distribution of income, such a mode of production would end up losing its private capitalist character. Once the k-portion of surplus-value vanishes, surplus-value in the specific sense of an income obtained without labour would have disappeared. For the other two fractions of surplus-value, the additional constant capital, ac, and the variable capital, av, retain their character of surplus-value only so long as they are means for the production of this fraction—of the consumption fund for the capitalist class. Once this portion disappears, not an atom of unpaid labour falls to the share of the capitalists. For the entire variable capital falls to the share of the working class, and constant capital serves purely as a means of oper-

ating the labour-process whose entire annual product falls exclusively to the share of the working class, once means of production have been replaced out of it. Surplus-value in the sense of unpaid labour, of surplus labour over and above the time required to produce essential means of subsistence, would have vanished. All means of consumption would now form necessary means of consumption. So it follows that the k-portion is an essential characteristic condition of the accumulation of capital.

The vacuous and scholastic manner in which Luxemburg argues is apparent only now. Contemptuously she dismisses this element from her analysis, saying, 'And yet the growing consumption of the capitalists can certainly not be regarded as the ultimate purpose of accumulation; on the contrary, there is no accumulation in as much as this consumption takes place and increases; the personal consumption of the capitalists must be regarded as simple reproduction' (The Accumulation of Capital, p334). Luxemburg does not bother to explain how under simple reproduction the consumption of the capitalists can actually grow in the long run. Regarding the purpose of accumulation Marx tells us that the aim of the entire process, enrichment or valorisation, 'by no means excludes a growth in the capitalist's consumption in line with the increase in the magnitude of surplus-value. In fact, it absolutely includes it ' (Cap 2, p149. Cf. Cap 1, p741). But to Luxemburg accumulation only seems to make sense if the consumption of capitalist commodities is left to the non-capitalist countries. And this belongs completely in the tradition of mercantilism. 'We find among the exponents of the mercantile system...long sermons to the effect that...a capitalist nation should leave the consumption of its commodities and the process of consumption in general to the other more stupid nations...' (Cap 2, p139). Obviously Marx had anticipated the whole of Luxemburg's theory.

We should not suppose, however, that the capitalist simply waits passively until the entire k-portion has been swallowed up. Long before any such time, at latest from point r onwards, when the k-portion begins to decline absolutely (in the scheme year 21), he will do his utmost to halt the tendency. In order to do this he must either cut the wages of the working class or cease to observe the conditions postulated for accumulation, namely, the condition that constant capital must expand by 10% annually to absorb the annual increase in the working population at the given technological level. This would mean that from now on accumulation would proceed at a slower rate of say 9.5% or 8%. The tempo of accumulation would have to be slowed down, and that too permanently and to an increasing degree. In that case accumulation would fail to keep step with the growth of the population. Fewer machines and so on would be required or installed, and this only means that the productive forces would be constrained from developing. It also follows that from this point in time on a growing reserve army would necessarily form. The slowing down of accumulation and the formation of the industrial reserve army must necessarily follow even if wages are assumed to be constant throughout this period. At any rate, they would not be the result of an increase in wages, as Bauer supposes.

8. Marx's theory of breakdown is also a theory of crises (pp137-41)T

The Marxian theory of accumulation described here comprises not only a theory of breakdown but also a theory of crises. If the previous writings of Marx simply could not come to terms with the essence of this theory, this is so because of their lack of understanding of the method that underlies Marx's analysis and the structure of his magnum opus. The objection has repeatedly been made that, despite its crucial role in his system, Marx nowhere ever produced a comprehensive description of his theory of crisis, that he made scattered conflicting attempts at an explanation in various passages of the book. This objection rests on a crude misunderstanding. The object of Marx's analysis is not crisis, but the capitalist process of reproduction in its totality. Given his method of investigation Marx examines the unending circuit of capital and its functions through all the phases of the process of production and on a progressively higher scale. Expressed in a formula this would mean:

$$\text{Circuit one: } M\text{-}C \begin{matrix} \nearrow mp \\ \searrow L \end{matrix} \ldots P \ldots C + c\text{-}M + m \; (= M')$$

$$\text{Circuit two: } M'\text{-}C \begin{matrix} \nearrow mp \\ \searrow L \end{matrix} \ldots \text{(etc)}.$$

Analysing each of the phases described by capital in its circuit as money capital, productive capital and commodity capital, Marx asks, what impact do they have on the process of reproduction, can this process advance smoothly or 'normally', or does the normal course of reproduction encounter obstacles or disruptions in its various phases, in which case, what sort of obstacles, and what are the factors that hinder the reproduction process in a given phase. One consequence of this method of investigation is that Marx is compelled to return to the problem of crises at various places in his work, in order to assess the specific impact of each of the individual factors that come into play in the different phases of the circuit.

A systematic description of the role of all these factors will have to be reserved for my major study. Given the specific object of my investigation, here I shall have to examine the impact of one factor alone, even if it is the decisively important one -- of the accumulation of capital, from the aspect of crises. This means that I shall be looking at the effects of the fact that a given capital which began its first circuit as M (money capital), opens up its second circuit as M'.

I have shown that as long as no counteracting or modifying tendencies intervene, these effects are such that from a certain exactly determinable level of capital accumulation they have to lead to a breakdown of the system (See Figure One).

If in the coordinate system OX and OY the line OX represents a position of equilibrium or 'normal valorisation' and OZ the line of accumulation, then the crisis of valorisation could be expressed as a deviation of the line of accumulation from the position of equilibrium, e.g. in the direction ZS. This would be the tendency [illegible]

breakdown, the basic tendency of the system or its 'trend'.

Now let us suppose that in our coordinate system (see Figure Two) the breakdown actually sets in at point z_1 and manifests itself in the form of an enormous devaluation of capital whose overaccumulation starts at r_1 (this is represented graphically by the punctuated line z_1-o_1). In that case the overaccumulated capital will be reduced back to the magnitude required for its normal valorisation, and the system will be brought back to a new state of equilibrium at the higher level of o_1-x_1. In fact we know that in Marx's conception crises are simply a healing process (Gesundungsprozess) of the system, a form in which equilibrium, ie, valorisation, is again re-established, even if forcibly and with huge losses. From the standpoint of capital every crisis is a 'crisis of purification'. Soon the accumulation process picks up again, on an expanded basis, and within certain limits that are shown in the reproduction scheme (eg o_1-r_2) it can proceed without any disruption of equilibrium. But 'beyond certain limits', from point r_2 on, the accumulated capital again grows too large, the mass of surplus-value starts to decline, or valorisation begins to slacken, until finally at point z_2 it evaporates completely in the sense described earlier so that the breakdown sets in again and is again followed by devaluation of capital, z_2-o_2, and so on.

Now if we can show that due to various counteracting tendencies the unfettered operation of the breakdown tendency is repeatedly constrained and interrupted (at points z_1, z_2, z_3, etc), then the breakdown tendency will not work itself out completely and is therefore no longer describable in terms of an uninterrupted straight line ZS. Rather it will break up into a series of fragmented lines O-z_1-o_1, o_1-z_2-o_2, o_2-z_3-o_3, etc, all of them tending to the same final point. In this way the breakdown tendency, as the natural 'fundamental tendency' of capitalism, splits up into a series of apparently independent cycles, which are only the form of its constant, periodic reassertion. Marx's theory of breakdown is thus the necessary basis and presupposition of his theory of crises, because according to Marx crises are only the form in which the breakdown tendency is temporarily interrupted and restrained from realising itself completely. In this sense every crisis is a passing deviation from the 'trend' of capitalism.

FIGURE ONE

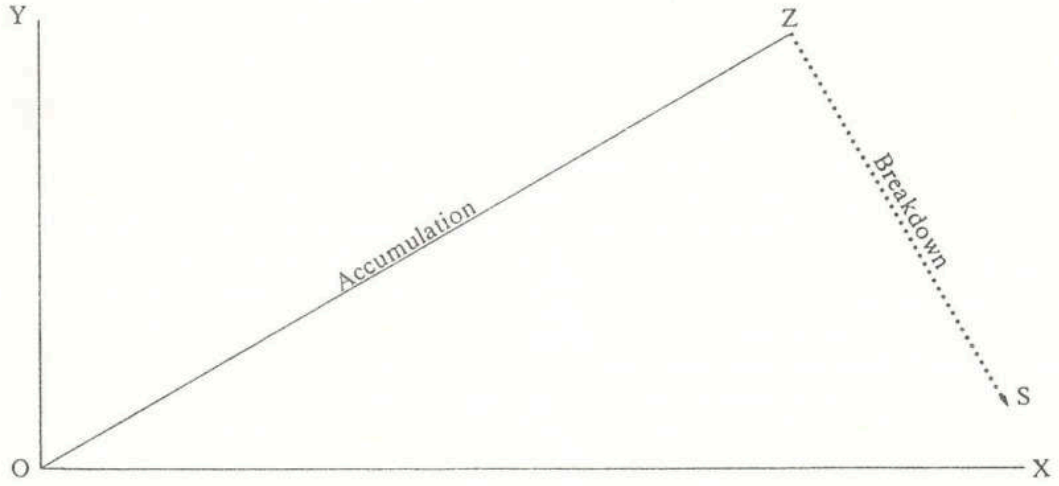
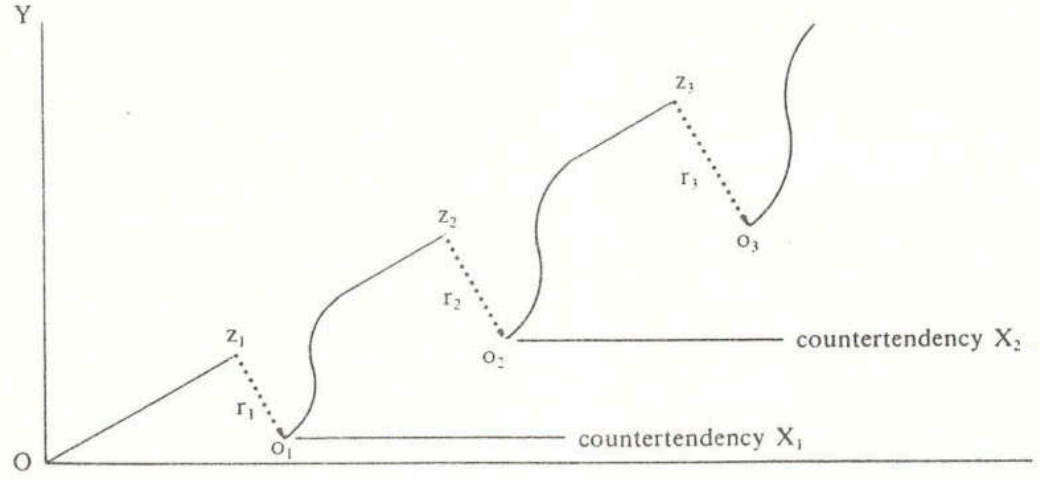


FIGURE TWO



But despite the periodic interruptions that repeatedly defuse the tendency towards breakdown, the mechanism as a whole tends relentlessly towards its final end, with the general process of accumulation: as the accumulation of capital grows absolutely, the valorisation of this expanded capital becomes progressively more difficult. Once these countertendencies are themselves defused or simply cease to operate (their description forms the content of chapter three of this book), the breakdown tendency gains the upper hand and asserts itself in the absolute form as the 'final crisis'.

(The exposition given above clearly suggests that capital accumulation forms the decisive element in Marx's theory of crises. On the other hand, the influence of other factors is of great significance for the actual course of the crises, especially the role of fixed capital as the factor that governs the periodicity of the crisis. Unfortunately, I cannot go into this in more detail here, because this factor comes under simple reprodution and is therefore outside the framework of my analysis. Here it is enough to say only this — in contrast to the currently prevelant conception, even in Marxist writings, that there is no problem of a business cycle under simple reproduction, Marx demonstrates that even in simple reproduction crises must periodically burst forth due to the impact of fixed capital.)

9. An anti-critical interlude (pp142-79)

The passing of booms and the turn to depression is frequently explained in terms of a series of factors that push costs of production up, reduce profitability and dampen business activity. This is the view of Cassel, who gets stuck at the surface level and cannot grasp the deeper connections, the essence underlying the appearances. It is obvious that increases in costs of production do threaten profitability and can intensify the crisis. But this factor only accelerates the formation of a crisis, it does not produce the crisis itself. The methodological significance of the analysis proposed here is that it forestalls any such attempt to displace the problem or to drive it into secondary issues. Interest and its fluctuations are excluded from the analysis, because here one is concerned with a total surplus-value that has not yet split into its several portions. Rising prices are likewise excluded, because by assumption commodities sell at value. Finally, the same is true of the commodity labour-power. By assumption workers receive only the value of their labour-power in the course of accumulation. And in spite of all this the process of capital accumulation grinds to a halt. The crisis ensues. Its formation is thus independent of the various price movements.

The real problem, the essence of the appearances, emerges in its pure form only through abstraction from all these subsidiary moments. The accumulation of capital is too large — there is absolute overaccumulation — because valorisation is insufficient. Yet this insufficient valorisation has nothing to do with wage increases or price increases in general. It necessarily arises even if prices and wages are held constant.

One might raise the objection that such a description is perhaps correct from a purely abstract logical point of view, but difficult to reconcile with the actual facts of experience. Does the accumulation process really come to an end due to overaccumulation of capital? Cassel assures us that even in the final stages of the business cycle there is never a superfluity of fixed capital (Cassel, Theoret. Sozialokonomik, 1923, p579f.). There is no overaccumulation of capital, but rather a capital shortage, an insufficient supply of capital. So does our theory of accumulation contradict the facts of experience?

Cassel argues that the deepest cause of crises lies in a 'wrong calculation' by businessmen of the future state of the capital market or of the supply of savings that will be forthcoming to match their investment schedules. But apart from the purely psychological character of this theory, it simply obscures matters. The supply of capital is too small. But what capital is Cassel talking about? Obviously not about the already accumulated and functioning capital, about c+v in the scheme. Since he refers to a future supply of savings, he can only be meaning the additional capital that has still to be accumulated and which is symbolised in the scheme by the magnitudes ac + av. But what does a shortage of this 'capital' mean? What is the source of the supply of this capital? Why is there a shortage of this capital? Instead of pursuing the formation of this capital to its birthplace — the sphere of production — Cassel gets bogged down in the sphere of circulation. Before it is 'saved', it has to be produced. It is produced by the workers and appropriated by the capitalist as surplus-value. So future capital, what Marx calls 'every new bit of capital looking round for a function' (Cap 1, p792) forms only a portion of the surplus-value, the portion that is not consumed but 'saved' or destined for accumulation. To say that this additional capital becomes increasingly in short supply as accumulation progresses in that case really only means that in the course of accumulation the primordial source of this capital, surplus-value, becomes progressively more scarce, too small, in relation to the already accumulated mass of capital. If the mass of surplus-value is too small, then so is the portion destined for purposes of accumulation. Thus Cassel simply mixes up concepts. He speaks of a capital shortage, an insufficient supply of capital. In the language of the banker everything is capital. Actually Cassel is not talking about capital, but about a part of surplus-value that still has to be accumulated, that represents capital only potentially and becomes capital only through its function in the valorisation process. So really there is not a shortage of capital, but a shortage of surplus-value. On the contrary, of capital, of the already functioning capital c + v, there is an overaccumulation. Overproduction of capital and imperfect valorisation are correlative concepts each of which determines the other. A capital that fails to fulfil its function of valorisation ceases to be capital; hence its devaluation. The devaluation of capital is here a necessary, logical consequence of its insufficient valorisation. It is otherwise with Cassel. He too refers to a 'sudden devaluation of fixed capital' due to capital-shortage. He speaks of devaluation because in reality there is such a phenomenon as devaluation, and theory must take some stand in relation to it. But Cassel cannot account for the fact of devaluation in terms of his theory. It bears no logically necessary connection with it. From Cassel's theory of crises it is in fact impossible to derive an explanation of devaluation. Given

his subjective theory of prices how can capital be 'devalued' if it is in short supply? On the other hand, in Marx's theory imperfect valorisation and devaluation of the original capital stand in a close logical connection.

A definitive answer to the question raised by Diehl is also possible only now. He asked, is there any necessary relationship between Marx's theory of value and surplus-value and socialism? He argued there isn't and thought one could easily concede that profit, ground-rent, etc. are rooted in the surplus-value extorted from workers but no 'socialist conclusions' necessarily follow as long as one supposes that surplus-value is indispensable to technical and economic progress. But what a fantastic misunderstanding! Surely it is not a question of one's moral assessment of surplus-value but of the variations in its magnitude, if we are going to decide what civilising role it plays. As the possibility of valorisation disappears, surplus-value ceases to play any such role, it ceases to develop the productive forces of society, and capitalism must necessarily make way for a higher form of production. Marx showed that given its dynamic basis in the law of value (w = c + v + s) capital accumulation runs up against definite limits, ie, it bears a transitory character, because in the long run the surplus-value s does not suffice for the valorisation of c + v.

F Oppenheimer is one of the sharpest and best-known recent critics of Marx's law of accumulation. He says, 'Honestly speaking(!) it can no longer be disputed that...Marx's law of capitalist accumulation and his deduction of the reserve army are logically erroneous and that therefore his definition of the tendency of capitalist development is false' (System der Soziologie. Jena. 1923, I p1098). But Oppenheimer's mistakes are strikingly obvious when we compare what he means by the Marxian theory of accumulation with the one presented here. The elegant deductions characteristic of a sharp thinker fail completely here. He vacillates in his characterisation of the theory of accumulation. Sometimes he sees it purely as a product of Hegel's dialectic of contradiction. 'The solution Marx proposed flowed from his application of the "dialectical method"' (Oppenheimer, Kapitalismus, Kommunismus, Wissenschaftlicher Sozialismus, 1919, p115). But we have shown that what distinguished Marx from Sismondi and Jones was his ability to develop a purely economic proof of the downfall of capitalism. Oppenheimer, however, fails to notice this proof! According to him the theory of breakdown which he agrees is the 'pillar of Marx's whole economics and sociology' (p137) flows not from an analysis of capitalism but from an application of Hegel's dialectical method. Elsewhere Oppenheimer states that the problem Marx was concerned with in the theory of accumulation was not one capable of solution purely by deduction: actually Marx based his theory on the inevitable growth of a reserve army purely on an empirical 'impression' that he gained from a study of English capitalism (Oppenheimer. Das Grundgesetz der Marxschen Gesellschaftslehre, Berlin,1903, p56). On a third occasion, Oppenheimer claims that the Marxian theory of accumulation was established by way of a deduction (Kapitalismus, usw. p136) which he calls 'an imposing deduction', a 'gigantic effort', a 'solution attempted in the grand style' (id. pp135-146). And all of this only shows that Oppenheimer has overlooked the real content of this theory.

The imperfect valorisation of the accumulated capital, in Marx the decisive phenomenon that destroys the capitalist mechanism from the inside, is not mentioned by Oppenheimer even once! Instead, Oppenheimer brings in 'two elements' that have nothing to do with Marx's theory of accumulation.

I. The first is 'that machinery sets free workers' (Kapitalismus, p137). I have already drawn out the difference between the displacement of workers by machinery and their being set free in the very process of accumulation. Oppenheimer confuses these phenomena. (In fact, he drags in a third kind of 'setting free', argues that more labour is displaced in the countryside than in industry and concludes that 'the process of setting free can have nothing to do with changes in the organic composition of capital' (Die soziale Frage, p105). Here Oppenheimer overlooks something quite elementary: the basis of Marx's analysis is 'capital in its pure form'. Marx is concerned with the condition of workers who already function as wage-labourers. In the countryside the process of 'setting free' is a 'setting free' of small producers, is their proletarianisation and conversion to wage-labour.) Machinery displaces the worker. Hence, Marx supposedly argues, the productive process creates 'a chronic relative overpopulation', which leads to a permanent oversupply of labour-power that pins wages down to the minimum.

Actually the process of 'setting free' that Marx discusses in the chapter on accumulation is something quite different from displacement by machinery. Its cause is the accumulation of capital, ie, insufficient valorisation at a definite, advanced stage of accumulation. Down to this point the number of workers grows absolutely. 'With the growth of the total capital, its variable constituent, the labour incorporated in it...increases' (Cap 1, pp781-82). But with accumulation it increases 'in a constantly diminishing proportion' until at a specific level of accumulation its growth ceases completely and turns into 'a relatively redundant working population, ie, a population which is superfluous to capital's average requirements for its own valorisation and is therefore a surplus population'(id.).

Oppenheimer misses the point completely because he ignores the basic difference between the technical labour-process and the capitalist valorisation-process. Machinery in relation to labour-power (M:L) and constant capital in relation to variable (c:v) represent two absolutely different categories and to confuse them is to end up in serious mistakes. 'It took both time and experience before the workers learnt to distinguish between machinery and its employment by capital, and therefore to transfer their attacks from the material instruments of production to the form of society which utilises those instruments' (Cap 1, pp554-55). It was from this 'form of society' and not from the technical application of the real means of production that Marx deduced the necessary end of the accumulation process.

Secondly, Oppemheimer's interpretation of the theory of the reserve army in the sense of a chronic overpopulation is quite false. What prevails instead is the law of the alternative

attraction and repulsion of workers, so that the absolute number of workers who find employment and are later thrown off can, and does, actually increase. 'In all spheres, the increase of the variable part of capital, and therefore of the number of workers employed by it, is always connected with violent fluctuations and the temporary production of a surplus population' (Cap 1, p782). So it is not a question of chronic overpopulation, as Oppenheimer supposes, but of the periodic re-formation and reabsorption of the reserve army within the production cycle. 'The path characteristically described by modern industry, which takes the form of a decennial cycle...depends on the constant formation, the greater or lesser absorption, and formation of the industrial reserve army or surplus population' (Cap 1, p785). It follows that the absolute number of workers can grow and indeed must grow if accumulation or expanded reproduction is to occur.

2. The second so-called 'premise' of Marx's deduction is the classical wage-fund theory (Kapitalismus, p138). According to Oppenheimer, Marx 'took over this theory in its decisive aspects' (p141). 'The classical theory derived all prices from supply-demand relations, and resolved the problem of wages, ie, of the price of labour, on the same basis' (p138), ie, in terms of the demand of social capital K and the supply of workers A. In the wage-fraction K/A, Ricardo took K to mean only circulating capital. Marx is supposed to have gone even further, identifying the numerator with a still smaller capital-component, variable capital.

So Marx is supposed to have resolved the problem of wages in terms of supply and demand! I have shown the complete untenability of this view elsewhere (Grossmann, 'Eine neue Theorie uber den Imperialismus', Grunbergs Archiv f.d. Gesch. des Sozialismus XIII p180f. Reprinted in Aufsatze zur Krisentheorie, p113f). Marx's theory of wages is only a special case of the theory of value applied to the commodity labour-power, and just as in value theory the determination of value proceeds quite independently of competition, or supply and demand, the same is true for Marx's theory of wages. Oppenheimer expresses Marx's wage theory in terms of the formula $L = v/A$. In doing so he omits the value basis of Marx's definition of wages, the factor of reproduction costs r, from Marx's formula for wages. Marx's formula is $L = r\,(v/A)$, but because his initial assumption is a state of equilibrium, he sets $v = A$, or disregards the fraction $v/A = 1/1$. It follows that in Marx the wage is determined by the coefficient r, ie, the reproduction costs or value of labour-power which is independent of competition. Now because Oppenheimer simply fails to understand this determination of wages in terms of value, the factor which, according to Marx, exerts an upward pressure on real wages in the course of capitalist development, the growing intensity of labour, likewise escapes him. This is why he can arrive at the patently false conclusion that in the Marxian system wages 'can never rise above their lowest point'.

Since Oppenheimer's description of Marx's theory of wages as a wage-fund theory is absolutely false, the criticisms he develops of Marx's theory of accumulation from this particular aspect also crumble. To demonstrate the inevitable formation of a reserve army, Marx hardly needed to appeal to supply-demand relations. In his system the reserve army is a result of the process of reproduction at a late stage of accumulation, and not, as Oppenheimer supposes, a permanent precondition for the reproduction of the capital relationship. Given the nature of Marx's simplifying assumptions, the reserve army can only be deduced from the accumulation process as its necessary consequence.

'A surplus population of workers is a necessary product of accumulation or of the development of wealth on a capitalist basis' (Cap 1, p784). Naturally, once it has come into being this surplus population 'becomes, conversely, the lever of capitalist accumulation, indeed it becomes a condition for the existence of capitalism' (id). The existence of the reserve army is a vital condition for an actual, empirically given capitalism, but not by way of reproducing the capital relationship so much as to make possible sudden expansions of production, because 'in all such cases there must be the possibility of suddenly throwing great masses of men into the decisive areas without doing any damage to the scale of production in other spheres. The surplus population supplies these masses' (Cap 1, p785). However, initially Marx takes as the object of his analysis not this empirically real capitalism with its sudden expansions, but the ideal trajectory of capitalist reproduction, and so he is perfectly justified in excluding the reserve army from his analysis in the initial stages.

3. And now we come to Oppenheimer's description of Marx's 'proof procedure'. What is the basic idea in the chapter on accumulation? Oppenheimer takes this to mean that the accumulation of capital is responsible for the continued existence of capitalism because the existence of a reserve army is a crucial precondition of the reproduction of the capital relationship. This is completely wrong. In the section on the historical tendency of capitalist accumulation Marx describes not the continued existence of capitalism, but its direct opposite, the bursting apart of the capitalist relationship, or the end of capitalism as a necessary consequence of accumulation. The existence of capital itself, ie, the separation of the worker from the means of production, is quite sufficient for the reproduction of the capital relationship. A reserve army is not crucial in this respect.

But Oppenheimer is preoccupied with the problem of the setting free of workers through machinery and misses the basic point in Chapter 25. His myopic concentration on machinery precludes him from ever tackling the problem of insufficient valorisation due to accumulation. He deals with the latter only in passing, and that too entirely from the standpoint of the subjective experience of the individual capitalist. Here again Oppenheimer overlooks the fact that Marx does not directly analyse empirical reality, in the sense that in the chapter on accumulation the object of his analysis is surplus-value and its variations of magnitude, whereas reality only confronts us with the individual parts into which surplus-value splits up (interest, profit, rent, commercial profit, etc).

Surplus-value is only a theoretical form of totalising these individual parts that confront us in reality. Marx's proof

procedure has the character of a deduction. With respect to deductions of this nature Oppenheimer makes the excellent comment. 'Any appeal to experience is quite inadmissible. A deduction is not validated because its results conform to experience' (Kapitalismus, p150). But in his critique of Marx's deduction, Oppenheimer appeals precisely to...experience! Marx has to deduce a specific phenomenon, the imperfect valorisation of the total social capital, from the very conditions of accumulation. Over against his demonstration that in the course of accumulation the reduction of surplus-value brings the latter to a standstill, Oppenheimer replies, 'Firstly, experience teaches us that as interest declines (Marx speaks of surplus-value, not interest, Grossmann) accumulation proceeds all the more vehemently.' It is as clear as daylight that Oppenheimer confounds the shortage of surplus-value, or imperfect valorisation, with a declining rate of interest. The rate of interest may decline to any blessed level, but not surplus-value. Interest is only an individualised portion of profit: if interest falls, entrepreneur's profit rises. Suppose interest were to fall due to an oversupply of loan capital, what would be the result?

Loan capital would flow into production, and the money capitalist would be transformed into an industrial capitalist. All that would result is a redistribution of capital. The matter is quite different when we look at the total surplus-value, and total social capital — and that is what Marx looks at in his description of the social process of accumulation. Once surplus-value declines below certain exactly calculable limits, capital accumulation necessarily breaks down, due to the defective valorisation of capital. The result would be an extraordinary devaluation of capital. Oppenheimer presents matters as if accumulation and its scale depend solely on the good will and psychology of the saver. He ignores the objective conditions of accumulation, ie, the magnitude of the disposable surplus-value, which determine the limits of the scale of accumulation. Oppenheimer knows no such limits to the accumulation of capital. He supposes that workers displaced by machinery can be re-absorbed as long as accumulation is sufficiently rapid. He overlooks the essential point: for a given size of population and a given rate of surplus-value is the requisite scale and tempo of accumulation possible in the long run? I would say 'no' and I have tried to demonstrate this as exactly as is possible within the limits of deduction. Oppenheimer cites three possible forms of the process of compensating retrenchments through growing accumulation of capital. 1. There is more retrenchment in certain industries than re-employment in others: partial compensation. 2. Retrenchment and re-employment are equal: full compensation. 3. Re-employment is greater: overcompensation. The law of accumulation would be valid if the first case prevailed. Oppenheimer then asks, 'Which of these three cases is the actual one? This problem cannot be resolved through mere deduction: it is an equation with several unknowns. It can only be solved with figures: one would have to compare the number of unemployed at different points of time'. On the other hand, there was hardly any statistical data available to Marx to decide the question. As neither deduction nor empirical proof was possible, he was finally left with an impression that the reserve army tends to increase (Das Grundgesetz, p56).

So according to Oppenheimer the fundamental law of the Marxian system, the 'law of motion' of capitalism, was an illicit generalisation of vague empirical impressions! But the entire argument is untenable. Marx's theory of breakdown was neither a generalisation from purely empirical observations, nor an elaboration of Hegel's dialectic of contradiction; it was derived through deduction as a self-evident consequence of the accumulation of capital on the basis of the law of value. Oppenheimer's statement that the problem is not soluble by deduction is contradicted by the fact that I have used a concrete numerical example to provide an actual solution, and, as we shall see, this is also possible mathematically. As far as empirical relationships are concerned there may very well be a difficulty of an equation with several unknowns. But no such difficulty exists for theory. Through the simple procedure of making certain assumptions theory can transform all unknown variables into known quantities which are also measurable.

The scheme developed earlier proceeds from a state of equilibrium where despite a rising organic composition of capital, the retrenchment of workers is cancelled by their re-employment. And yet this state is only possible for a certain period of time. At a certain point accumulation becomes impossible on the basis assumed, because it runs up against limits to valorisation, and Oppenheimer's second case is transformed into his first case. At this late stage of accumulation the retrenchment of workers dominates over their re-employment, not due to the action of machinery, but due to imperfect valorisation. The quantum of surplus-value does not suffice to keep accumulation going on the necessary scale.

Over against Marx's deduction Oppenheimer abstains from presenting any deductive counterproof and relies purely on empirical facts. But Oppenheimer himself knows that we cannot arrive at a theory through simple experience. Marx could quite easily agree that from time to time over-compensation has occurred in industry, but this would not in the least affect the Marxian law of accumulation and breakdown. Indeed, additional labour-power is a necessary, constitutive part of the very concept of accumulation. The entire system is constructed on the notion of surplus-value, on the greatest possible intensive and extensive exploitation of labour-power. By its very nature capital strives to employ the largest possible number of workers. It is impossible to understand how one could criticise Marx with his own statement that, on the whole, the number of workers employed in industry grows, not only absolutely but as a ratio of the total population. As the population base expands, the upper limits of capital accumulation are pushed back. This is one form in which the breakdown tendency is defused and postponed to the future (See chapter 3, section 13). But, on the other hand, from the law of accumulation it follows that for a given size of working population capital accumulation encounters insuperable limits, beyond which any further accumulation is pointless. Naturally the internal consequences of accumulation are always interrupted and neutralised by 'modifying circumstances'. Hence the periodic, cyclical alternation of phases of expansion and phases of breakdown. However, if we abstract from the alternative attraction and

repulsion of workers in the course of the industrial cycle, and follow through only the secular tendency of development, we shall have to conclude that in the initial stages of capital accumulation population was, on the whole, too large in relation to the existing scale of accumulation. Hence Malthus and Malthusianism. In the late stage of accumulation the inverse relationship dominates. In relation to the enormous accumulation of capital, population, the base for valorisation, becomes increasingly smaller. Hence the sharpening tensions in the advanced capitalist countries in the course of accumulation, the increasing role of capital exports, the ever more brutal expansionist tendencies of capital to secure the largest possible reserves of human labour-power. But here capitalism runs into obstacles. The world is already divided up. The economic displacement of large masses of people encounters difficulties. And so the very tendencies that defuse the breakdown are themselves defused, and the breakdown intensifies.

K Muhs' critique of Marx (Anti-Marx, 1927) shows not the slightest trace of originality. He simply draws together the arguments developed by others. Like them he ignores the decisively important passages of Vol.3 on the falling rate of profit. With Oppenheimer he agrees that Marx's theory of accumulation has an empirical basis. This is then criticised empirically. The superficiality of this method is perfectly obvious. Totally incapable of mobilising a single theoretical argument to launch a frontal attack on the law of accumulation, Muhs tries to finish off the theory through an empirico-statistical detour. Population has expanded in the industrialised countries—this is supposed to refute the theory that workers are set free in the course of accumulation. But theory? There is not the least trace of any theory in Muhs.

On the other hand, the process of breakdown described above should not be confused either with the limits to accumulation that Bauer talks about. So as not to be taken for an apologist of capital, Bauer claims that he has discovered a limit to the accumulation of capital. This limit is set firstly by the proportionality between the two departments of the reproduction scheme and secondly, by the rate of growth of population at a given level of productivity. Variable capital has to be accumulated in a specific proportion to increases in population, and this prescribes the limits to the growth of constant capital, since there is likewise a specific proportionality between constant and variable capital. The proportionality c:v is the limit Bauer discusses. Should the constant capital expand at a faster rate than that required in terms of its proportional relation to variable capital, the result will be overaccumulation of capital, should it expand at a slower rate, underaccumulation. Crises arise only because the neecessary proportionality between accumulation and population is not maintained. As long as accumulation proceeds within these limits, it can advance indefinitely under the assumptions made. True, Bauer speaks of 'overaccumulation'. But this occurs only because the conditions specified by him are violated. In fact, these conditions can be maintained even in the long run, he argues, and the very mechanism of capital ensures that all disturbances of equilibrium are automatically corrected. 'Like underaccumulation, overaccumulation is only a passing phase of the industrial cycle' (p870).

The way I have described it, the process is totally different. I have shown that even if all conditions of proportionality are maintained and accumulation occurs within the limits imposed by population, the further preservation of these limits is objectively impossible. The system of production described in Bauer's own scheme has to breakdown, or the conditions specified for the system have to be violated. Beyond a definite point of time the system cannot survive at the postulated rate of surplus-value of 100%. From r point there is a shortage of surplus-value and under the given conditions, a continuous overaccumulation. Alternatively, one has to violate the conditions postulated, ie, wages have to be cut in order to push the rate of surplus-value even higher. In which case, this cut in wages would not be a purely temporary phenomenon that vanishes once equilibrium is re-established, it will also be continuous. After year 36 either wages have to be cut continually and periodically, or a reserve army has to come into being. Thus this would not be one of those periodic crises within the system that Bauer refers to, for a crisis of this sort could always be surmounted by adjusting the scale of the productive appparatus to the available population. Here there is no more room for adjustments. The proportionality conditions required by Bauer have been preserved throughout, and still after year 35 a crisis, a tendency towards breakdown, sets in. The real dynamic of the capitalist system is quite different from what Bauer supposes. The way he explains it capitalism is characterised by a 'tendency for the accumulation of capital to adjust to the growth of population' (p 871). I have shown the opposite, however — there is a tendency towards an absolute overaccumulation of capital that outstrips the limits imposed by population.

The same holds for Turgan. He believes: 'If social production were organised according to a plan, if those in charge of it had a perfect knowledge of demand and had the power to shift labour and capital freely from one branch of production to another, the supply of commodities would never exceed the demand' (Studien, p33). Now Bauer's scheme represents precisely this kind of planned, organised production, in which the managers know all they need to about demand and have the power to adapt production to demand. In spite of this there arises a tendency towards breakdown, valorisation declines absolutely, a reserve army forms. This only shows that the problem is not whether there is a surplus of commodities or not—the only thing that matters to Luxemburg. In fact, we have assumed a state of equilibrium, where, by definition, there can be no unsaleable residue of commodities; and still the system must break down. The real problem lies in the valorisation of capital: there is not enough surplus-value to continue accumulation at the postulated rate. Hence the catastrophe.

Obviously, as Lenin correctly remarks, there are no absolutely hopeless situations. In the description I have proposed the breakdown does not necessarily have to work itself out directly. Its absolute realisation may be interrupted by counteracting tendencies. In that case the absolute breakdown would be converted into a temporary crisis, after which the accumulation process picks up again on a new basis. In other words, the valorisation of the overaccumulated capital can be met through capital exports to countries at a lower stage of accumulation. Or, a sharp

devaluation of the constant capital during the crisis might improve the prospects for valorisation. Or wage cuts could have the same effect in terms of warding off the catastrophe. But quite apart from the fact that all these situations violate the assumptions postulated in Bauer's scheme, these solutions would have a purely temporary impact. Restored accumulation will again generate the very same phenomena of overaccumulation and imperfect valorisation.

10.The logical and mathematical basis of the law of breakdown (pp179-190)

This tendency of development of pure capitalism could be demonstrated with any scheme at all—it is not peculiar to Bauer's. The result is incontrovertible, because it flows from the very essence of accumulation, it is something contained a priori in the concept of accumulation, insofar as the latter proceeds on the basis of a rising organic composition of capital (or is accelerated accumulation).

If in year 1 the amounts due for capitalisation constitute 25% of a surplus-value of 100 000 (20 000 a_c+5000 a_v=25 000), in year 2 their share increases to 26.25% of an expanded surplus-value of 105 000 (22 000 a_c+5250 a_v=27 250. The actual ratio should be 25.95%, JB). Under these conditions, the reservoir of surplus-value is progressively exhausted, and the accumulated capital can only be valorised at an increasingly unfavourable rate. After some time the reservoir dries up completely—the quotas due for capitalisation turn out to be far in excess of the available mass of surplus-value. even though notionally they are only fractions of this surplus-value. This is the contradiction. At the hypothesised rate of accumulation, the mass of surplus-value can no longer supply the annually necessary mass for accumulation. The breakdown of the system is the inevitable consequence.

Apart from the arithmetical and logical proofs that we have been given already, mathematicians may prefer the following more general form of presentation, where one avoids the purely arbitrary values of a concrete numerical example.

A. Meaning of the symbols (Terminology)

c = constant capital
Initial value = c_o
Value after j years = c_j
v = variable capital
Initial value = v_o
Value after j years = v_j
s = rate of surplus-value (= 100% of v)
a_c = rate of accumulation of constant capital c (as a %)
a_v = rate of accumulation of variable capital v (as a %)
k = consumption share of the capitalists
S = mass of surplus value = $k + \frac{a_c.c}{100} + \frac{a_v.v}{100}$
Q = organic composition of capital, or c:v
Initial value=Q_o
j = number of years

Further, let $r = 1 + \frac{a_c}{100}$; $w = 1 + \frac{a_v}{100}$

B. The formula

After j years, at the assumed rate of accumulation a_c, the constant capital c reaches the level $c_j = c_o.r_j$. At the assumed rate of accumulation a_v, the variable capital v reaches the level $v_j=v_o.w_j$. The year after (j+1) accumulation is continued as usual, according to the formula:

$$S = k + \frac{c_o.r^j.a_c}{100} + \frac{v_o.w^j.a_v}{100} = \frac{s.v_o.w^j}{100}$$

whence

$$k = \frac{v_o.w^j}{100}(s-a_v) - \frac{c_o.r^j.a_c}{100}$$

For k to be greater than O, it is necessary that

$$\frac{v_o.w^j}{100}(s-a_v) > \frac{c_o.r^j.a_c}{100}$$

$k = 0$ for a year n, if

$$\frac{v_o.w^n}{100}(s-a_v) = \frac{c_o.r^n.a_c}{100}$$

The timing of the absolute crisis is given by the point at which the consumption share of the entrepreneur vanishes completely, long after it has already started to decline.

This means

$$\left(\frac{I}{W}\right)^{n} = \frac{s - av}{Q_0 . ac}$$

whence

$$n = \frac{\log\left(\frac{s - av}{Q_0 . ac}\right)}{\log\left(\frac{100 + ac}{100 + av}\right)}$$

This is a real number, as long as $s > av$. But this is what we assume anyway throughout our investigation.

Starting from time-point n, the mass of surplus-value S is not sufficient to ensure the valorisation of c and v under the conditions postulated.

C. Discussion of the formula

The number of years n down to the absolute crisis thus depends on four conditions specifically:

(1) on the level of the organic composition Q. The higher this is, the smaller the number of years. The crisis is accelerated;
(2) on the rate of accumulation of the constant capital ac, which works in the same direction as the level of the organic composition of capital;
(3) on the rate of accumulation of the variable capital av, which can work in either direction, sharpening the crisis or defusing it, and whose impact is therefore ambivalent, as you can see from the formula (On this more later);
(4) on the level of the rate of surplus-value s, which has a defusing impact, ie, the greater s is, the greater is the number of years n, so that the breakdown tendency is postponed.

The accumulation process could be continued if the earlier assumptions were modified, namely (a) either the rate of accumulation ac, is reduced, and the tempo of accumulation slowed down, or (b) the constant capital is devalued, which again reduces the rate of accumulation ac; (c) labour power is devalued, hence wages cut, so that the rate of acumulation of variable capital av is reduced and the rate of surplus-value s, enhanced; (d) finally, capital is exported, so that again the rate of accumulation ac, is reduced.

These four major cases allow us to deduce all the variations that are actually to be found in reality and which impart to the capitalist mode of production a certain elasticity.

In fact, in reality we find that once the given level of valorisation collapses and the accumulation process stagnates, sooner or later counteracting tendencies come into play, that is to say, the capitalist attempts to restore the valorisation of his capital. In the crisis capital is devalued, and this is followed by a reorganisation and concentration process in which the rate of profit is increased through higher productivity and 'rationalisation'; the same effect is achieved through direct wage cuts. We shall get to know these counteracting tendencies a bit more in Chapter 3. Through the impact of these processes the breakdown tendency is interrupted, accumulation can restart on a new level, and the absolute collapse is transformed into a temporary crisis. This is the simple explanation of what Spiethoff falsely regards as Marx's 'confusion' of the long-term and general tendencies that drive towards breakdown with conjunctural shifts of a short-term character.

The crisis is, therefore, from the standpoint of capitalist production, a healing process through which the valorisation of capital is restored. 'Crises are always only forced temporary solutions of the existing contradictions, violent eruptions which for a while restore the disturbed equilibrium' (Cap 3, p244 t.m.). By its very nature the duration of this process of recovery is indeterminable. Whereas the time-span of accumulation can be calculated down to its maximal point z, so that the length of the upswing is determinate, an exact determination of the length of the crisis is not possible. By one means or another the entrepreneur strives to restore valorisation until sooner or later he succeeds in doing so. The crisis is only a more or less prolonged interval between two phases of accumulation.

Once counteracting tendencies come into play, the assumptions under which the analysis was worked out necessarily change. Any modification of these along the lines suggested above would mean that for a period of time the process continues on a new basis, up until a new absolute crisis, which can be exactly determined under the new set of assumptions and calculated according to the same formula. The crisis can likewise be surmounted by changing the conditions postulated yet again, eg, if the entrepreneur enforces a renewed cut in wages. But quite apart from the fact that a wage cut would disrupt the initial assumption of the expansion of variable capital that corresponds to increases in the working population, after a certain lapse of time the further continuation of accumulation would prove untenable, despite the cut in wages, it would again run up against the limits of valorisation and thus necessitate further wage cuts, and so on and so forth.

Only these underlying connections enable us to draw out the true meaning of Marx's statement that it lies in the essence of capitalism to push wages not simply down to the minimum necessary for subsistence, but even lower than this minimum. 'This zero cost of labour is therefore a limit in a mathematical sense, always beyond reach, although we can always approximate more and more nearly to it. The constant tendency of capital is to force the cost of labour back towards this absolute zero' (Cap 1, p748). 'It follows therefore that in proportion as capital accumulates, the situation of the worker, be his payment high or low, must grow worse' (Cap 1, p799). 'The greater the social wealth, the functioning capital, the extent and energy of its growth...the greater is the industrial reserve army. The same causes which develop the expansive power of capital, also develop the labour-power at its disposal....The greater this reserve army in proportion to the active labour army...the greater is official pauperism. This is the absolute general law of capitalist accumulation. Like all other laws, it is modified in its workings by many circumstances, the analysis of which does not concern us here' (Cap 1, p798).

People have tried to challenge this absolutely necessary general tendency which is inherent in pure capitalism by reference to the actual level of real wages in this or that period. As if Marx ever denied that it was possible for real wages to increase in specific phases of capitalist accumulation! The fact remains that at a late stage of accumulation this general tendency for the level of real wages to be depressed asserts itself inexorably from the very process of capital accumulation on the basis of a rising organic composition. It follows that this tendency can be delayed for some time, it can be slowed down, by the action of specific counteracting tendencies, but it cannot be abolished. Abstracting from such purely temporary phases, we see that from a certain point of accumulation onwards wages must decline continuously under pure capitalism, despite any initial increases; after this point, the tempo of accumulation and technological advance slows down and the reserve army grows. But obviously such a process cannot last indefinitely. For a continuous deterioration of wages is only possible theoretically, ie, it is a purely abstract possibility. In reality the constant devaluation of labour-power accomplished by continual cuts in wages runs up against insuperable barriers. Every major cut in its conditions of life would inevitably drive the working class to rebellion. In this way, and through the very mechanism that is internal to it, the capitalist system moves incessantly towards its final end, dominated by the 'law of entropy of capitalist accumulation'.

11. Why the Marxian theory of accumulation and breakdown was misunderstood (pp190-198)

There are specific reasons why the compelling logic of Marx's theory of accumulation was never followed through consistently down to its proper conclusion, even by Marxists themselves. From the correspondence it is possible to see how painful it was for Marx to find that even in the party circles in Germany there was an almost unbelievable indifference to Capital. The immaturity of the German workers' movement of that time corresponds better to Lassalle's pamphlets than to the massive and brilliant structure of Marx's theory. Even the leading brains of the workers' movement were incapable of grasping the really decisive aspects of Marx's theory, and it is quite typical that W Liebknecht (1868) should have requested Engels 'to clarify where the real difference lies between Marx and Lassalle'. So it is not difficult to understand why, as M Beer tells us today, 'down to 1882 and for some years afterwards, there was practically no trace of Marxism in Germany. The writings of Lassalle, the recollections of 1848 and French literature formed the real sources from which the movement drew for its theories, ideas and feelings. Many socialists had been trained by Rodbertus or Dühring, others were at best acquainted with the publications of the International Working Men's Association, and still others founded their demands on appeals to morality and humanity. Kautsky was the first to get through, little by little, with his popularisation of Marx's ideas' (M Beer, Allgem. Geschichte des Sozialismus, Berlin, 1923, V, p77). But precisely when the publication of Marx's Capital was finally complete with the appearance of Vol.3, the rapid flowering of German capitalism doomed any deeper understanding of Marx's theory. The general feeling was that Marx's theory flatly contradicted the real tendencies of capitalism. Far from any further deepening of Marxian theory, it was an epoch characterised by a drift away from it. It was this period of vigorous capital accumulation (1890-1913) that gave birth to revisionism and to those notions of an unfettered, equilibrated capitalism which would recur later even in the writings of the offical spokesmen of theory, like Hilferding and Bauer. The case of Hilferding shows how deeply the fear of catastrophe characteristic of bourgeois economists penetrated into this tendency of Marxism.

In historical retrospect such an attitude to Marx's Capital is not totally incomprehensible. The great popularity of the book was initially due to the parts of the work which describe the immediate process of production within the factory. Its description of the labour-process, which is simultaneously a process of producing value and surplus-value, focused sharply on the position of the working class and its exploitation by capital and made the actual, day-to-day class struggle something entirely comprehensible. So Vol.1 became the 'bible' of the working class for decades to come.

Those parts of the work which describe the historical

tendencies of capital accumulation suffered an entirely different fate. However brilliantly they handled the question of capitalist breakdown, they were doomed to remain unintelligible. Capitalism had still to reach a level of maturity where the question of breakdown and the problem of realising socialism could possess an immediate reality. Marx was so far ahead of his own time that these portions of his work were bound to remain incomprehensible at first, and in this sense Marx's own life-work only went to confirm even further the truth of the materialist conception of history.

Two whole generations had to pass, following the appearance of Capital, before the general advance of accumulation ripened capitalism to its present imperialist stage and generated the conflicts that would find an ephemeral solution in the massive convulsions of war. Only now did the question of achieving socialism gradually descend from the nebulous world of the socialist programme to the reality of day-to-day practice. Finally today one turns to Capital in search of answers to questions that are no longer 'purely academic', no longer simply problems of theory, but problems rooted in the inexorable needs of daily life. The historical situation has changed, and this change tears aside the veils that concealed entire words and meanings from previous generations. The time has come for a reconstruction of Marx's theory of breakdown.

A further circumstance that may have occasioned the general failure to understand this decisive part of Marx's theory is the fact that chapter 3 of section 1 of the third volume, in which Marx deals with the relation of the rate of profit to the rate of surplus-value, and which he later uses as the basis for deducing the law of the tendential fall in the rate of profit, contained 'a series of incomplete mathematical calculations' (Engels, 'Preface', Cap 3, p3). To edit this part of the work Engels had to seek the cooperation of his friend Samuel Moore, who 'being an old Cambridge mathematician was far better equipped for this work' (id.). However, Moore was no economist and ultimately the issues involved were economic ones, even if they required a mathematical form. It is not entirely incredible that mistakes would arise and that these mistakes could easily be carried over into the chapter on the tendential fall in the rate of profit.

In fact, this is almost certainly what happened, considering that a single word could, unfortunately, totally change the sense of the entire explanation: the inevitable end of capitalism is ascribed to a relative fall in the rate of profit, rather than its mass. Obviously Engels or Moore made a slip of the pen here. (Cf. Cap 3, p214: 'The same laws produce for the social capital a growing absolute mass of profit (and a falling rate of profit)'. These words in parenthesis were written by Engels or Marx himself. The correct expression would be 'and at the same time a mass of profit that falls relatively'. For the mass of profit increases absolutely and declines relatively. Logically speaking, this is the contrast intended by the very structure of the sentence—absolute expansion on one side contrasted with relative fall on the other. The rate of profit does not fall relatively, but absolutely.)

'Rate of profit' and 'mass of profit' have entirely different meanings for theory, despite the close connection between them. Several writers like Charasoff, Boudin, etc, felt that the central point of Marx's theory was contained here—but they could not demonstrate the necessary breakdown of capitalism because they confined their attention to the fall in the rate of profit, and the breakdown cannot be derived from this. How could a percentage, a pure number such as the rate of profit produce the breakdown of a real system! Actually Table 2 shows that the capitalist system can survive despite the fall in the rate of profit, and that the final breakdown in year 35 has nothing to do with the falling rate of profit as such. One cannot explain why in year 34, with a rate of profit of 9.7%, the system survives, and why, in the next year, with a rate of profit of 9.3%, it breaks down. An explanation is only possible when we relate the breakdown not to the rate of profit, but to its mass. 'Accumulation depends not only on the rate of profit but on its mass as well' (TSV 2, p536). 'All the circumstances that determine the mass of surplus-value operate to determine the magnitude of accumulation' (Cap 1, p747). This can hold true only on one decisively important condition! In other words, if we accept the view of Sombart and Bauer that value in Marx is in no sense a real phenomenon, but merely an idea, a 'mental fact' or an aid to thought, then the breakdown of capitalism due to a relative decline in the mass of profits (a decline in the rate of profit is simply the external expression of this fact) becomes an inexplicable mystery. Ideas can scarcely destroy a real system. This is why Sombart and Bauer could never come to terms with the Marxian theory of breakdown. But matters are quite different if value and therefore the mass of profit is conceived as a real magnitude. In this case the system has to break down due to a relative fall in the mass of profit, even if the latter can increase, or does increase, absolutely. A falling rate of profit is thus only an index that reveals the relative fall in the mass of profit. The falling rate of profit is, moreover, only important for Marx insofar as it is identical with a relative decline in the mass of surplus-value: 'the law of the progressive fall of the rate of profit or of the relative decline of the appointed surplus labour', Marx writes (Cap 3, p212). Only in this sense is it possible to state that with a falling rate of profit the system breaks down, for the rate of profit falls because the mass of profit declines relatively. 'A fall in the rate of profit...expresses the declining relation of surplus-value to the total capital advanced' (Cap 3, p210). It is this relative decline in the mass of profits (or of surplus-value) conceived as a real magnitude that accounts for the 'conflict between the expansion of production and valorisation' (Cap 3, p242). Beyond a certain limit to accumulation, there is too little surplus-value to secure the normal valorisation of the constantly expanding capital.

12. The factors of the breakdown tendency. The problem of the periodicity of crises. The business cycle and the problem of establishing the length of its phases. The statistical empiricism of the 'business cycle' schools. The provisional exclusion of credit. The tempo of capital accumulation (of booms) and the rate of expansion of population (pp198-225)

Writers like O Morgenstern (Schriften d. Vereins fur Sozialpolit. 1928, Bd.173/2) simply reject the notion that there are any regular or systematic economic fluctuations.

They ascribe to crises a purely contingent character, in the sense that phases of expansion and decline succeed one another purely accidentally. Dietzel tells us, 'for generations attempts have been made to account for crises, ie, for downturns from boom to depression, in terms of definite causes that are inherent in the modern social order ("anarchy", "underconsumption of the masses", etc), to demonstrate that the alternation of periods of expansion with periods of decline is something immanent in "bourgeois economy"'. Against such attempts Dietzel himself sees the purely random fluctuations of the harvest as the basic determinant of conjunctural oscillations (Dietzel, 'Ernten', Handworterb.d.Staatswissensch. 3 Aufl.,1909,Bd.3). Bohm-Bawerk thought a theory of the economic cycle could only form the concluding chapter of a logically complete economic theory. In that case, when it asserts that a theory of economic cycles (eine Konjunktur-theorie) is impossible, bourgeois economics only ends by confessing the bankruptcy of its own economic science.

Yet even those who acknowledge the necessary periodicity of the crises are totally helpless when it comes to specifying its concrete causes. After listing some 13 crises over the years 1753-1890, Palgrave's Dictionary (Vol 1, p466) tells us: 'During these 140 years trade and banking have been carried on in war and peace, with a silver standard, with a gold standard, under a suspension of cash payments, in times of plenty, and in times of want; but the fatal years have come round with a considerable approach to cyclical regularity....The fact of their recurrence in something like periodicity remains—a fact which it is easier to record than explain'. In fact, not a single representative of bourgeois economics could give even a moderately exact causal explanation of the periodicity of crises. At best they give only a partial explanation of this or that phase of the economic cycle. And this failure to account for the periodicity of crises obviously also removes any theoretical basis for establishing the length of the individual phases or the amplitude of the cyclical movements.

When it actually comes down to determining the span of the individual phases, people have plunged straight into empiricism, and the fantastic uproar created recently by the 'exact' results attained by the various business cycle schools (Institute für Konjunkturforschung) only goes to hide the state of theoretical bankruptcy and hopeless empiricism that lurks behind the mathematical disguises of these schools. In the USA 'observations' led to the conclusion that there has been a tendency for the phases of the cycle to become shorter. On the other hand, from his own survey of the English data, Tugan (Studien, p166) came to the conclusion that the crisis cycles have become more prolonged. The 'debate on method' fought out over the last four decades between the historical and the deductive schools, regarding the way a theory is constructed, has simply passed over bourgeois economists without any deeper traces. Today, in the field of business cycle studies, the hopeless empiricism of the historical school of Schmoller is again dominant. For what was the old historical school if not an attempt to establish a preparatory basis for the construction of theories in the form of the richest possible historical evidence? The whole orientation of the modern business cycle schools in the USA and Europe is characterised by the compilation of data of this kind, with only this difference, that the data is perhaps more 'contemporary'. The basic concern of all their work is the selection of appropriate indicators (Symptome). If in America these relate chiefly to circulation, prices, markets, in Germany production is also considered. Yet the basic point is that in either case causal explanation is displaced by description. Bourgeois economics is today tired of theory. The many volumes of the Viertelsjahrshefte zur Konjunkturforschung is crammed full of statistical data. We find a series of indicators like the volume of production and employment in different sectors of industry, the flow of orders, imports of raw materials, inventories, prices and money supply, unemployment, cost of living, etc and a mass of diagrams and mathematical formulas. But as to the causes of periods of expansion, production at high pressure, depression, or of their specific duration there is almost total indifference. Lowe is therefore quite right in saying that 'Basically over the last decade business cycle theory has not advanced a single step forward' (Lowe, 'Wie ist Konjunkturtheorie uberhaupt möglich?' Weltwirtschaftl. Archiv, 1926, II, p166).

(Despite his reservations about the role of empirico-statistical research in economic theory, Altschul (Schriften d.Vereins f. Sozialpolit. 1928, Bd.173/2) overlooks the fact that statistics basically cannot enrich our theoretical insights. Indeed, no earlier epoch has come even vaguely close to ours in the abundance of data at its disposal. Yet what theoretical results can these writings lay claim to? The limited significance of this entire direction of research for theory is admitted by a professional writer, the chief statistician of the Federal Reserve Bank of New York, Carl Snyder: 'If we were to ask what is the sum total of theorems to flow from these detailed and penetrating studies, the answer would have to be that their yield in terms of forecasts or controls, both hallmarks of any real scientific knowledge, is truly low' ('Das Studium der Krisen und Wirtschaftszyklen in den Vereinigten Staaten', in Die Wirtschatstheorie der Gegenwart, Bd. IV, p27). To expect the construction of theory to be directly promoted by expanding empirical insights is a complete misunderstanding of the logical relationship of theory and empirical research.)

Yet even among Marxists there is no less confusion in this field. Marx referred to the factors that prolong or abbreviate the length of the cycle, and for his period assumed that 'for the most important branches of large-scale industry this life-cycle is now on an average a ten-year one'. 'Yet the precise figure is not important here' (Cap 2, p264). The amplitude of the cyclical movements, or of the 'varying phases of the industrial cycle' (Cap 1, p785) could be greater or smaller—yet this would not abolish the periodicity of the movement.

Kautsky feels that despite his basic disagreement with Tugan's theory of crisis, he agrees with him on several points. One of these is 'Tugan's remarks on the causes that determine the periodicity of crises'('Krisentheorie', N Zeit, 20, 1901, p133). That this is logically untenable should be obvious. How can one disagree with a theory of crisis and yet accept the causes of periodicity proposed by this theory? And what is Tugan's epoch-making discovery which impressed Kautsky so much? 'Like Tugan I would identify the fitful

international expansion of railways as one the basic factors behind the alternation of prosperity and crisis. In the 19th century the expansion of the world market and the extension of the railways went hand in hand' (N Zeit, 1901, p137). This is how Kautsky distorted and vulgarised the Marxian theory of crisis. In this shape the theory could satisfy absolutely no one. It is quite natural that Lederer should have supposed that the labour theory of value is really quite incapable of tackling dynamic phenomena and that apart from Luxemburg's theory, 'the whole question of booms and slumps can only be viewed as one of disproportionality' ('Konjunktur und Krisen', Grundriss. der Sozialok. IV/I, p359).

(Actually Lederer's critique of disproportionality theory is the best thing that has been written on the subject. However, it does not affect the Marxian theory of crisis, because the latter traces crises to the periodically recurring shortage of surplus-value. Any theory of disproportionality basically implies a theory of partial overproduction. On the other hand, Marx deduces the crises of 'pure' capitalism from a generalised overproduction that necessarily arises even given complete proportionality. Precisely the possibility of such general crises is the point at issue in Marx's attacks on the Say-Ricardo conception. TSV 2, p493, p521.)

Lederer argues, 'Within the labour theory of value, crises are explained either in terms of the contradiction between increases in productivity and the lagging capacity of the market, or from a wrong distribution of means of production in the individual spheres. But if these are really the causes of crisis, there is no reason why an understanding of these causes should not eliminate crises altogether. Moreover, the periodic character of the crisis is not explained by these theories' (p360). In other words, given a labour theory of value one ends up either with an underconsumption theory or with a disproportionality theory, and neither of these can account for periodicity.

But I have shown that precisely given the labour theory of value, Marx's theory of accumulation does lead to a theory of breakdown and crises, but for quite different reasons to those listed by Lederer. The theory of overaccumulation explains why the reproduction process necessarily takes a cyclical form and finally it is the only theory that allows us to establish the length of the individual phases of the cycle.

(In the following description of the cycle, I can only go into the essential causal relationship. Therefore I shall have to refrain from a more detailed treatment of credit and of its impact on the reproductive process, reserving this for my major study. As against Hahn's assertion 'that a boom is impossible without credit expansion' (Grundprinzipien der monetaren Konjunkturtheorie, Schriften d. Vereins f. Sozialpolitik 1928 Bd.173/2 p159), the Marxist position has to show why crises are inevitable quite irrespective of credit and of the circulation process and how they are rooted in causes within production. 'The superficiality of political economy', Marx says, 'shows itself in the fact that it views the expansion and contraction of credit as the cause of the periodic alternations in the industrial cycle, whereas it is a mere symptom of them' (Cap 1, p786). As early as 1842 Pecqueur demanded that the banks should 'control production'; credit was seen as a means of restoring the health of capitalism. On the other hand, Marx writes, 'at first sight, the crisis appears to be merely a credit and money crisis' (Cap 3, p478). Therefore the Currency School 'sought the origin and cure (of the violent storms in the world market)...in the most superficial and abstract sphere of this process, the sphere of money circulation' (Cap 3, p535). But credit is not the basic cause of crises, and an analysis of the economic cycle and its causes must initially abstract from it. This does not mean that under capitalism credit is of subsidiary importance or something superfluous. On the contrary, 'production on a large scale...throws the total product into the hands of commerce: but it is impossible that the capital of an entire nation should double itself so that commerce can itself buy up the entire national product with its own capital and then sell it again. So credit is indispensable here: credit whose scale expands as the scale of values expands...' (Cap 3, p470 t.m.). One should never forget that the credit system 'is an immanent form of the capitalist mode of production and, on the other hand, the force that drives capitalism to its highest and ultimate form' (Cap 3, p593 t.m.). But far from mitigating or abolishing crises, 'banking and credit become powerful means of driving capitalism beyond its own limits, and form one of the most effective channels of crises and swindles' (id.p593). Given the initial abstraction, obviously the modifying impact of credit has to be taken into consideration at a later stage.)

Now given the method underlying this book, the procedure by which we seek to establish the duration of the phases cannot be an empirical or a statistical one. Even if a firm statistical relationship could be established between certain economic phenomena and the duration of the cycle, this would not by itself show the logically necessary character of this relationship. By means of statistics one can never show why variations in one factor should necessarily cause variations in another. Hayek is quite right in saying that empirically ascertainable relationships among economic facts remain theoretically problematic as long as they are irreducible to underlying patterns 'whose logically necessary character emerges independently of their statistical determination' (A von Hayek, 'Einige Bemerkungen uber das Verhaltnis der Geldtheorie zur Konjunkturtheorie', Schriften d. Vereins 1928 Bd. 173/2). 'As with any economic theory, there are basically only two criteria of validity for a theory of business cycles. Such a theory has to be deducible in a logically unexceptionable way, from the basic principles of the given system of theory, and secondly, it has to be able to generate a purely deductive explanation of the various phenomena one actually observes in the course of the cycle' (p252). Obviously this also holds for the duration of its specific phases. Therefore in the following I want to derive the amplitude of cyclical movements in a purely deductive manner, as a necessary consequence of the basic elements of the mechanism of reproduction.

The formula proposed earlier gives an exact specification of the factors that determine the durational span of the phase of expansion; the length of the phase can be calculated under the conditions specified in the scheme, even if in actual reality the pure movement of this scheme is intersected by circumstances of the most varied kind. I shall use Bauer's

reproduction scheme to show how the length of the phase of expansion is abbreviated or prolonged depending on the variations of these factors.

1. The level of the organic composition. If Bauer had assumed a higher initial organic composition of capital, eg. 200 000 c + 25 000 v, and thus a smaller reservoir of surplus-value, the system would have had to break down much earlier, because in this case the consumption of the capitalists, the k portion, would already start declining from year 1. If we retain all the other assumptions postulated, this would mean:

TABLE 3

Year	c	v	k	a_c	a_v	
1.	200000 +	25000 +	3750 +	20000 +	1250 =	250000
2.	220000 +	26250 +	2938 +	22000 +	1312 =	272500
3.	242000 +	27562 +	1984 +	24200 +	1378 =	297124
4.	266000 +	28940 +	893 +	26600 +	1447 =	323880
5.	292600 +	30387 +	∅ +	29260 +	1519	
				30779		
				(deficit = 392)		

You can see that with a higher organic composition the system has to break down earlier, infact already in year 5. Either the surplus-value due for capitalisation will show a deficit, or the rate of surplus-value, and thus the degree of exploitation, has to be increased sufficiently, ie. wages have to be cut!

Thus the level of the organic composition of capital has enormous significance for the breakdown tendency, and explains why Marx should have said, at the very start of his chapter on the general law of capitalist accumulation, 'The most important factor in this investigation is the composition of capital and the changes it undergoes in the course of the process of accumulation' (Cap 1, p762).

2. The second factor which determines the specific rhythm of the breakdown tendency is the rate of accumulation a_c+a_v. Any increase in this rate will likewise accelerate the breakdown. Suppose the rate of accumulation of constant capital a_c were 20% instead of the assumed 10%, the process would be:

TABLE 4

Year	c	v	k	a_c	a_v	
1.	200000 +	100000 +	55000 +	40000 +	5000 =	400000
2.	240000 +	105000 +	51750 +	48000 +	5250 =	450000
↓						
7.	597196 +	134008 +	7870 +	119438 +	6700 =	865220
8.	716634 +	140708 +	∅ +	143326 +	∅	

Thus if the rate of accumulation were doubled to 20%, the breakdown would follow in year 8. Already by this year the additional constant capital required would be larger than the total surplus-value available! Nothing would be left for additions to variable capital a_v, or for capitalist consumption k.

Now so far we have looked at the rate of accumulation of constant capital purely from the side of its value-magnitude. But what would this factor mean if we were to look at it not from its value aspect, but from the aspect of its natural form, or its material content? It represents means of production which are necessary to expanding the productive apparatus. Now what influence does the physical and 'moral' life-cycle of this element have on the course of accumulation? Sismondi had already claimed that crises are closely connected with the life-cycle of fixed capital. 'It has been remarked that the violent shocks by which manufacturing industry is convulsed nowadays are related to the rapidity with which scientific discoveries are following one another....Not only are the values of existing commodities thereby diminished, but the entire fixed capital and all the machinery...is rendered useless'. Yet no one before Marx explained what exactly the connection was.

The reproduction scheme has so far assumed, for the sake of simplification, that the life-cycle of fixed capital = only one period of production, ie, that this element is used up in each cycle of production and therefore has to be renewed from the year's product. This assumption has a merely fictitious character and it has to be modified. It is more realistic to suppose that the fixed component of constant capital operates over several cycles of production and does not need to be renewed annually. Its participation in the production of value and surplus-value is extended over several years. In this case, even if the value of the fixed capital is itself transferred to the product in a smaller annual rate of depreciation, nevertheless the fixed capital helps in creating a growing mass of value, and, therefore, of surplus-value, in proportion to its actual durability. The valorisation of the given capital is thereby improved, so that the breakdown tendency is weakened, ie, the duration of the phase of expansion is prolonged. Because technological improvements progressively consolidate the physical durability of fixed capital, here we have a factor that tends to prolong the business cycle.

The 'moral' depreciation of fixed capital has precisely the opposite effects. By shortening the time during which the fixed capital functions and thereby reducing the total mass of value and surplus-value which it forms, it only makes the valorisation of the given capital worse and cuts short the period of accumulation, or the upswing. About this Marx says. 'To the same extent as the value and durability of the fixed capital develops along with the general development of capitalism, so also does the life of industry and of industrial capital in the various spheres develop to extend to several years, say an average of 10 years. But if the development of fixed capital extends this life, on the one hand, it is cut short, on the other, by the incessant revolutionizing of the means of production which likewise increases continuously with the development of capitalism. Naturally this leads to changes in the means of production, which now have to be replaced continually due to their moral depreciation, long before they are physically exhausted. We can assume that, for the most important branches of large-scale industry, this life-cycle is now on average a 10-year one. The precise figure is not important here. The result is that the cycle of related turnovers extending over a number of years, within which the capital is confined by its fixed component, is one of the material foundations of the periodic crises that business passes through in successive periods of stagnation, average activity, over-excitement and crisis' (Cap 2, p264 t.m).

3 (a). The impact of the rate of accumulation of variable capital a_v is ambivalent. It has the same effect as the rate of accumulation of constant capital if the population remains constant or grows at the assumed rate of 5%. On this assumption variable capital can accumulate more rapidly than it does in the scheme only if wages are rising from one year to the next. Consequently annual increases in variable capital stem from two causes: because the number of workers is growing, and because wages are rising. Under the circumstances, higher wages means a fall in the rate of surplus-value. Suppose the working population increases by 5% every year, whereas wages rise by 20%. Other conditions being equal, this will mean:

TABLE 5

Year	c	v (workers)	a_c	a_v	k	
1.	200000 +	100000 +	20000 +	26000 +	54000 =	400000
2.	220000 +	105000 +	22000 +	32300 +	50700 =	430000
↓						
11.	518357 +	162886 +	51835 +	105236 +	5815 =	1154791
12.	570192 +	171030 +	57019 +	115497 +	∅	
13.	627211 +	179581 +				
			172516			
			(deficit = 1486)			

An increase in the rate of accumulation a_v accelerates the breakdown enormously. If wages were to rise by 20%, there would be a shortage of surplus-value by year 12.

3 (b). But this case where the rate of accumulation of variable capital rises only because wages are increasing while the rate of growth of population remains constant at 5%, as assumed, must be sharply distinguished from the case where the rate of accumulation of variable capital rises not due to wage increases but because the population is itself expanding at over 5% per year. If all other conditions are the same, an expansion of the valorisation base would necessarily weaken the breakdown tendency. Suppose the working population were to grow at the rate of 8% a year, instead of 5%, and consequently the mass of surplus-value at 8% instead of 5%, then under the conditions assumed in Table 4, the breakdown would be postponed by one year:

TABLE 6

Year	c		v		k		a_c		a_v		
1.	200000	+	100000	+	52000	+	40000	+	8000	=	400000
2.	240000	+	108000	+	51360	+	48000	+	8640	=	456000
↓											
7.	597196	+	158685	+	26553	+	119438	+	12694	=	914566
8.	716634	+	171379	+	14344	+	143326	+	13709	=	1059392
9.	859960	+	185088	+	∅	+	171992	+	14806		
									186798		
									(deficit = 1710)		

4. Finally, there is the rate of surplus-value which is likewise of great importance. So far we have assumed a constant rate of surplus-value of 100%. Obviously with a higher rate of surplus-value the system's collapse will be slowed down, with a lower rate it will be speeded up. Suppose the rate of accumulation of constant capital were 20%, of variable capital 5%, and the rate of surplus-value only 50%, then we would get:

TABLE 7

Year	c		v		k		a_c		a_v		
1.	200000	+	100000	+	5000	+	40000	+	5000	=	350000
2.	240000	+	105000	+	∅	+	48000	+	5250		
									53250		
									(deficit = 750)		

In this example the extremely rapid onset of breakdown is due to the coupling of a higher rate of accumulation with a lower rate of surplus-value. Conversely, the breakdown would be postponed if the rate of surplus-value were, for example, 150%.

In short: the duration of the upswing, or the time-point at which a breakdown and thus the downturn into crisis intervenes, is a function of 4 variable but computable elements. It depends on 1. the level of the organic composition of capital, 2. the rate of surplus-value, 3. the rate of accumulation a_c and 4. the rate of accumulation a_v. If we hold the rate of surplus-value constant, the law of value entails the following necessary consequence: the higher the level of the organic composition and the greater the rate of accumulation of capital a_c, the more rapid will be the breakdown of the system. As long as these elements of the system are known, it is possible to calculate the length of the time-span of accumulation. An expanding scale of accumulation only reduces the scope for further accumulation. This is basically why, since the War (1918), the phases of the business cycle have been conspicuously abridged.

13. Crises and underconsumption theory. Reintroducing credit into the analysis. The cyclical process in the 'three markets': the impulse behind a boom in production (business). Repercussions of the industrial cycle on the money-market and the stock-exchange (pp226-244)

Once we have grasped the causes of the boom it becomes possible to explain a series of empirical phenomena which the existing theories of crisis explain only inadequately. It has been repeatedly said that inflation creates an 'artificial' boom. But what is artificial about a boom of this kind? How is an artificial boom, so-called, different from a real one? Eg, if one sees the underconsumption of the masses as the basic cause of crises, then inflation should be the occasion for a massive crisis, because wages will lag behind commodity prices, real wages will fall and the underconsumption of the working class will increase sharply. But if inflation means an upswing in the economic cycle, this only shows that the underconsumption of the masses cannot be a sufficient explanation of crises. According to this inflationist theory, the appearance of a boom is something quite self-evident: as real wages fall, the rate of profit rises and valorisation is improved.

Yet that the cyclical process is something necessary has been shown despite the abstraction from commodity prices, wages and the rate of interest. In fact, their movements are themselves only a consequence of the underlying cyclical movements and cannot therefore be presupposed except at the cost of logical circularity. This circularity is strikingly evident in Spiethoff. The depression is the cause of the boom that follows, the boom is the cause of the depression ('Krisen', p71).

Actually the fluctuations within the stock-exchange and money-market depend on movements within production (or 'business', one of the three 'markets' discussed by the Harvard School).

We started by assuming complete equilibrium. That is to say, it was assumed that despite its continuously rising technological level the accumulation of capital can keep the entire working population employed. In this sort of state, defined by proportional increases in capital and labour-power, accumulation can proceed without any changes in the structure of prices. I have shown that even assuming these favourable conditions, there must come a point at which accumulation necessarily breaks down.

But a proportional accumulation of this kind is something quite unrealistic. The capitalist mechanism contains no regulator that could consciously adapt the scale of accumulation to the requisite state of equilibrium. The actual scale of accumulation will tend to deviate from the equilibrium positions specified in the reproduction scheme. The magnitude of accumulation depends on how much of the surplus-value is accumulated as a_c and a_v, and how much goes into the personal consumption of the capitalist as the k portion. 'But it is the owner of the surplus-value, the capitalist, who makes this division. It is an act of his will' (Cap 1, p738). Abstractly, two cases are possible: accumulation may either surpass equilibrium level or fall short of it. Practically, however, only the second case is possible and will be considered here. In this case, only a part of the surplus-value is earmarked for purposes of accumulation, so that constant capital grows by, say, only 5% every year. In that case not all of the new workers will be absorbed into the productive process, and a reserve army will be formed year by year. On the other hand, what happens to the remaining surplus-value which is not capitalised? Only a part of it will enter capitalist consumption as k; the remainder will be kept in reserve, for investment purposes, in the form of loan capital (L portion).

So far we have taken the total social capital that is productively absorbed into the process of reproduction as a single unit, and assumed that the industrial capitalist deploys his own capital. This assumption is purely fictitious and only justifiable methodologically for purposes of simplification. It is tantamount to excluding the monied capitalist or rentier from the scope of analysis. 'If all capital were in the hands of the industrial capitalist, there would be no such thing as interest or the rate of interest' (Cap 3, p370). But interest exists in reality and our fictitious assumption therefore has to be dropped. For in reality only a minor proportion of capitalists operate exclusively with their own capital. 'The majority of industrial capitalists...work with their own and with borrowed capital' (Cap 3, p369). Therefore credit in the sense of the portion of surplus-value that is saved, now has to be re-introduced into the analysis. The abstract reproduction scheme is thus enriched by a further empirical moment and the analysis comes a step closer to actual reality.

However, the loan capital which we have to discuss in analysing the real cycle of accumulation is completely different from loan capital in its ideal or normal state. 'For the productive capitalist who works on borrowed capital, the gross profit splits into two parts—the interest which he has to pay the lender, and the surplus over and above this interest which forms his own share of the profit' (Cap 3, p365). It follows that the magnitude of the profit that actually falls to the share of industrial capital is influenced by the rate

of interest. 'The part which belongs to the functioning capitalist is determined by the interest, as this is fixed by the general rate of interest...and is taken as something already given, even prior to the process of production' (Cap 3, p366 t.m.). Now even if there is no law which determines this general rate of interest and so the division of surplus-value into profit and interest, and this division depends exclusively on competition, and even if, in this sense, 'no such thing as a "natural" rate of interest exists' (Cap 3, p350), there must still be an 'average level' of the rate of interest corresponding to the 'normal state' of production in a given country at a given period of time, and determined by the degree of its capital accumulation as well as by the number of its monied When the productive apparatus is in this 'normal state' or state of equilibrium, the entire social surplus-value will be used for accumulation, insofar as it is not personally consumed. Yet one group of capitalists—monied capitalists and rentiers—do not function directly in the productive process, but transfer their capital to capitalists who do. The interest that this group receives from its capital can be regarded as a 'normal interest' determined by the number of these capitalists, the size of their capitals and so on.

But we are dealing with a case where, by assumption, the productive apparatus is too sm. ll and therefore a part of the surplus-value due for accumula ion cannot actually find any productive employment.

This L portion which is neither consumed nor directly capitalised and which appears on the money-market in the specific shape of loan capital in search of investment, actually stimulates business activity by depressing the rate of interest below its 'normal level' in the sense just defined. Accumulation is thus speeded up. 'Expansion of the real process of accumulation is encouraged by the fact that the low interest...enlarges that portion of profit which is transformed into the entrepreneur's profit' (Cap 3, p484).

An analogous process occurs on the labour market. Earlier the entire working population was absorbed into the process of production (say, at a wage of lv per worker) whereas now, in the case where the constant capital expands at a lower than equilibrium rate, a reserve army begins to form almost immediately and to grow continuously thereafter. This in turn depresses the level of wages and again stimulates business activity. Now the rate of surplus-value exceeds 100% because of both factors and the growing profitability on capital produced by a cheapening of the elements of production accelerates the tempo of accumulation. The rate of accumulation would again approximate to its normal, equilibrium rate. Now Table 8 shows that even if one were to assume that constant capital expands only at the low rate of 5% a year, the available loan capital would tend to run dry in the course of accumulation:

TABLE 8

Year	c	v	Res.A	k[1]	L	ac	av
1.	200000 +	25000 +	— +	2500 +	12444 +	10000 +	56
2.	210000 +	25056 +	1194 +	2505 +	11994 +	10500 +	57
3.	220000 +	25113 +	2449 +	2511 +	11516 +	11025 +	61
↓							
7.	268018 +	24842 +	7974 +	2484 +	9211 +	13201 +	38
8.	281219 +	24880 +	9576 +	2488 +	8386 +	14060 +	—

([1]It is assumed that k = 10% of the annual surplus-value, s, which = k + L + ac + av.)

On the other hand, if increased profitability forces up the rate of accumulation of constant capital to over 5%, the mass of loan capital would dry up even sooner. Suppose that starting from a rate of expansion of 5% the constant capital grows by a further 2% every year (5% in the second year, 7% in the third, 9% in fourth and so on), but that all other conditions are equal:

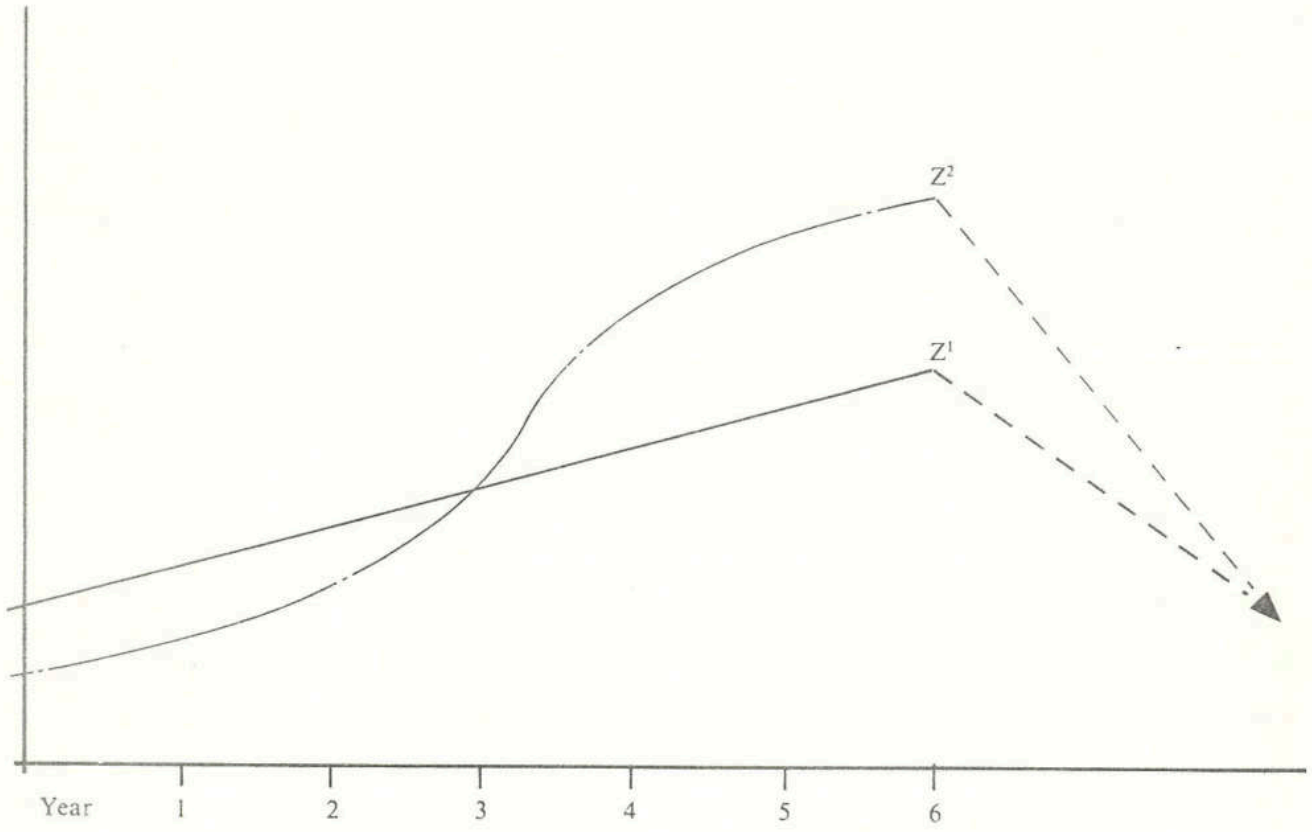
TABLE 9

Year	c	v	Res.A	k	a_c	a_v	L
1.	200000 +	25000 +	— +	2500 +	10000 +	56 +	12444
2.	210000 +	25056 +	1194 +	2505 +	147000 +	535 +	7316
						balance	19760
3.	224700 +	25591 +	1971 +	2559 +	20223 +	1056 +	1753
						balance	21513
4.	244923 +	26647 +	2293 +	2664 +	26941 +	1565 -	4523
						balance	16990
5.	271864 +	28212 +	2175 +	2821 +	35320 +	2238 -	12167
						balance	4823
6.	307184 +	30450 +	1456 +	3045 +	44077 +	2477 -	19249
						deficit	14426
7.	(253361) +	(32927) +	(74) +	∅			

As this table shows, the course of accumulation breaks up into two quite distinct phases. In the first, extending over three years, there is a growing mass of loan capital which reaches its maximal point at the end of the third year. Obviously this expansion of loan capital depresses the rate of interest below its normal level and incites the capitalist to expand the scale of production further. The fourth year is a turning point. Due to accumulation the scale of production reaches a level where there is not enough surplus-value to valorise the accumulated capital. The accumulation fund ($a_c + a_v$) shows a deficit of 4523 which is initially covered by borrowings. This in turn reduces the total mass of available loan capital. Such reductions persist until in the sixth year loan capital is completely exhausted. (Obviously from year 4 the rate of interest will be rising.) Year 6 is the starting point of the crisis, because there is not enough surplus-value to continue accumulation, even after borrowings. This only means that the already functioning capital has been overaccumulated, ie, there is too much of it. (Cf. Cap 3, p477: 'The interest now rises to its average level. It reaches its maximum again as soon as the new crisis sets in. At this point credit suddenly stops, payments are suspended, the reproduction process is paralysed...and there appears a superfluity of industrial capital side by side with an almost total shortage of loan capital. On the whole then, the movement of loan capital reflected in the rate of interest is the reverse of that of industrial capital', t.m.).

In other words, a forced, abnormal upswing follows because, due to underaccumulation, the expanding volume of loan capital depresses the rate of interest and enhances the rate of profit. This is illustrated in Figure 3 below:

FIGURE THREE



The figure shows that the upswing is not a simple straight line, but takes the shape of a curve that rises steeply upwards from a low start. The gradual pace of accumulation at the start of the upswing increases progressively under the stimulus of a low rate of interest. When the reserves of loan capital have run dry, accumulation comes to a standstill, or the crisis starts.

A similar movement is discernible on the labour market. Underaccumulation—which is what we are assuming—means that unutilised labour-powers are available. By depressing wages below the value of labour-power, the latter enhance the rate of profit. This incites capital to extend the scale of production and because the first half of the expansion phase is characterised by a growing reserve army, this impulse is even more powerful. But the advance of accumulation runs into a turning point, once the number of unemployed starts to decline and wages begin to rise.

It follows that through the introduction of credit into the analysis the process of accumulation acquires a more realistic character, but no new moments are introduced in terms of our basic explanation of the industrial cycle and of the causes of crisis. If we view the expansion phase as a whole, we return to the methodological starting point of the analysis, in the sense that the converse deviations of the rate of interest or of wages cancel out one another to yield an average or normal level, which is what we started by assuming.

As against Bauer I have shown that the very mechanism of accumulation leads to an overaccumulation of capital and thus to crisis. Even a cut in wages can only proceed within definite insuperable limits. Thus accumulation necessarily comes to a standstill or the system collapses. At the moment of crisis capital, ie, the portions of surplus-value previously destined for accumulation, are excluded from the process of production. Absolute overproduction begins, as unsold stocks accumulate. Money-capital in search of investment can no longer be applied profitably in production, and turns to the stock exchange. The 'activity' of the stock exchange is inseparably bound up with the movement of interest on the money-market. 'The price of securities rises and falls in inverse proportion to the rate of interest' (Cap 3, p457). As the rate of interest jerks upwards sharply at the start of every crisis, the price of these securities registers a precipitous fall. 'When the money-market is tight, securities fall in price for two reasons: first, because the rate of interest rises, and secondly, because they are thrown on the market in large quantities to be converted into cash' (Cap 3, p457).

Now the depreciation of securities in times of crisis initiates a massive drive for speculation, which is why the end of the crisis, or the phase of depression, goes together with feverish activity on the exchange. At Z point there is

overaccumulation, a shortage of investment opportunities, in short, disposable capital. This capital turns to the exchange. Lederer's argument that 'even in times of depression savings find investment' ignores the purely illusory character of this investment. From the banker's point of view the stock exchange might be as profitable as any other type of investment. But 'investments' on the exchange create neither value nor surplus-value. Capital simply shifts according to the quotations on the exchange. After its dramatic rise during the crisis, the rate of interest falls in the depression and the early stages of a period of expansion, and so the value of securities starts appreciating. 'As soon as the storm is over, this paper again rises to its former level' (Cap 3, p457). In this way its depreciation 'in times of crisis serves as a powerful means of centralising fortunes' (id.). 'Gains and losses through fluctuations in the price of these titles of ownership, and their centralisation in the hands of the railway kings, etc., become, by their very nature, increasingly a pure gamble that appears to take the place of labour as the original means of acquiring capital wealth' (Cap 3, p467).

This completes the causal chain. Starting from the sphere of production, I have shown how the very laws of capitalist accumulation necessarily impart to accumulation a cyclical form and how this cyclical movement impinges on the sphere of circulation (money-market and stock exchange). The former is the independent variable, the latter the dependent variable. Once counteracting tendencies begin to operate and the valorisation of productive capital is again restored, a further period of accumulation sets in. The rate of profit climbs upwards. As soon as it exceeds the income from fixed-interest securities, money is again channelised from the exchange back into the sphere of production. The rate of interest starts rising, and with the gradual fall in the value of securities, these are now transferred to the 'public' which looks for a long-term investment. But this 'long-term' lasts only down to the next crisis, or the next wave of speculative buying. And through all this there is a growing centralisation of money wealth, which in turn accounts for the increasing power of finance capital.

14. The elasticity of accumulation. The problem of the sporadic and one-sided growth of individual spheres of industry. The relationship between the scale of the productive apparatus and the size of sales turnover (pp244-254)

Luxemburg criticises Marx in the following terms: 'The limits of this expansion (accumulation) are determined in advance by the amount of surplus-value which is to be capitalised in any given case' (Accumulation of Capital, p330). 'The diagram thus precludes the expansion of production by leaps and bounds. It only allows of a gradual expansion which keeps strictly in step with the formation of the surplus-value....For the same reason, the diagram presumes an accumulation which affects both departments equally and therefore all branches of capitalist production. It precludes expansion of the demand by leaps and bounds just as much as it prevents a one-sided or precocious development of individual branches of capitalist production. Thus the diagram assumes a movement of the aggregate capital which flies in the face of the actual course of capitalist development' (Accumulation of Capital, p342).

This criticism has generated a whole school, and a series of Marxist writers have repeated Luxemburg's objections, assuring us that Lenin was the first to formulate the law of the uneven development of capitalism. Varga tells us, 'In Capital Marx did not give a purely economic foundation to the law of the uneven development of capitalism. He took the totality of phenomena as his starting point....Lenin was the first to propose the law of uneven development' (Varga, 'Der Uberimperialismus und das Gesetz der ungleichmassigen Entwicklung des Kapitalismus', Die Kommunist, Internationale, Berlin, Okt.1926, p246-248). Likewise Bukharin who refers to the 'Leninist law of the unevenness of capitalist development' (Fragen des sozialistischen Aufbaues, Berlin 1926). As always, Sternberg blindly follows whatever Luxemburg has to say: 'in a rigid schema of exchange under pure capitalism...the sporadic development of individual industries would be inconceivable' (Der Imperialismus, p153).

The falsehood of this view is perfectly obvious. In fact it was Marx who derided the harmonist theory of a balanced, proportional accumulation in all spheres of production. If this sort of accumulation were possible, crises would not exist. This is why Marx says, 'There would be no over-production...if capital were proportionally distributed in all spheres of production so that the production of one article entailed the consumption of another, and thus its own consumption....Since, however, capitalist production can allow itself free rein only in certain spheres, under certain conditions, capitalist production as such would be impossible if it had to develop simultaneously and evenly in all spheres' (TSV 2, p532).

Luxemburg's criticism could only have arisen through a failure to grasp the basic aspects of Marx's methodological procedure. Marx's reproduction scheme represents the average line of accumulation, ie, the ideal normal trajectory in which accumulation occurs proportionally in both departments. In actual reality there are deviations from this average line—and Marx himself repeatedly draws attention to the elastic power of capital—but these deviations are only explicable in terms of the average line. Luxemburg's mistake is that a model that represents only the ideal trajectory in a range of possibilities is taken for an exact description of the actual trajectory of capital.

The same is true of Bauer. He imagines that the magnitudes of his reproduction scheme are the only possible form in which the process of reproduction can advance without breaks. For each year of production in Bauer's scheme it would be possible to generate a series of variants, each of which would represent a distinct configuration of the department-wise distribution of capital without altering the scale of total social production. In this sense, for the given social scale of production various equilibrium positions are conceivable. Eg, accumulation may be totally confined to Dept I, in which case for several years it would show a powerful development by leaps and bounds, while Dept II simply stagnates.

Nothing is more characteristic of Luxemburg's

scholasticism than the way she criticises Marx's reproduction schemes. Where Marx analyses a case of proportional accumulation, Luxemburg objects, '(he) precludes the expansion of production by leaps and bounds...' (p343). On the other hand, if Marx proceeds to the opposite case, she says, 'Marx enables accumulation to continue by broadening the basis of production in Dept I. Accumulation in Dept II appears only as a condition and consequence of accumulation in Dept I....Dept I retains the initiative all the time, Dept II being merely a passive follower. Thus the capitalists of Dept II are only allowed to accumulate just as much as...is needed for the accumulation of Dept I'(p122).

This only shows how completely Luxemburg has misunderstood the significance of Marx's methodological procedure. For who could ensure that accumulation takes place proportionally in the two depts? No such regulator exists under capitalism or can exist. It follows that proportional accumulation is a purely ideal case, a fiction that could actually prevail only accidentally. As a rule the actual process of accumulation is quite unequal in the various branches.

The elasticity and expansive power of capitalist production are obviously a second very important respect. It is generally believed that given the scale of the productive apparatus, the total value of the mass of commodities appearing on the market is likewise given. For example, this is what Bauer thinks. But if we vary the distribution of the total capital between the depts, it is clear that there is no such rigid relationship between the scale of the productive apparatus (or of total accumulation) and the total value of the commodities on the market. The greater the constant capital of Dept I, the smaller is the mass of commodities appearing on the market. This is not difficult to understand. The scheme only shows us 'the major exchange between the two departments' (Cap 2, p474). But the constant capital of Dept I only circulates among 'the individual capitalists of Dept I'. The larger the constant capital of Dept I the larger the share of the annual product that is excluded from exchange between the two depts. and realised exclusively in Dept I.

15.The restricted development of productive forces under capitalism (pp254-278)

If the capitalist system inevitably breaks down due to the relative decline in the mass of profit, one can understand why Marx should have ascribed such enormous importance to the tendential fall in the rate of profit, which is simply the expression of this breakdown. Moreover, it is also clear what it means to say: 'The real barrier of capitalist production is capital itself. It is this, that capital and its self-valorisation appear as the starting point and the final point, the motive and the purpose of production' (Cap 3, p245).

Marx criticises Ricardo for confusing the production of use-values with the production of values, the labour-process with the valorisation-process. 'He (Ricardo) cannot therefore admit that the bourgeois mode of production contains within itself a barrier to the unfettered development of productive forces, a barrier which comes to the surface in crises'(TSV 2, p528). From their purely technological aspect, as a labour-process for the production of use-values, or in terms of the relation M:L, nothing could impede the expansion of the forces of production. This expansion encounters a barrier in the shape of the valorisation-process, the fact that the elements of production figure as capital which must be valorised, ie, as the relation c:v from which a surplus-value, s, is required. If profit disappears, the labour-process is interrupted, constrained. The greatest possible valorisation forms the specific aim of the capitalist process of production.

The barrier to the development of the forces of production of capitalism is of a twofold nature. In the first place, the level of technological perfection attainable under capitalism is far lower than it could otherwise be from a social standpoint. Marx was the first to show that under capitalism there is far less scope for the application of improved means of production. 'The capitalist cost of the commodity is measured by the expenditure of capital, while the actual cost of the commodity is measured by the expenditure of labour' (Cap 3, p26). In other terms, from the standpoint of capital what matters is economies in the use of paid labour, and not labour as such. For example, if the production of a commodity costs society 10 hours of labour-time, it would make use of any machine that could economise on the labour-time, to whatever degree, eg. even if 9.5 hours were still needed to produce that commodity. But if a capitalist pays the worker the equivalent of say, 5 hours of labour, he will only find the use of machinery to his advantage if it costs him less than 5 hours.

Quite apart from Asia and Africa, there are large parts of eastern and south-eastern Europe today where living labour is so cheap that it does not pay the capitalist to use machinery. Thus although human labour could be replaced by machinery, ie, economised, it is in fact massively wasted. Even in the more advanced capitalist countries like Germany and the USA, advanced technology is confined to a relatively small group of capitalists, next to whom there is a large mass of technically backward enterprises which simply squanders human labour by using outdated machinery or even manual labour. Finally, even the best technology that is actually used is not identical with the best that is possible today. Of course a fantastic number of inventions and patents are bought up by the cartels and trusts, but these are not used until they are forced to use them under the pressure of competition. It would be useless to give too many examples, so I shall only choose one to show the technological backwardness of coal mining in England, which is the classical country of coal. In 1923 mechanised mines accounted for 17.2% of the total coal output of England, as against 45.4% in Belgium and 65% in the USA (Wirtschaftsdienst, 1926, II, p899). Even in Germany, as late as 1925, mechanised pits accounted for barely 48% of the tonnage, and only recently did the proportion rise to 83% in the wake of rationalisation and the pressure of English competition.

Secondly, it is well known that 'competitive capitalism' entails an enormous squandering of the productive forces with its competitive struggle for sales outlets, its over-production of commodities on one side, and unemployment on the other. According to Liefmann, 'this competitive struggle...is terribly uneconomical, and often represents a huge waste of capital' (Kartelle und Trusts, Stuttgart, 1918

p50). But are things any better in the epoch of monopoly capitalism? Liefmann argues that as far as cartels are concerned, one cannot speak of a conscious regulation of production based on foresight. On the contrary, it turns out that 'cartel formation gives a powerful impetus to expanding the scale of production of the enterprise, and especially to starting new enterprises....Once this happens, the cartels often find the greatest difficulties in disposing of the enormously expanded production'....'Controls over the volume of production and the like are measures which the cartels can enforce only subsequently. As a rule they have no means of preventing an excessive expansion of enterprises' (p69-70). Thus Liefmann refers to the 'huge over-capitalisation' that characterises the cartels and shows how 'the already existing level of overcapitalisation in the potash industry was further promoted, to a terrifying degree, by the law of 1910'....'Around a dozen works with perhaps an outlay of 100 million marks could have covered the needs of this industry. Instead of which almost 1.5 billion marks were invested, which is an astounding degree of over-capitalisation...' (p74).

Actually, after the War, underutilisation of capacity became a general phenomenon in the leading capitalist countries. This only means that profitability considerations put a brake on the development of the productive forces. This is the famous 'regulation' of production by the cartels and trusts—not a planned calculation and distribution of production according to needs, but restrictions on the utilisation of productive capacity in order to push up the level of prices and of profits.

'Capitalist production finds in the development of its forces of production a barrier which has nothing to do with the production of wealth as such; and this peculiar barrier testifies to the limited and to the merely historical, transitory character of the capitalist mode of production; testifies that for the production of wealth it is not an absolute mode of production, rather that at a certain stage it conflicts with the further development of wealth' (Cap 3, p237).

After 1815 English capitalism could revolutionise her industry through technological changes in iron production starting with the puddling process. But as the accumulation of capital advanced, the rate of technological progress slowed down in England. It was in 1856 that the Englishman Bessemer reported the discovery of a new process that was destined to revolutionise the metal-working industries and to replace the dominance of iron by steel. But for 20 years England ignored the discovery of the Bessemer process and stuck to the puddling process until the competition of Germany, France and Belgium forced her to take it over and refine it. This game was repeated once more, when in 1879 Thomas discovered the basic process named after him. England received the finding with pure indifference and let the foreigners buy it, until in three years it revolutionised all the plants on the Continent. The English monopoly was a thing of the past, as the leadership in iron and steel production gradually passed into other hands. At the turn of the 19th century one finds the same picture in the field of electrical technology. English capitalism simply ignored it at a time when there was practically not a city in Germany which did not have its 'electricity society'. By 1906 Schulze-Gaevernitz (Britischer Imperialismus und englischer Freihandel zu Beginn des zwangzigsten Jahrh. Leipzig 1906) could refer to the 'technological conservatism' of England and list a whole series of industries like iron and steel, machine building, shipbuilding, chemicals, etc, in which America and Germany had either displaced or were threatening English dominance. However, Schulze-Gaevernitz does not accept economic causes as the explanation of English 'conservatism' and prefers to trace this to 'processes of spiritual decay'. But in that case why did the progressive, in fact revolutionary, character of English economic development change so completely in a few decades? I have shown that under capitalism, at a definite level of the accumulation of capital, technological development has to slow down, because the valorisation of capital can no longer sustain it.

This way of posing the problem shows that it is misleading to speak about a stagnation of productive forces under 'capitalism' in general. This is precisely why Kautsky can deny the possibility of an economic breakdown of capitalism, because in his understanding 'capitalism' has proved its capacity to develop the forces of production. But the problem is not one of some abstract 'capitalism' outside space and time, but of the actual development of particular historical capitalist countries, each of which lies at a specific stage of capital accumulation. It is a fact that the oldest capitalist country of Europe which for more than a century played the leading role in industry and which had the greatest accumulation of capital prior to the War 'has lost its dominance to other nations in several of the most important industries' (Schulze-Gaevernitz, p334). The technological stagnation of England and her loss of industrial leadership were rooted in the faltering of her rate of accumulation due to the already huge accumulation of capital. But once the accumulation of capital increases in countries like Germany and America, there too the process of valorisation will necessarily run into limits that will slow down their technological advance. The law of accumulation expounded above explains the phenomenon already noted by Adam Smith that in the younger countries at an early stage of capitalist development the tempo of accumulation is more rapid than in the 'wealthier', capitalistically advanced countries where the 'enervation' of capital (Schulze-Gaevernitz, p333) in turn produces a 'stoppage of political and social reforms' (JA Hobson, Imperialism, London, 1905, p42).

In this sense Lenin was right in saying that highly developed capitalism is characterised by an inherent 'tendency towards stagnation' (Imperialismus, p89). But Lenin linked this to the fact of monopolism. That there is such a connection is indisputable, but a mere statement is not enough. After all, one is not dealing simply with phenomena of stagnation. The very same English capitalism that has reached a state of enervation, economically, shows an extremely aggressive character in other respects. It is this aggressive character or unusual energy that gives to it the peculiar stamp of so-called 'imperialism'. Imperialism is characterised both by stagnation and by aggressiveness, and these have to be explained simultaneously. If monopolism causes 'stagnation', then how would one explain the

aggressive character of imperialism? In fact, both these phenomena are ultimately rooted in the tendency towards breakdown, or in imperfect valorisation due to over-accumulation. Monopolism is only a means of enhancing profitability by raising prices, and in this sense it is only a surface appearance whose inner structure is insufficient valorisation linked to capital accumulation. The aggressive character of imperialism likewise necessarily flows from a crisis of valorisation. Imperialism is a striving to restore the valorisation of capital at any cost, to weaken or eliminate the breakdown tendency. This explains its aggressive policies at home—an intensified attack on the working class to enhance valorisation through wage cuts—and abroad—a drive to transform foreign nations into tributaries. This is the hidden basis of the bourgeois rentier state, of the parasitic character of capitalism at an advanced stage of accumulation: because the valorisation of capital fails in countries at a given, higher stage of accumulation, the tribute that flows in from abroad assumes ever-increasing importance. Parasitism becomes a method of prolonging the life of capitalism.

The opposition between capitalism and its forces of production is an opposition between value and use-value, between the tendency to an unlimited production of use-values and a production of values constrained by the limits to valorisation. For, as Marx writes, 'indirectly the development of the productivity of labour enlarges the existing capital-value by enlarging the mass and variety of use-values in which the same exchange-value is represented....With the same capital and the same labour more products are created which can be transformed into capital, regardless of their exchange-value...'.

'These two moments comprised in the process of accumulation should not be regarded as simply coexisting peacefully...they contain a contradiction which reveals itself in contradictory tendencies and appearances...' (Cap 3, p243-244). 'Periodically this conflict of contradictory forces lets itself go in crises....To put it in a general way, the contradiction lies in the fact that capitalism entails a tendency towards absolute development of the productive forces, regardless of the value and surplus-value contained in them, ...while, on the other hand, it has for its specific aim the preservation of the existing capital-value and its greatest possible valorisation, ie, an increasingly rapid expansion of its value...' (Cap 3, p244).

Capital accomplishes this twofold objective through technological advance, and thus by the introduction of a progressively higher organic composition of capital, which, however, entails the consequences we know already: 'The methods by which it accomplishes this include—a declining rate of profit, devaluation of the existing capital and development of the productivity of labour at the cost of the already created forces of production....The periodic devaluation of the existing capital...disrupts the given relations within which the process of circulation and reproduction of capital occurs, and is therefore accompanied by sudden stoppages and crises in the production process...' (Cap 3, p244). Surveying the process as a whole, we get the following picture. The accumulation process is a movement that proceeds through the opposition between use-value and value. From the use-value aspect the forces of production are developed absolutely ruthlessly. This accumulation of use-values (which is simultaneously an accumulation of values) leads to a fall in the rate of profit, which in turn means that valorisation of the advanced capital is no longer possible at the given rate. This means a crisis, a devaluation of the existing capital. Yet this only re-animates the accumulation of capital from its value-side. 'In terms of value the accumulation of capital is slowed down by the falling rate of profit, only to accelerate the accumulation of use-values even further, while this again speeds up the accumulation of value' (Cap 3, p245). The entire process moves by fits and starts, through crises and their attendant devaluation of capital, so that the forces of production find their limit in the possibilities of valorisation. 'The limits that describe the movement of the preservation and valorisation of capital-value, founded on the expropriation and pauperisation of the great mass of producers—these limits repeatedly conflict with the methods of production...that drive towards an unlimited expansion of production, towards production as an end in itself, towards an unconditional development of the productivity of social labour. The means — unconditional development of the productive forces of society—repeatedly collide with the limited end, valorisation of the existing capital. If therefore the capitalist mode of production is an historical means of developing the material forces of production and creating a world market to correspond to them, it is at the same time a persisting contradiction between this its historical mission and the social relations of production corresponding to it' (Cap 3, p245 t.m.).

'Here the capitalist mode of production falls into...a contradiction. Its historical mission is an unfettered expansion of the productivity of human labour pushed through in geometrical progression. But it betrays its mission once it turns into a fetter on the expansion of productivity, as here. Thereby it only shows that it is becoming senile and has more and more outlived itself' (Cap 3, p257 t.m.).

The ideas developed here were already proposed in Vol.1 in a more general form. But in these passages of Vol.3 Marx shows concretely, through an analysis of the capitalist process of accumulation, that even capitalism, which was historically necessary for the expansion of productivity, becomes in the course of time a fetter on this expansion. 'The monopoly of capital becomes a fetter upon the mode of production which has flourished alongside and under it....Capitalist production begets, with the inexorability of a natural process, its own negation' (Cap 1, p929).

(Boudin tries desperately to reconcile this conception with his own theory of the need for non-capitalist markets. The impossibility of disposing of the entire surplus product drives capitalism to waste. 'One can hardly doubt that a system that can only survive by wasting the goods produced by it is a system that has become a hindrance to production, or a fetter on it. Such a system cannot last for very long' (p275). But instead of showing that economically it is impossible for capitalism to survive indefinitely, Boudin delivers moralistic judgements about capitalism, inspired by a shallow rationalism. Economically he shows the very opposite of what he intended to show. On the basis of his theory of market outlets, wastage is not only not any sort of economic

limit on capitalism, but it is 'absolutely necessary to the survival of the system' (p273). 'This is the source of our lasting prosperity' (p274). Apart from this contradiction, Boudin argues that capital's inability to dispose of the entire surplus product has been an innate feature of the system from its very birth. In which case it is impossible to understand how capitalism could have lasted down to today. Neither Boudin nor Luxemburg are able to explain why capitalism could expand productivity and becomes a hindrance to it only later.)

16. The Marxian theory of imperfect valorisation due to overaccumulation and Luxemburg's theory of the impossibility of 'realising' surplus-value under capitalism (pp278-86)

Let us suppose with Luxemburg that capitalism is not the exclusively prevalent mode of production but has to rely on a non-capitalist sector. In that case, on the periphery of Bauer's scheme there are non-capitalist markets that buy up the surplus-value produced, capitalistically, within the scheme, but otherwise unsaleable. Let us suppose that only after this transaction is the surplus-value convertible into a usable natural form and earmarked for accumulation in the capitalist country. In short, we assume that Bauer's scheme now represents an accumulation whose elements have returned from the non-capitalist countries after being 'realised' there. But what follows? Even if the surplus-value were 'realised' in the non-capitalist countries, the breakdown of capitalism would still be inevitable due to the causes mentioned.

This only shows that Luxemburg's entire hypothesis is totally irrelevant to the problem concerned and therefore quite superfluous. Whether surplus-value is realised internally or in a non-capitalist sector has no bearing either on the life-span of capitalism or on the timing and inevitability of its final collapse. In both cases the breakdown would be inevitable and its timing would be the same! For this flows from the fact of capitalist accumulation on the basis of a progressively rising organic composition of capital, from the fact that c grows faster than v—and here the question of where the surplus-value is 'realised' is quite irrelevant. All that matters is the magnitude of the surplus-value.

The first two decades of discussions around Marx were dominated by the idea of the breakdown of capitalism. Then, around the turn of the century, Tugan came up with his theory of a possible unlimited development of capitalism. He was soon followed by Hilferding and Bauer, and finally there was Kautsky. So it was entirely natural that Luxemburg should defend the fundamental conception of the inevitable breakdown of capitalism against the distortions of Marx's epigones. But instead of testing Marx's reproduction scheme within the framework of his total system and especially of the theory of accumulation, instead of asking what role it plays methodologically in the structure of his theory, finally instead of analysing the schema of accumulation down to its ultimate conclusion, Luxemburg was unconsciously influenced by them, ie, she came around to believing that Marx's schemes really do allow for an unlimited accumulation (cf. Accumulation of Capital, p330: 'Since capitalist production buys up its entire surplus product, there is no limit to the accumulation of capital'), 'and so on ad infinitum. We are running in circles quite in accordance with Tugan's theory. Considered in isolation, Marx's diagram does indeed permit of such an interpretation since he himself explicitly states time and again that he aims at presenting the process of accumulation of the aggregate capital in a society consisting solely of capitalists and workers' (Accumulation of Capital, p330 f.). Luxemburg was of the opinion that Marx 'does not go any further into the question of accumulation than to devise a few models and to suggest an analysis. This is where my critique begins' (Anti-critique, p48).

One could scarcely imagine a worse distortion of Marx's methodological principles. Because Luxemburg took the schemes as implying the possibility of unfettered accumulation, she was forced to abandon them in order to salvage the notion of breakdown flowing from Volume One. For in her own words: 'assuming the accumulation of capital to be without limits, one has obviously proved the unlimited capacity of capitalism to survive!...If the capitalist mode of production can ensure boundless expansion of the productive forces, of economic progress, it is invincible indeed' (Accumulation of Capital, p325). Thus with her ad hoc model of the need for non-capitalist markets Luxemburg thought she was killing two birds with one stone—refuting the equilibrium dreams of the neo-harmonists by showing that there is an inexorable economic limit to capitalism, and simultaneously explaining imperialism.

Capitalism is dominated by a blind, unlimited thirst for surplus-value. According to the interpretation that Luxemburg gives, it would appear as if this system, driven by its craving for surplus-value, actually suffers from an excess of surplus-value, that it contains an unsaleable residue of surplus-value and in this sense possesses too much surplus-value! Such a theory is quite illogical and self-contradictory in terms of trying to understand the most important and peculiar function of capital, the function of valorisation!

The whole thing is quite different in the interpretation I have given. The capitalist mechanism falls sick not because it contains too much surplus-value, but because it contains too little. The valorisation of capital is its basic function, and the system dies because this function cannot be fulfilled. In explaining how this happens the logical unity and consistency of Marx's system finds its most powerful expression. Unless we are going to overthrow the logical unity of the system, we have to be able to demonstrate the necessary breakdown of capitalism in terms of the theory itself, ie, on the basis of the law of value without recourse to unnecessary and complicating auxiliary hypotheses. Simplicity is the hallmark of truth. The Marxian theory of crises can account for recessions and their necessary periodic recurrence without having to invoke special causes, and therefore purely in terms of the process of accumulation. Basically this is what shows the real character of the logical structure of Marx's theory of breakdown and its difference from all other theories of the business cycle. The latter are theories of equilibrium, they bear a static character. In

principle they cannot deduce the general crisis—for them the discrepancy between demand and supply—from the system itself, because in equilibrium theory prices represent an automatic mechanism for adjusting one to the other. Disruptions of equilibrium can only be explained in terms of 'exogenous' factors.

Now there is no such defect in Marx's theory of crises. True, Marx's proof-procedure starts from the assumption of equilibrium. But in this procedure equilibrium forms only a tentative methodological fiction with whose help it can be shown that in the long run equilibrium is impossible under capitalism, that by its very nature capitalism is not static, but dynamic. Thus all the requirements placed on any theory with respect to its logical unity are satisfied if purely deductively, proceeding from the assumptions made, ie, from the inner course of capitalist accumulation itself, and 'in keeping with the logic of the total system' (Lowe) we can show the possibility and necessity of economic movements that lead to the periodic disruption of the system's equilibrium and to its final destruction.

This also enables us to clarify the basic difference between the conceptions of classical economy and that of Marx. Adam Smith had already discerned a threat to capitalism in the falling rate of profit, because profit is the motorforce of production. But Smith accounts for declining profitability in terms of growing competition of capitals. Ricardo tries to ground the law of the falling rate of profit in terms of naural factors related to the declining productivity of the soil. By contrast, Marx deduces the breakdown of the capitalist system quite independently of competition. His starting point is a state of equilibrium. Because valorisation sags at a specific level of accumulation, the struggle for markets and for spheres of investment must begin. Competition is a consequence of imperfect valorisation, not its cause.

As against Ricardo, Marx roots the breakdown in causes related specifically to the social form of production, viz. to the fact that the capitalist mechanism is regulated by profit, whereas at a certain level of capitalist accumulation there is not enough profit to ensure valorisation of the accumulated capital.

The law of breakdown is the fundamental law that governs and supports the entire structure of Marx's thought.

CHAPTER THREE

Modifying countertendencies

(Verifying the abstract analysis through the concrete appearances of capitalist reality) (pp287-301)

An abstract deductively elaborated theory never coincides directly with actual appearances. In this sense, the theory of breakdown and accumulation expanded above does not directly correspond with appearances of bourgeois society in its day to day life. The conditions of 'pure' capitalism which we have analysed so far, and those of 'actual' capitalism ('empirischen' Kapitalismus) which we have to analyse now, are by no means identical, because in a theoretical deduction one works with simplifications, ie, many real factors pertaining to the world of appearances are consciously excluded from the analysis. (So far we have assumed 1. that the capitalist system exists in isolation, ie, there is no foreign trade, 2. that there are only two classes, capitalists and workers, hence no middle class, 3. that there are no landowners, hence no ground-rent, 4. that commodities exchange without the mediation of merchants, 5. that the rate of surplus-value is constant and corresponds to the magnitude of the wage, 6. that there are only two spheres of production, 7. that the rate of growth of population is a constant magnitude, 8. that the value of labour-power is constant, 9. that in all branches of production capital turns over once a year, etc.) Any theory has to work with such provisional assumptions which are a potential source of mistakes. But these assumptions have allowed us to determine the direction in which the accumulation of capital works, even if the results of this analysis have only a provisional character.

Marx was perfectly conscious of the abstract, provisional nature of his law of accumulation and breakdown. After presenting the 'absolute general law of capitalist accumulation', he immediately says, 'Like all other laws, it is modified in its working by many circumstances, the analysis of which does not concern us here' (Cap 1, p798). Elsewhere, in describing the process of accumulation, he writes, 'This process would soon bring about the breakdown of capitalist production were it not for counteracting tendencies' (Cap 3, p241). In fact, Marx gave an analysis of these 'modifying circumstances' or 'counteracting tendencies' in various places in Vol.3 as well as in Theories of Surplus-Value.

It follows that once one has shown the tendency of accumulation in its pure form, one has to examine the concrete circumstances under which the accumulation of capital actually proceeds, in order to see how far the tendency of the pure law is modified in its realisation. Therefore, one is asking whether, and, if so, in what direction, the tendencies of development of the 'pure' system are changed, once this system re-incorporates, by degrees, foreign trade, landowners who live off ground-rent, merchants, and the middle classes, once the rate of surplus-value or the level of wages, etc are allowed to vary. Only these corrections enable the abstract analysis to come closer to the world of real apppearances and enable one to verify the law of breakdown, ie, to see to what extent the results of the abstract theoretical analysis agree with the appearances of actual reality.

Considering the gigantic increases in productivity and the enormous accumulation of capital of the last several decades, the question arises—why has capitalism not already broken down? This is the problem that interests Marx. Whatever Marx has to say about the falling rate of profit applies word for word to the historical tendency of capitalist accumulation, because these two phenomena stand in the closest relationship to one another: in other words, one has to postulate counteracting influences of the kind that have intersected and slowed down the breakdown tendency. 'In general it has been shown that the same tendencies that cause a fall in the general rate of profit also produce counter-effects (Gegenwirkungen) that stem this fall, retard it and partly paralyse it. They do not abolish the law, but weaken its impact. Otherwise it would not be the fall in the general rate of profit that would baffle us, but the relative slowness of this fall. Thus the law operates only as a tendency, whose impact is conspicuous only under certain conditions and after long periods' (Cap 3, p233 t.m.).

Once these 'counteracting influences' begin to operate, the valorisation of capital is re-established and the accumulation of capital can re-start on an expanded basis. In this case, the breakdown tendency is interrupted and manifests itself in the form of a temporary crisis. The crisis is thus only a tendency towards breakdown which has been interrupted and restrained from realising itself completely.

Return for a moment to the diagrammatic illustration of the cyclical process of accumulation in Figure Two.

Due to the very nature of the accumulation process there is a basic difference between the two phases of the cycle with respect to their duration and their character. We have seen that only the phase of accumulation is defined by a specific regularity, and therefore only the length of the expansion phase $0\text{-}z^1$, $0\text{-}z^2$, etc, and the timing of the downturn into a crisis are open to exact calculation. No such calculation is possible with respect to the duration of the crisis or periods of decline $z^1\text{-}o^1$, $z^2\text{-}o^2$, etc. At z^1, z^2, and so on valorisation collapses. The ensuing overproduction of commodities is only a consequence of imperfect valorisation due to overaccumulation. The crisis is not caused by disproportionality between expansion of production and lack of purchasing power, ie, by a shortage of consumers. The crisis intervenes because no use is made of the purchasing power that exists, as it does not pay to expand production any further since the scale of production makes no difference to the amount of surplus-value now obtainable. So on the one hand purchasing power remains unutilised, on the other hand, the elements of production lie unsold. At first only further expansion of production becomes unprofitable. Reproduction on the existing scale is not affected. But with each cycle of production this changes. Even with reproduction carried on on the existing scale, every year a surplus-value is produced from which one portion, earmarked for accumulation, is not actually sold. As inventories accumulate, the capitalist is forced to sell at any price to obtain the resources to keep the enterprise going on its existing scale. He is compelled to reduce prices and cut back on his scale of production. 'During a period of slack,

production sinks below the level which it had attained in the previous cycle and for which the technical basis has now been laid' (Cap 3, pp477-78). The scale of operations is reduced or they shut down completely. Many firms declare bankruptcy and are devalued. Huge amounts of capital are written off as losses. Unemployment grows.

Now this sickness can lead in one of two directions. Either there is nothing to stop the breakdown tendency from working itself out without restraint and the economy simply ceases to function; or specific measures are undertaken to counteract sickness, the sickness is stopped and turns into a healing process. The question arises: how is a crisis surmounted? How is a new period of upswing initiated? The mere statement that crises are a form of sickness is quite useless if one has no conception of what this sickness is caused by. The specific means by which a crisis is surmounted are obviously closely related to one's diagnosis of the sickness. The remedies prescribed would vary according to whether the underlying cause of crises is seen as the 'underconsumption' of the masses, as 'disproportions' between branches of production or as a shortage of capital.

Of course, there are cases where the boom has been precipitated by a massive flow of funds from abroad, eg, the huge imports of American capital into Germany over 1926-27, but in numerous instances—and this is the general rule—crises have been surmounted without any flow of foreign funds. And just as crises have actually been surmounted while many of the so-called 'causes' of crisis, eg, underconsumption of the masses, are still present, so one finds that all the factors generally cited by way of explaining the boom turn out to be quite useless in explaining how the depression itself is overcome. The remedies proposed are not logically connected with one's diagnosis of industrial sickness. One ends up with a logical dualism in attempting to explain a unified complex of inter-related phenomena.

In contrast to these various theories, our theory shows that the means actually enforced to surmount a crisis correspond perfectly to the actual causes of industrial sickness as analysed by us. In this sense the theory provides a consistent explanation of the two phases of the industrial cycle, both of the turn from expansion to crisis and of the process through which the crisis is later surmounted.

From the argument that crises are caused by an imperfect valorisation of capital, it should follow that they can only be overcome if the valorisation of capital is restored. But this cannot come about by itself, simply in the course of time, it presupposes a series of organisational measures. Crises are only surmounted through such a structural reorganisation of the economy.

The capitalist mechanism is not something left to itself. It contains within itself living social forces: on one side, the working class, on the other, the class of industrialists. The latter is directly interested in preserving the existing economic order and tries, in every conceivable way, to find means of 'boosting' the economy, ie, of bringing it back into motion, which only means, restoring profitability.

The actual circumstances through which the crisis can be overcome vary enormously, but ultimately, in terms of the impact they have, they are all reducible to the fact that either the value of the constant capital is reduced or the surplus-value is increased, so that in either case the valorisation of capital is enhanced, or the rate of profit is increased. Such circumstances lie both within production and in the sphere of circulation, and pertain both to the inner mechanism of capital as well as to its external relations to the world market. The capitalist's persisting efforts to restore profitability might take the form of reorganising the mechanism of capital internally (eg, by cutting costs of production, or effecting economies in the use of energy, raw materials and labour-power) or of recasting trade relations on the world market (international cartels, cheaper sources of raw material supply, etc). And this means groping attempts at a complete 'rationalisation' of all spheres of economic life. Many of these measures fail, while the programme of reorganisation is often completely beyond the reach of the smaller enterprises, which are thus economically wiped out. In the end, however, capital finds suitable means of raising profitability, and a reorganisation is gradually enforced. By its very nature, the specific duration of this reorganisation and economic restructuring process is something purely contingent and therefore impossible to calculate.

In the pages that follow I shall not go into a detailed description of all the several 'countertendencies' that hinder the complete working out of the breakdown, rather I shall confine myself to presenting only the most important of them and to showing how the operation of these more basic countertendencies transforms the breakdown into a temporary crisis so that the movement of the accumulation process is not something continuous but takes the form of periodic cycles, of constant ups and downs. But we shall also see how, as these countertendencies are gradually emasculated, the antagonisms of world capitalism become progressively sharper and the tendency towards breakdown increasingly approaches its final form of an absolute collapse.

Part One

Restoring profitability through structural changes internal to the mechanism of capital

1. Increases in the rate of profit through the expansion of productivity and its impact in reducing the costs of constant capital (pp301-315)

In Chapter Two I showed which methodological considerations prompted Marx to analyse the problem of accumulation and crisis on the assumption of constant prices. Only this assumption made it possible to prove that the cyclical movements of expansion and decline are independent of fluctuations in the level of commodity prices and wages, and that they are, on the contrary, functions of the accumulation of capital. Here I want to show that the opposite assumption of the bourgeois economists, who take the price fluctuations as their starting-point, simply confuses the issue.

We have already seen that in analysing the business cycle Lederer starts from rising prices as the decisive element. 'If we look at periods of boom, then we find that in such periods all prices rise' (Lederer, Konjunktur u. Krisen, p387). Expansions in the scale of production which characterise periods of boom are only a result of rising prices according to Lederer. But how is a general increase in prices possible? Lederer argues that if the value of money is held constant, a general increase in prices can only flow from changes on the commodity or supply side. 'However', Lederer continues, 'such changes in the volume of production are only consequent on changes in the level of prices' (p388). So Lederer sees a vicious circle here, a circle which is actually broken only because new purchasing power is injected into the process of circulation by the expansion of credit. 'Only credit creates the boom or makes it possible' (p391) through its impact in raising the level of demand and therefore also of prices. 'Booms are not financed by past savings, but by new savings, or additional credit' (p377). 'Only through additional credit and thus newly created purchasing power is any significant expansion of the productive process possible' (p387).

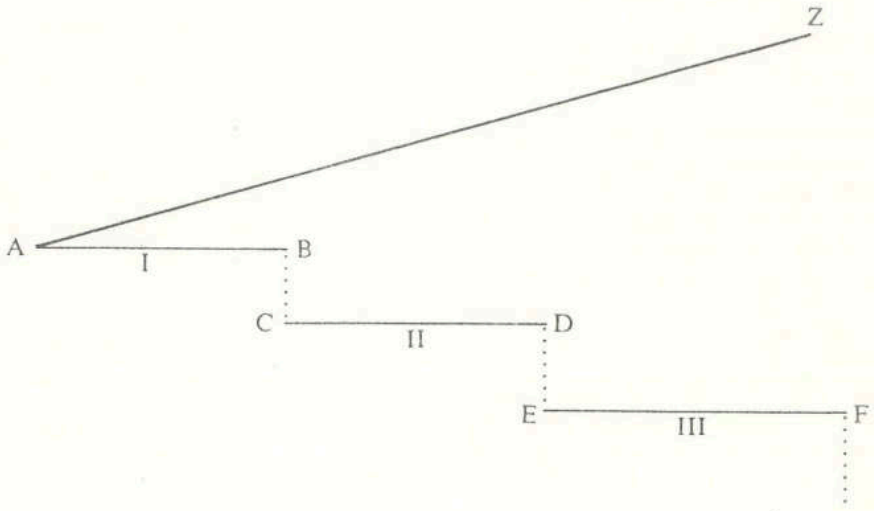
The argument is quite unconvincing. Quite apart from its methodologically defective starting-point, it is both logically contradictory and contradicts the actual course of the boom. Economically speaking, apart from the case where the value of money falls, a 'general increase of prices' is something quite meaningless. That is, purely numerical increases would be involved. In this sense the whole basis of Lederer's deductions simply falls. Secondly, it is a fact that the most important renovations and expansions in the productive apparatus occur in periods of depression ('A crisis is always the starting-point of a large volume of new investment (einer grossen Neuanlage). It is also, therefore, if we consider the society as a whole, more or less a new material basis (eine neue materielle Grundlage) for the next turnover cycle', Cap 2, p264), when commodity prices are low. Only the demand generated by these programmes of expansion raises the level of prices, assuming that this demand exceeds the supply. At any rate, in principle rising prices are by no means necessary in surmounting crises. They are only a consequence, and not a cause, of booms. Extensions in the scale of production can occur, and actually do occur, without rising prices, and even if the level of prices is low. This is basic to any understanding of the problem.

According to Lederer rising prices and the programmes of expansion supposedly linked to them are only a result of credit expansion. In which case it follows that when credit is actually released prices are still low. So Lederer has to be able to tell us—who exactly will take the credit to extend the scale of production when prices are low? Here Lederer is simply running in circles.

The fact remains that programmes of expansion are undertaken in periods of depression when prices are low. Any deeper analysis has to start here, if we are going to understand the process in its 'pure form'. At a certain level of the accumulation of capital there is an overproduction of capital, or a shortage of surplus-value. Overproduction does not mean that there is not enough purchasing power to buy up commodities, but that it does not pay to buy commodities for programmes of expansion, because it is no longer profitable to extend the scale of production. 'In times of crisis...the rate of profit, and with it the demand for industrial capital has to all intents and purposes disappeared' (Cap 3, p500). Due to lack of profitability, accumulation, or extension in the scale of production, is interrupted, and production is carried on at the existing scale. Prices are bound to fall. A fall in prices is only a consequence of stagnation, not its cause. And because commodities are unsaleable, or there is a general overproduction, as soon as the crisis starts competition sets in. Each individual capital initially tries to secure for itself, at the cost of other capitals, that which is unattainable by the totality of capitals. From a scientific point of view, this is what proves that competition is something necessary under capitalism. For we started by assuming the most favourable condition for capital, a state of equilibrium in which supply and demand coincide. In spite of that, it turns out that at a certain level of the accumulation of capital competition must necessarily arise (die Konkurrenz notwendig entstehen muss). Whereas earlier we looked at the capitalist class as a single entity, now, in examining the crisis, we are forced to take account of the mutual competition of the individual capitalists.

Let us go back to the question posed earlier. How is the crisis surmounted? How does a renewed expansion of production (accumulation) come about? The simple answer is: through the reorganisation and rationalisation of production by which profitability is again restored even at the depressed level of prices prevailing. The following diagram is a schematic illustration of this entire movement:

FIGURE FOUR



(I, II, III, etc, represent price-levels)

The crisis started at the prices prevailing at level I (these prices were held constant). Consequently there was a fall in prices B-C, until they stabilised at the new and lower level II (line C-D). Taking all the capitals in their totality, further accumulation was quite pointless on the basis prevailing hitherto. Suppose there are four enterprises in a particular branch of industry:

50c : 50v
40c : 60v
35c : 65v
25c : 75v

150c : 250v

Let 150c represent the absolute limit of accumulation.

Due to crisis these companies are forced to reorganise, ie, to 'rationalise' their plants. Eg, the two largest companies decide to merge, so that the organic composition expands, say in the ratio of 7c:3v. In the new enterprise with 90c only 38v is thus used. Labour-power to the value of 72v is set free, or rationalisation leads to the formation of a reserve army. Once the merger is complete we therefore have only three enterprises as a result of the concentration process:

90c : 38v
35c : 65v
25c : 75v

150c : 178v

and next to them a reserve army of 72v. But for the new enterprise to result from merger, the higher organic composition entails a restoration of its profitability even at the lower price level II. Firstly, because the higher organic composition of capital means an increase in the productivity of labour and thus a reduction of unit costs. Secondly, because an increase in the productivity of labour also means a higher rate of surplus-value. This increase in the rate of surplus-value implies that as the other companies also decide to rationalise, the total surplus-value obtainable expands proportionately, quite irrespective of the fact that every year a new generation of workers is appearing on the labour market, so that the mass of disposable surplus-value is growing absolutely in any case. It follows that the maximal limits hitherto imposed on the accumulation of capital are pushed further back beyond the level 150c.

This analysis leads to the following result. During the crisis there was an 'overproduction'. How was the up-turn produced? Was the scale of operations actually reduced? On the contrary, it was expanded even further! And yet the crisis was surmounted. (Nothing is more characteristic of the quid pro quo in Marxist writings than the attempt to present Marx's theory of crisis as an underconsumption theory. Extensions in the scale of production, the most important means by which crises are overcome, are taken as the basic cause of the crises. See Nachimson, Die Weltwirtschaft vor und nach dem Kriege, Berlin 1922, Bd.1 p28. Crises arise supposedly from the underconsumption of the masses and from disproportions in the individual spheres of production. But then there is always the problem of accounting for the periodicity of the crises. This is done by dragging in a third factor, fixed capital. Result: industrial sickness is something periodic, but the causes of this sickness are not the causes of its periodic appearance!)

That crises are surmounted 'although' the scale of operations is extended even further is the best proof that

crises do not stem from a lack of purchasing power, a shortage of consumers, or from disproportions in the individual spheres of industry. Because the crisis is rooted in a lack of valorisation, it necessarily disappears once profitability is improved, even if prices remain low.

The empirical evidence for this view confirms it word for word. Take the example of German shipping, where, due to massive overproduction of tonnage and the ruinously low freight-charges that followed, the biggest shipping companies incurred consistently heavy losses throughout the depression years 1892-94. How was this severe crisis overcome? R Schachner tells us that the perennial depression in freight-charges stimulated important changes in the technological structure of shipping. In 1894 and 1895, 'encouraged by low construction costs, all the big companies went in for the large-scale steamer' ('Die Storungen im deutschen Wirtschaftsleben', Schriften d.Ver. f. Sozialpol. Bd.108, Leipzig 1903, p5). Due to this 'revolution in shipping enterprise' world shipping statistics show an increasing average size of ships—in 1893, 1418 gross register tons, in 1894, 1457 g.r.t., in 1895, 1499 g.r.t., in 1896, 1532 g.r.t. The smaller companies could no longer compete on the freight market with these new giant steamers and were forced to sell off their steamers at enormous losses. The position of the big shipping companies was entirely different, despite their intense competition with England. In 1895 the Hamburg-America line declared dividends and stated in its annual report: 'Despite miserable freight-charges, our new steamers were able to operate at a profit due to their large tonnage and their savings in (fuel) costs' (p7). So by way of overcoming the crisis of overproduction of tonnage, the tonnage was expanded even further, despite the low prices! ('The result, then, is the following: in spite of the "super-production" of tonnage new ships have been built. The apparatus of production, instead of becoming restricted, has been enlarged. And the crisis, nevertheless, has passed!...The crisis then is not a restriction of the real apparatus of production, but a breakdown of the accepted system of prices and values, and its reorganisation on a new level', H Grossmann, 'The theory of economic crises' (English), Bulletin internationale de l'Academie polonaise des sciences et des lettres...1919/20, p289.)

The same process was repeated yet again when after the boom years of 1897-1900, a new crisis started in 1901. Again there was an attempt to relieve the impact of the depression through a general drive to cut costs in shipping by expanding the individual scale of operations still further (Schachner, p96). And this happened a third time after the War. In spite of the huge losses directly due to the War, world shipping was afflicted by an oversupply of loading capacity. By 1926 world tonnage increased by 31.7% in the space of some 12 years.

On the other hand, world trade had still to recover its pre-war levels, so it is not surprising that there was a state of severe depression in the world freight market. Rates declined steeply to rockbottom levels of profitability. And yet how was this crisis overcome? Despite the massive oversupply of tonnage, international shipping converted to the latest type of vessels with a still larger scale of operations (Sven Helander, 'Der Tonnageuberfluss in der Welt-wirtschaft', Weltwirt. Archiv. Bd. 24, 1926, p79ff.). As against an average capacity of 1857 g.r.t. in 1914, the figure was 2136 g.r.t. in 1925, and loading capacities increased even more sharply. Today a modern 8000 ton steamer with a 10 knot speed consumes only 30 tons of coal per day, whereas prior to the War it consumed 35-36 tons per day. Yet the most significant technological change, decisive to the whole question of profitability, was the introduction of a new types of propulsion. In 1914 mechanised vessels had formed only 3.1% of the total world tonnage, whereas by Dec.1924 their share was 37.6% (Dehning, 'Die Entwicklung des Motorschiffsbaues', Weltwirt, Archiv. Bd.22, 1925 p100). As against the old steamers run on coal, the new mechanised ships were characterised by much higher loading capacities relative to size, by lower fuel costs and by savings in manpower—eg, on English vessels, despite a shorter working day, average crew size declined from 2.58 per g.r.t. in 1920, to 2.41 per g.r.t. in 1923.

In short, despite the trough in freight-rates, the technological rationalisation of shipping could restore profitability levels and enable the industry to overcome its crisis.

In fact, because it is so recent, one hardly needs to substantiate the fact that the last great depression following the German stabilisation of 1924-26 was overcome basically by the same methods of rationalisation—by a process of fusion and concentration, increases in the productivity of labour through technological renovations, etc., ie, by a further expansion of productive capacity. Profitability was re-established and the crisis surmounted precisely through increases in productivity and extensions in the scale of production.

If we survey the process in its 'pure' form over a longer period of several cycles and in abstraction from various countertendencies, it follows that prices show a declining tendency from one crisis to the next (in terms of Figure 4, from level I to level II, and so on), whereas the scale of production undergoes continuous expansion. In actual reality the process does not take this pure form, because here, due to the intervention of various subsidiary factors, prices may rise for a longer or shorter period (artificial increases due to the cartels, higher prices of agricultural produce, etc).

However, in a given branch of production the crisis is never surmounted purely through the technological improvements in this branch. The capitalists also gain from the technological and organisational changes accomplished in other spheres of industry, either because these changes reduce their investment costs by cheapening basic elements of the reproductive process, or because improvements in transport or monetary circulation shorten the turnover time of capital and thus increase the rate of surplus-value. The more a movement of rationalisation spreads and penetrates into a whole series of new industries, the more the boom gains in intensity, because improvements in one sphere of industry mean an expanding mass of surplus-value in others.

2. Reducing the costs of variable capital through increases in productivity (pp315-317)

(a) Starting from a dynamic equilibrium, the previous analysis assumed a constant rate of surplus-value of 100% throughout the course of accumulation. Yet this assumption conflicts with reality and has a purely fictitious, tentative character; therefore it has to be modified subsequently. (It is a sign of his total misunderstanding of Marx's method when Bauer accepts this provisional, fictitious, simplifying assumption of a constant rate of surplus-value of 100% and uses it in his analysis of reproduction, but simply forgets to modify it later.) In other words, commodities are cheapened due to general historical increases in productivity, and insofar as these include commodities that go into workers' consumption, the elements of variable capital are thereby cheapened, so that the value of labour-power declines and surplus-value and the rate of surplus-value increase. 'The increasing productivity of labour is accompanied by a cheapening of the worker...and it is therefore accompanied by a higher rate of surplus-value, even when real wages are rising. The latter never rise in proportion to the productivity of labour' (Cap 1, p753). This is precisely why the degree of productivity of social labour forms 'an important factor in the accumulation of capital' (p752). 'The tendential fall of the rate of profit is bound up with a tendential rise in the rate of surplus-value, hence in the degree of exploitation of labour-power' (Cap 3, p234).

A further factor in enhancing the rate of surplus-value is the rising intensity of labour that goes together with general increases in productivity (Cap 3, p227ff.). So here, in the increasing degree of exploitation of labour that flows from the general course of capitalist production, we have a factor that weakens the breakdown tendency.

(b) The 'depression of wages below the value of labour-power' (Cap 3, p230) works in the same direction. Obviously, unless the efficency of work is going to fall, this can only be a temporary step.

So far, throughout the analysis we have assumed that in keeping with the hypothetical state of equilibrium the commodity labour-power is also fully employed, ie, there is no reserve army to begin with and consequently, like all other commodities, labour-power is sold at its value. But I have shown that even on this assumption, at a certain level of capital accumulation a reserve army necessarily forms due to insufficient valorisation. Beyond this point the mass of unemployed exert a downward pressure on the level of wages, so that wages are bound to fall below the value of labour-power, which only means that the rate of surplus-value will rise. This forms a further source of increases in valorisation, and so another means of surmounting the breakdown tendency. The depression of wages below the value of labour-power creates new sources of accumulation. 'In fact, it transforms the worker's necessary fund for consumption, within certain limits, into a fund for the accumulation of capital' (Cap 1, p748). Once this connection is clear, we have a means of gauging the complete superficiality of those 'theoreticians' in the trade unions who argue for wage increases as a means of surmounting the crisis by expanding the internal 'market'. (For example, in his essay 'Rationalisation and the labour market', B Olk imagines that crises can be overcome if 'the increased share (of workers) in the produce of labour' and the additional purchasing power were given a chance to expand the market for commodities. 'Die Arbeit', Zeitschrift fur Gewerkschaftspolitik, 3 Jahrg. 1926.) As if the capitalist class is mainly interested in selling its commodities, and not in the valorisation of its capital! The same holds for Sternberg. The low wages prevalent in England in the early 19th century are supposed to be one reason 'why the crises of this period caused far deeper convulsions in English capitalism than those of the late 19th century' (Der Imperialismus, p407), even though low wages, and therefore a high rate of surplus-value, form one of the circumstances that mitigate crises!

3. Shortening of the turnover time and its impact on the rate of surplus-value and the rate of profit (pp317-322)

In the reproduction schemes a period of production lasts one year, and the working period and period of production are identical. That is to say, there is no period of circulation, and the working periods follow one another immediately. Finally, the duration of the production period is the same in all spheres of production, and the assumption is made that in all branches capital turns over once every year. Obviously, none of these several assumptions corresponds to reality and they are intended purely for simplification. In reality working period and production time are not identical (Cap 2, p316). Secondly, apart from the production time, there must also be a circulation time. And finally turnover time varies from one branch of production to another and is determined by the material nature of the process of production. If the analysis is to bear any correspondence to the real appearances, those assumptions also have to be modified.

According to Marx, 'The difference in the period of turnover is in itself of no importance except insofar as it affects the mass of surplus labour appropriated and realised by a given capital in a given time' (Cap 3, p150). The impact of turnover on the production of surplus-value, hence of profit, might be briefly summarised by saying that due to the period of time required for turnover the whole capital cannot be deployed productively, for the creation of surplus-value, at one and the same time, and therefore that a portion of the capital always lies fallow, in the form of either money-capital, commodity-capital or productive capital (raw materials in stock). The capital active in the production of surplus-value is always limited by this portion and the mass of surplus-value obtained diminished in proportion. 'The shorter the period of turnover, the smaller this idle portion of capital as compared with the total, and the larger, therefore, the surplus-value that is actually appropriated, assuming that other conditions remain the same' (Cap 3, p70).

The reduction of turnover time means, however, reductions of both production time and circulation time. 'Increases in the productivity of labour are the chief means of reducing the production time'. As long as technological advances in industry do not entail a simultaneous considerable enlargement of constant capital, the rate of profit will rise. 'And this is definitely the case with many of

the latest advances in metallurgy and chemicals. The recent discoveries in iron and steel technology, such as the Bessemer process, or the processes of Siemens, Gilchrist-Thomas, etc. reduce the previous time-consuming processes to a minimum at relatively low cost...' (Cap 3, p71).

'Improvements in communications are the chief means of reducing the time of circulation. And here the last fifty years have brought about a revolution, comparable only with the industrial revolution of the late 18th century'. The technological advances in shipbuilding mentioned earlier would fall into this category. 'The turnover period of the total world trade has been proportionately reduced, and the efficiency of the capital involved in it has increased more than two or three times. It goes without saying that this has had its effect on the rate of profit' (Cap 3, p71).

The rationalisation of German railways with the introduction of the automatic pneumatic brake made possible total savings of around 100 million mark a year, effected mainly through reductions in personnel, and fundamental changes in the speed of freight traffic. Once shunting was mechanised so that trains could be built more quickly and cheaply, and many lines were electrified, the railway system was completely revolutionised.

Apart from improvements in transport, there are the savings effected by reducing expenditures on commodity-capital. Before commodities are actually sold, they persist in the sphere of production in the shape of a commodity-stock, whose storage entails outlays on maintenance. The producer tries to restrict his inventory to the minimum adequate for his average demand. On the other hand, this minimum depends on the renewal periods that the commodities need for their reproduction (Cap2, p224). With improvements in transport, storage costs can be cut as a proportion of the total volume of sales transactions (Cap 2, p219f.). The scale of these costs is likewise reduced 'the more the stocks are socially concentrated' (Cap 2, p222) and therefore as the process of concentration advances in sphere of production. Finally, as every crisis precipitates a general attempt at reorganisation which, among other things, attacks the existing level of storage costs, the time during which capital is confined to the form of commodity-capital tends to become progressively shorter. That is, the annual turnover of capital is speeded up. Obviously this is a further means of surmounting crises. 'According to the varying speed with which capital sheds its commodity form and assumes its money form, ie, according to the briskness of the sale, the same capital value will function in the formation of value and use-value to a greater or lesser extent, and the scale of reproduction will either expand or contract' (Cap 2, p124).

4. The 'additional money-capital' required for an expanded scale of production (pp322-326)

Many writers argue that the programmes of expansion characteristic of the boom are impossible without an 'additional' sum of money, and this itself is only accessible by way of credit. Only this 'additional credit' creates the boom or makes it possible. But the capitalist mechanism and its cyclical fluctuations are governed by quite different forces. I have already shown that production can be extended even if the level of prices remains constant or falls.

On the other hand, however, at a given velocity of circulation of money, additional money is required to extend the scale of production, but for quite different reasons than those adduced by supporters of the 'credit theory'. We know from Marx's description of the reproduction process that both the individual and the total social capital must split into three portions, if the process of reproduction is to have any continuity. Apart from productive and commodity-capital, one portion must stay in circulation in the form of money-capital. To be sure, the size of this money-capital is historically variable, and even if it grows absolutely, it declines in proportion to the total volume of sales transactions. At any given point of time, however, it is a given magnitude which can, moreover, be calculated according to the law of circulation. If production is expanded, then, other things being equal, the mass of money-capital also has to be expanded. What is the source of this 'additional' money-capital required for expansions in the scale of reproduction?

In chapter 15 of Vol.2 Marx showed how through the very mechanism of the turnover money-capital is always periodically set free. While one portion of capital is tied up in production during the working period, another portion is active in circulation. If the working period were equal to the circulation period, the money flowing back out of circulation would be constantly re-deployed in each successive working period, and vice versa, so that in this case no part of the capital successively advanced would be set free. However, in all cases where the circulation period and the working period are not equal, 'a part of the total fluid capital is always set free at the close of each working period'. As the case of equality is only exceptional, it follows that 'as far as the total social capital is concerned, if we take only its fluid part, the setting free of capital is the rule...' (Cap 2, p355). Thus 'a very significant portion of the social capital in circulation, which is turned over several times a year, will periodically exist in the course of the annual turnover cycle in the form of capital which is set free...the magnitude of this capital set free will grow with the scale of production' (pp355-56) and thus with the general development of capitalism. Moreover, the greater part of this capital will always take the form of money-capital (p356).

Engels thought that Marx had ascribed 'undue significance to what in my opinion is in fact a matter of little importance. I refer to what he calls the "setting free" of money-capital ...' (Cap 2, p359). This assessment of Engels appears to me to be completely off the mark. Through his analysis Marx did not merely show that large masses of money-capital are periodically set free through the very mechanism of the turnover. He also explicitly refers to the fact that due to the curtailment of the periods of turnover as well as to technical changes in production and circulation—carried through chiefly in periods of depression, as we have seen—a part 'of the total capital advanced becomes superfluous....While production is continued on the same scale and with conditions such as prices, etc, remaining the same, the value of the capital advanced declines'. 'A greater quantity of disposable money-capital is thereby brought on to the market'. 'The sums that have become superfluous for the turnover mechanism will finally be thrown out on to the

money market' (Cap 2, p358). It follows that after every period of depression a new disposable capital stands available. 'Capitalists who operate with borrowed capital will exert less demand on the money market, and this relieves it as much as an increased supply would'. Or, 'production will be expanded' (Cap 2, p358). On the other hand, this setting free of a part of the money-capital also affects the valorisation of the total capital, ie, it increases the rate of profit, in the sense that now the same surplus-value is calculated on a reduced total capital. The setting free of a part of the money-capital is thus a further means of surmounting the crisis.

So Marx shows that despite the assumption of equilibrium, 'a surfeit of money-capital can arise...in the same sense that a definite part of the advanced capital value is superfluous to the functioning of the total process of social reproduction, and is therefore precipitated out in the form of money-capital; a surfeit that has arisen with the scale of production and prices remaining the same, simply by a contraction in the turnover period. The mass of money in circulation, whether this is larger or smaller, does not have the slightest influence on this' (Cap 2, p358).

Hence: reduction in the turnover period generates an additional mass of money-capital which is used to expand the scale of reproduction further whenever a period of boom is beginning. Marx has specifically this function in mind when he says, 'This money-capital that is set free simply by the mechanism of the turnover movement...must play a significant role as soon as the credit system has developed, and also form one of the foundations for this' (p357).

5. The conflict between use-value and exchange-value and increases in productivity (Cheapening of the elements of production and expansion of the mass of use-values) (pp326-334)

So far Marxists have always only drawn attention to the fact that with the general progress of capital accumulation, increasing productivity of labour and a rising organic composition of capital, the value of constant capital increases absolutely and relative to variable capital. Yet this phenomenon forms only one side of the accumulation process, namely if one looks at the process from its value side. (The exclusive concentration on value inherited from bourgeois economy has sunk so deep into the consciousness of Marx's epigones, from reformists to communists, that Marx's most fundamental categories have been distorted and bowdlerised. Take the category of the organic composition of capital. Marx first distinguishes a technical composition and a value composition, and then, as a third category, the organic composition, by which he understands the 'correlation' between the first two, viz. 'the value composition of capital insofar as it is determined by its technical composition and reflects the changes in the latter' (Cap 1, p762). The organic composition defined in this way is 'the most important factor' in examining the accumulation of capital. But of all of this not a trace survives in Marx's epigones. Kautsky tells us, 'As is well known (!), by organic composition of capital Marx means the ratio of constant to variable capital...' (Note to Marx, TSV 2). Likewise Varga: 'By organic composition of capital Marx means the relation of constant and variable capital as conditioned by the given techniques' (Der marxistische Sinn der Rationalisierung, Die Internationale, Berlin Jahrg.9, 1926, p433). 'The relation of c to v (c/v) I shall call the organic composition' (Lederer, Grundzuge der okonomischen Theorie, Tubingen, 1922, p100). Hence a myopic fixation on the value side! Even Hilferding says, 'the organic composition of capital, the relation of c (constant, means of production) to v (variable, wages) capital, varies in the different branches of production' (Bohm-Bawerk's Marx-kritik, Wien, 1904 p23). Hilferding forgets that the organic composition does not coincide with the value composition, that despite differences in value composition, the technical composition can be the same, just as, conversely, an identical value composition can express different technical compositions. If the organic composition is simply the relation c to v, as these writers imagine, one wonders how this 'organic' composition is any different from the value composition. Why, in that case, did Marx distinguish these categories so sharply?) However—and this cannot be emphasised enough—the reproduction process is not simply a valorisation process, it is also a labour-process, it produces not only values, but also use-values. Considered from the side of use-value, increases in the productivity of labour represent not merely a devaluation of the existing capital, but also a quantitative expansion of useful things.

'It depends on the productivity of labour how much use-value is produced in a given time' (Cap 3, p799). Marx emphasises the great importance of increases in productivity for the accumulation of capital: 'For two things depend on this productivity: First, the mass of use-values in which the average profit is expressed; and this is doubly important since the latter serves both as a fund for the accumulation of new capital and as a revenue fund for consumption' (Cap 3, p194). Earlier (on p55) I referred to the role of expansions in the mass of use-values in increasing the rate of surplus-value, insofar as these use-values are consumed by workers. So now we shall have to look at the impact of increases in the mass of use-values on the fund for accumulation.

Marx proceeds from the empirical fact that 'with the development of the productivity of social labour, the mass of use-values produced expands even more, and one part of this is formed by the means of production. The additional labour through whose appropriation this expanded wealth can be reconverted into capital, depends not on the value, but on the mass of these means of production (including means of subsistence), because in the labour-process the worker has nothing to do with the value, but with the use-value, of the means of production' (Cap 3, p214).

Through their value repercussions, increases in productivity that impinge on the material elements of productive capital, 'and especially of fixed capital' (Cap 3, p225), mean a higher profitability for individual capitals. Moreover, 'by enhancing the rate of profit', these increases in productivity 'enlarge the specific portion of the value of the annual product which is reconverted into capital' (Cap 3, p243). The same mechanism operates when one looks at the process of reproduction socially, or in its totality. 'From the point of view of the total capital', Marx writes, the value of the

constant capital does not increase in the same proportion as its actual scale (sein materieller Umfang). For example, the mass of cotton which one European worker works up in a modern factory has grown tremendously compared to what the European spinner used to work up on the spinning wheel. Yet the value of the cotton worked up by a spinner today has not grown in the same proportion as its mass....In individual cases the mass of the elements of constant capital may even increase, while its value remains the same or falls' (Cap 3, p230-31). In this fact Marx sees one of the causes which check the fall in the rate of profit, and thus the breakdown tendency. For in the first place, if the value of the elements of constant capital were to increase in the same proportion as their mass, the rate of profit and valorisation of the total capital would be even lower. But secondly, the expansion of use-values has great indirect significance for the valorisation process. For in this respect 'increases in the productivity of labour contribute indirectly to the expansion of the value of the existing capital insofar as they expand the mass and multiplicity of use-values in which the same exchange-value is represented and which form the material substance or actual elements of capital, the actual objects out of which constant capital is directly constituted and variable capital at least indirectly' (Cap 3, p243). With an expanded mass of the elements of production, even if their value is the same, the scale of production can be expanded technologically, for in this case, even for the given value of capital, more workers can be introduced into the productive process and in the next cycle of production these workers will be producing more value. 'The same capital and the same labour create more products that can be converted into capital, regardless of their exchange-value—products which can be used to absorb additional labour and therefore additional surplus labour, and so used to create additional capital' (p243). In short, Marx explains how a greater number of workers can be employed in production if the elements of production are cheapened by way of expansions in the mass of use-values that embody the same value as formerly. 'In itself an increase in the quantity of use-values constitutes an increase in material wealth. Two coats will clothe two men, one coat will only clothe one man, etc. Nevertheless, an increase in the amount of material wealth may correspond to a simultaneous fall in the magnitude of its value' (Cap 1, p136-37). And Marx writes, 'The mass of labour which a given capital can command depends not on its value, but on the mass of raw and auxiliary materials, machinery and elements of fixed capital as well as of means of subsistence of which it is composed. And this is true irrespective of their value. As the mass of labour and of surplus labour thus increases, the value of the reproduced capital expands as does the surplus-value newly created by it' (p243).

'The most important thing for the immediate exploitation of labour is not the value of the means of production deployed, whether these are fixed capital, raw materials or auxiliary substances. The exchange-value of the machinery, buildings, raw materials, etc, is quite irrelevant insofar as they serve as means of absorbing labour....What counts ultimately is, on the one hand, the mass of these means of production which is technically required for combination with a given quantity of living labour, and, on the other hand, their specific quality, ie, not only good machinery, but also good raw and auxiliary materials' (Cap 3, p82).

With increases in productivity and expansions in the mass of use-values, the mass of means of production (and of subsistence) which can function as 'means of absorbing labour' expands more rapidly than the value of the accumulated capital. (This is why, in the course of accumulation, 'the diminution in the variable part of capital as compared with the constant part, or, in other words, this change in the value composition of the capital, provides only an approximate indication of the change in the composition of its material components' (Cap 1, p774). And a bit later, 'with the increasing productivity of labour, the mass of the means of production used by labour increases, but their value in comparison with their mass diminishes. Their value therefore rises absolutely, but not in proportion to the increase in their mass. The increase of the difference between constant and variable capital is therefore much less than that of the difference between the mass of the means of production...and the mass of the labour-power. The former difference increases with the latter, but in a smaller degree', p774.) The means of production can therefore employ more labour, and extort more surplus-labour, than would otherwise correspond to the accumulation of value as such. 'Increases in the productivity of labour...in the first instance increase only the mass of the product, not its value.... However, they also provide new material for capital and thus the basis for an increased capital accumulation' (Cap 2, p432). With increases in productivity and a cheapening of labour-power, 'the same value in variable capital sets in motion more labour-power and consequently more labour. The same value in constant capital is embodied in more means of production, ie, in more instruments of labour, materials of labour and auxiliary materials. It therefore supplies both more product-creating agencies and more value-creating agencies, in other words, absorbers of labour. Therefore, even if the value of the additional capital remains the same or diminishes, accelerated accumulation still takes place. Not only does the scale of reproduction extend materially, but the production of surplus-value increases more rapidly than the value of the additional capital' (Cap 1, p753).

This tendency for the mass of use-values to expand runs parallel with the opposite tendency for constant capital to increase as compared with variable, and hence for the number of workers to decline. But 'these two elements comprised in the process of accumulation should not be regarded simply as coexisting peacefully....They contain a contradiction which manifests itself in contradictory tendencies and phenomena. These conflicting forces counteract each other simultaneously' (Cap 3, p243-44). In other words: 'From its value side, the accumulation of capital is slowed down by the fall in the rate of profit, only to accelerate even further the accumulation of use-values, which in turn speeds up accumulation in terms of value' (Cap 3, p245).

In Table Two it was seen that with an assumed increase in working population of 5% p.a. and an assumed expansion of constant capital of 10% p.a., the system would have to collapse in year 35. But because the mass of capital grows

more rapidly in terms of use-value than in terms of value, and because furthermore, the employment of living labour depends not on the value but on the mass of the elements of production, it follows that to employ the working population at a given level (represented in the scheme by variable capital values) a much smaller capital would actually suffice than shown in the table itself. Increases in productivity and the expansion of use-values bound up with them react as if the accumulation of values were at a lower or more initial stage. They represent a process of economic rejuvenation. The life-span of accumulation is thus prolonged. 'A point is reached in the course of accumulation', Marx writes, 'at which the development of the productivity of social labour becomes the most powerful lever of accumulation' (Cap 1, p772). But this only means that the breakdown is postponed, which 'again shows that the same causes which produce a fall in the rate of profit also mitigate the actual impact of this tendency' (Cap 3, p231 t.m.)

It is thus completely inadequate to examine the process of reproduction purely from the side of value. We can see what an important role use-value plays in this process. Marx himself always tackled the capitalist mechanism from both sides, value as well as use-value.

6. The emergence of new spheres of production with a lower organic composition of capital (p334-341)

Critics of Marx have repeatedly pointed out that, according to Marx's prognosis, the impact of capitalist competition expresses itself in the fact that not only are independent craftsmen forced into the ranks of the proletariat by competition, but 'that the same competition rages like the plague among the capitalists themselves, eliminates them on a massive scale until eventually only a tiny number of capitalist magnates survive' (Oppenheimer, Archiv f. Sozialwissenschaft, LVII, p499). Sternberg repeats the same point. After that there is nothing easier than the argument that Marx's prognosis is not substantiated by the actual tendencies of historical development. But again this overlooks the essential point of Marx's methodological procedure. Marx's schemes deliberately simplify—they show only two spheres of production within which individual capitals progressively succumb to concentration. On this assumption, the number of capitalists becomes smaller and smaller. But the assumption that there are only two spheres of production is fictitious and it has to be modified so as to correspond with empirical reality. Actually Marx shows that there is a constant penetration by capital into new spheres. 'At the same time offshoots split off from the original capital and start to function as new and independent capitals.... With the accumulation of capital, therefore, the number of capitalists grows to a greater or lesser extent' (Cap 1, p776). Elsewhere the idea is expressed as follows: 'with increases in productive capacity, the number of spheres of production steadily increases, and so there are new openings for the investment of capital which did not exist previously. In the general course of development production...becomes enormously diversified' (TSV 2, p539 t.m.)

The concentration of capital is supplemented by the opposite tendency of its fragmentation, and here 'the division of property within capitalist families plays a great part' (Cap 1, p776). In this way 'the accumulation...and increase of each functioning capital is thwarted by the formation of new capitals and the splitting up of the old ones' (Cap 1, p776). Because the minimum amount of capital required for business in spheres with a higher organic composition is very high and is growing continuously, 'the smaller capitals...crowd into spheres of production which large-scale industry has taken control of only sporadically or incompletely (p777), and these are naturally spheres with a lower organic composition where a relatively larger mass of workers is employed.

Now 'if a new branch of production comes into being in which a disproportionately large mass of living labour is employed in relation to accumulated labour, in which therefore the composition of capital is far below the average composition which determines the average profit', a larger mass of surplus-value will be produced in this branch. 'If this is levelled out by competition, this only means that the general level (of profit) has beenn raised, because now capital realises a greater quantity of surplus labour which is unpaid' (TSV 2, p435). Obviously this must also restrain the breakdown tendency. On the one hand, the lower organic composition of capital raises the rate of profit, on the other, the formation of new spheres of production makes possible further investment of capital, 'either because new branches are created or because the old ones are expanded and worked on a larger scale' (TSV 2, p558 t.m.).

In this way a cyclical movement evolves—the self-accumulating capital searches out new investment possibilities, while new inventions and the like create such possibilities, new spheres of industry develop suddenly, superfluous capital is re-absorbed, and gradually there is a new accumulation of capital which is destined to become superfluous on an ever larger scale, and so on (cf. the pamphlet cited by Marx in Cap 3, p405).

This accounts for the great importance of 'the new splinters of capital which form separate or independent groupings. If the formation of capital were totally controlled by the established big capitals, which can compensate for declining profitability through the scale of their profits, the living flame of production would be completely extinguished. It would simply die out' (Cap 3, p254 t.m.).

English capitalism is deeply symptomatic of these processes. (JD Lewin, 'Zur Frage der Wandlung des englischen Kapitalismus', Die Kommunistische Internationale, 1927, p171 ff.). Of course, it would be quite untrue to claim that there is a declining dependence on world market exports, for, under capitalism, no country can hope to exist without exports. But it is a fact that while the traditional industrial centres of the North, of Scotland and of Wales have been in a chronic crisis, a whole series of new industries have begun to spring up in the South, in the Midlands and in the areas surrounding London. As a report published by the inspector-general of factories shows, these are industries with a much lower organic composition of capital. Eg, around London, apart from a few car-assembly plants, there are factories producing bandages, minor electrical fittings, bedstead, bed spreads, ice creams, mixed pickles, cardboard boxes and pencils. Among the few newer industries

with a fairly high organic composition are rayon and automobiles, the latter with some 14 600 units, over half of which are repair-shops scattered across the country. According to data released by the Ministry of Labour (1926), the number of workers employed in the new industries increased by 14% in the space of 3 years (1923-26), while those employed in the older industries like coal-mining and shipbuilding declined by 7.5%. Earlier England could afford to import small-scale stuff from the Continent and Japan, whereas now it has to produce it itself. Even if the development of such industries does relieve the general impact of the economic depression, it cannot compensate for the catastrophic consequences of the decline of the older branches which formed the basis of England's domination. In fact, the new industries employ a total of only 700 000 workers, whereas the majority are still in the traditional branches like coal, textiles, shipbuilding and so on.

7. The struggle to abolish ground-rent (pp341-48)

A model of 'pure capitalism' where there are only two classes, capitalists and workers, assumes that agriculture forms only a branch of industry completely under the sway of capital. In other words, one abstracts from the category of 'ground-rent' or the existence of landlords. But how are the results of this analysis modified once this assumption is dropped?

Modern, purely capitalist ground-rent is simply an excess of value over price of production. It is a 'tax' levied on the profits of capital by the landlord (Cap 3, p743). To the landlord it represents merely 'a certain money assessment which he extorts from the industrial capitalist...by virtue of his monopoly' (Cap 3, p603). When Marx refers to the levelling of surplus-value to average profit, he says, 'Yet this appropriation and distribution of surplus-value...by capital encounters its specific limit in landed property. Just as the functioning capitalist pumps surplus labour, and so, in the form of profit, surplus-value, out of the worker, the landlord for his part pumps a portion of this surplus-value...out of the capitalist in the form of rent' (Cap 3, p800).

In this sense rent plays a role in depressing the level of the average rate of profit. Obviously it must therefore speed up the breakdown tendency of capitalism. This is the basic reason why the representative spokesmen of capitalism have always been hostile to ground-rent. For 'landed property is distinguished from other kinds of property by the fact that it appears superfluous and destructive at a certain stage of development, even from the standpoint of capitalism' (Cap 3, p608). Quesnay's theory of taxation was already an early expression of this mood of capitalist hostility to ground-rent. Ricardo's writings were likewise directed 'against the interests of the landlords and their supporters'. About this tradition Marx writes, 'One can understand why economists like Mill, Cherbuliez, Hilditch and others should demand that rent be handed over to the state in lieu of taxes. This is a naked expression of the hatred the industrial capitalist bears towards the landlord, who is for him a useless excrescence on the body of bourgeois society' (Poverty of Philosophy, p140).

The bourgeois land reform movements of the latter part of the 19th century sprang fundamentally from the same source.

Once industry begins to revolutionise the rural economy at a fairly advanced stage of capitalist development, the organic composition of agricultural capital rises and slowly starts approaching the level in industry, and this tendency is further intensified with the overaccumulation of capital and the desperate search for profitable investment. (Purely in terms of machinery, the average American farm worker of today handles five times as much capital as he did fifty years ago. HR Tolley, 'The role of machinery in American agriculture', paper presented to the Prague International Management Congress, July 1924.) It is only at this stage that 'productivity advances in both (industry as well as agriculture), though unevenly. But when industry reaches a certain level, the disproportion must diminish, ie, productivity in agriculture necessarily increases more rapidly than in industry' (TSV 2 p110). Moreover, as the composition of capital is equalised in the two spheres, absolute rent disappears and rent itself is only possible in the form of differential rent or monopoly price rent. ('If the average composition of agricultural capital were equal to, or higher than, the composition of the average social capital, then absolute rent...would disappear, ie, rent which is different both from differential rent and from rent based on real monopoly prices', Cap 3, p746. Varga, Beitrage zur Agrarfrage, Hamburg, 1924, p15ff, argues that in Vol.3 and in Theories of Surplus-Value Marx proposed two distinct and contradictory theories of absolute ground-rent, between which he vacillated and which he confused. Varga regards as 'incorrect' Marx's deduction of absolute ground-rent from the fact that in agriculture values are higher than prices of production due to a lower organic composition of capital—because, even if the composition were higher than the social average, absolute rent need not disappear. And how is this possible? Varga's 'discovery' is astonishing: 'In fact, it is always possible for the landowner to keep his land out of cultivation, until the price of its produce rises above the value.' That is to say, for Varga absolute rent has nothing to do with the organic composition of agricultural capital, but stems from the landowner's monopolistic power. Varga simply forgets something he himself stated earlier, namely that Marx begins his analysis with the assumption that all commodities, including agricultural ones, sell at value. Given this assumption, the whole argument collapses, because precisely an increase of price over value is precluded from the very start, ex hypothesi. Even with this assumption, however, absolute rent has to disappear once the organic composition in agriculture is the same as that in industry. The supposed 'contradiction' in Marx's theory of rent stems from Varga's own confusion of absolute rent with rent based on monopoly prices, and his lack of clarity about the actual assumptions that Marx works with. When the prices of agricultural produce rise above value, one is dealing not with absolute rent but with monopoly price rent.)

As absolute rent disappears with progressive increases in the organic composition of agricultural capital that draw it closer to the social average, the impact of this rent in intensifying the breakdown of capitalism is defused at this late stage of accumulation.

In contrast to absolute rent, monopoly price rent stems not from the surplus-value produced within agriculture itself, but

from transfers of surplus-value from the industrialists to the landlords. This is the case Ricardo has in mind when he says, 'I always consider it as the result of a partial monopoly, never really regulating price, but rather as the effect of it' (Principles, chapter 20). Agreeing with Sismondi, Ricardo calls such rent 'a value purely nominal, and the mere result of that augmentation of price which a seller obtains in consequence of a peculiar privilege...a transfer of value, advantageous only to the landlords and proportionably injurious to the consumer' (chapter 32).

8. The struggle to eliminate commercial profit. The economic role of the new 'middle class' (p348-356)

Commercial profit has the same impact on the breakdown of capitalism as ground-rent. Earlier it was assumed that 'merchant's capital does not intervene in the formation of the general rate of profit' (Cap 3, p279). Again, this assumption has a purely methodological value, and it has to be modified. For, 'in the case of merchant's capital we are dealing with a capital which participates in profit without playing any role in its production. Hence it is now necessary to supplement our earlier exposition' (ibid). Commercial profit is a 'deduction from the profit of industrial capital. It follows that (1) the larger the merchant's capital in proportion to the industrial capital, the smaller the rate of industrial profit' (Cap 3, p281). Clearly this will intensify and speed up the breakdown of capitalism. The theory of the Physiocrats represented an attack on traders from the standpoint of the productive, ie, surplus-value producing, classes. 'The particular interests of the trader and those of the nation are opposed to one another', writes Quesnay (Analyse du Tableau Economique, Paris, 1846, I, p73).

In periods of crisis this struggle against traders is a concrete means of improving the reduced valorisation of capital. In his report on the American crisis, Professor Hirsch has shown that in America the elimination of large-scale traders by rural cooperatives in grain, fruit and milk has assumed massive proportions, with cooperative sales accounting for as much as 20% of the total commercialised value of US agricultural produce. The cotton farmers of the north are likewise engaged in a struggle to eliminate intermediaries and supply the spinners directly.

But this movement acquires its most powerful expression in the drive launched by the modern cartels and trusts to increase profitability by reducing the costs of sales and import transactions through a centralisation and elimination of intermediary trade (F Kestner, Der Organisationszwang. Eine Untersuchung uber Kampfe zwischen Kartelle und Aussenseitern, Berlin 1912, p8). According to Hilferding, capacity to wipe out the trader is one of the basic reasons for the superiority of the combined enterprise. Hence also the tendency to vertical concentration (Finanzkapital, p254).

With the rapid advance of concentration in the iron and steel industry, the significance of commercial capital has progressively declined. Precisely in this industry there is a striking tendency to wipe out intermediary trade, as the mining and production stages are integrated vertically into a single enterprise, eg, the American steel trust, so that no profit is diverted to commercial capital at any single stage of the process. This is the realisation of Rockefeller's principle, 'Pay a profit to nobody'. Commercial capital is either left with the supplying of small customers, or forced into a position of pure dependence on industrial capital. 'The development of large-scale industrial concerns, or the formation of monopolies', says Vogelstein, 'has dethroned the princely merchant and transformed him into a pure agent or stipendiary of the monopolies....This world of monopolies is ridding itself of every vestige of commerce (entkommerzialisiert sich)....By transferring sales transactions to the syndicates, and through price fixation...the industrial concern reduces purely commercial activity to a minimum and leaves this to a few people in the head-office or to individual trading concerns affiliated to itself' (Die finanzielle Organisation der kapitalistischen Industrie und die Monopolbildungen, Gr.d.Sozialok. VI, p243). 'The trader is subsumed into the bureaucracy of the cartel....Soon he is deprived of sales to big customers and left only with retailing or selling to small workshops, local retailers and consumers' (p239).

The formation of their own export organisations by the larger associations and concerns is yet another example of the tendency to wipe out independent large-scale trade. In copper, formally speaking, a system of 'trading' survives, but de facto no longer as an independent function, since the system is intricately connected with producers. Dyestuffs and electricals are two industries with their own sales organisations abroad (B Harms, Strukturwandlungen der deutschen Volkswirtschaft, Berlin 1928, II, p127, p137 f.). According to the calculations made by Rosenbaum, of Germany's total imports in 1926 around 48.3% were 'direct', ie, transacted without the mediation of any trading concerns. In the case of textile raw material the figure was 50%, and in ores and metals as high as 90% (pp130-140).

The wiping out of commercial profit by way of enhancing the average rate of profit on industrial capital is forced on this capital by its declining valorisation tendency in the course of capital accumulation: therefore, as the level of accumulation advances the tendency to eliminate commercial capital is intensified.

However, this tendency to wipe out commercial profit is not tantamount to a cessation of commercial activity. The latter cannot be done away with under capitalism, in the sense that commercial agents fulfil basic functions of industrial capital in the proces of its circulation, namely, 'its function of realising values' (Cap 3, p288). In this respect, they are simply representatives of the industrial capitalist. 'Circulation is just as necessary for commodity production as is production itself, and thus agents of circulation are just as necessary as agents of production. The reproduction process includes both functions of capital, and thus also the need for these functions to be represented, either by the capitalist himself, or by wage-workers, his agents' (Cap 2, p205).

Despite the tendency for commercial profit to be eliminated, commercial functions gain in importance to the very degree that capitalism develops, quite regardless of whether they are represented by individual merchants or by trade organisations, large-scale cooperatives or industrial trusts and concerns (Cap 2, p191). In craft production one produced for one's own consumption, or for customers, and

there was no commercialisation of the produce (Cap 3, p305). 'The exent to which the produce is commercialised and passes through the hands of the merchant depends on the mode of production, and reaches its maximum development in a fully developed capitalism, where products are produced solely as commodities' (Cap 3, p320). It follows that the share of 'commerce' in the overall occupational structure must expand. There is a growing number of commercial businesses and of commercial employees. 'The more developed the scale of production...the greater the scale of commercial operations' and 'this necessitates the employment of commercial wage-workers' (Cap 3, p293). A new 'middle class' emerges, a numerous intermediate stratum of commercial agents, commercial employees, secretaries, accountants, cashiers, etc.

The question arises—what impact does the existence of this new middle class (dieses neuen Mittelstandes) have on the course of the capitalist reproduction process? Can it actually reduce the severity of capitalist crises and weaken the breakdown tendency, as the reformists have argued ever since Bernstein?

Marx points out the basically different character of this 'middle stratum' which arises on the foundations of capitalist production. 'The outlay for these (commercial wage-workers), although made in the form of wages, differs from the variable capital which is invested in buying productive labour. It increases the outlay of the industrial capitalist, the mass of the capital he has to advance, without directly increasing surplus-value. For it is an outlay on labour employed only in realising the values already created. Like any other outlay of this kind, it reduces the rate of profit because the advanced capital increases, while the surplus-value remains the same' (Cap 3, p293). On the contrary, due to the variable capital expended on these commercial wage-workers, the accumulation fund av available for the employment of more productive workers is reduced. 'A part of the variable capital must be deployed in acquiring these labour-powers that function only in circulation. This advance of capital creates neither products nor values. It proportionately reduces the scale on which the advanced capital functions productively' and constitutes a 'deduction from the product' (Cap 2, p211).

The rate of valorisation of the total social capital is thereby diminished and the breakdown tendency intensified, quite regardless of the fact that these middle strata may initially consolidate the political domination of capital. As these middle strata grow, the breakdown is speeded up. As long as the mass of surplus-value is growing absolutely, this is not visible; but once there is a lack of valorisation due to the advance of accumulation, this fact is outlined all the more sharply.

9. The economic function of 'third persons'. The impact of 'dependent' incomes on the process of reproduction (pp356-361)

The term 'third persons' is used by Marx in a double meaning. Sometimes he means by it independent small-scale producers who are remnants of earlier forms of production and who are therefore not intrinsically connected with capitalism as such, and can and must be excluded from any analysis of its inner nature. We shall see later (Pt.II, Section 1, c) how far these elements can and do affect capitalist production through the mediation of the world market. But secondly, Marx understands by 'third persons' the bureaucracy, the professional strata, rent-receivers and so on, who exist on the foundations of capitalism, to be sure, but do not participate in material production either directly or indirectly (as with intellectuals) and are therefore unproductive from the standpoint of such production. They do not enlarge the mass of actual products, but, on the contrary, reduce it by their consumption, even if they perform various valuable and necessary services by way of repayment. The income of these people is not obtained by virtue of their control of capital, and it is not, therefore, an 'income obtained without work'. 'On the other hand, the recipients of these revenues draw them by way of their social function and they can therefore view these functions as the original source of their revenue' (Cap 2, p448-49).

Now however important their services may be, these are not embodied in products or values. Insofar as they themselves consume commodities they depend on those persons who participate in material production. From the standpoint of material production their incomes are 'derivative'. So Marx writes, 'All members of society who do not figure directly in the reproduction process, as workers or anything else, can receive their share of the annual commodity product, ie, their means of consumption, only from the hands of those classes to whom this product accrues in the first place—productive workers, industrial capitalists and landlords. To this extent their revenues are, in a material sense, derived from wages...profit and ground-rent, and therefore appear, in contrast to these original revenues, as derivative' (ibid).

This group of 'third persons' which was initially excluded from the analysis of 'pure capitalism' has to be re-introduced at a later stage. For 'the actual composition of society by no means consists only of two classes, workers and industrial capitalists, and...therefore consumers and producers are not identical categories'. In other words, 'the first category (consumers, Grossmann) whose revenues are to some extent secondary, derived from profit and wages, is much broader than the second category (producers, Grossmann), and therefore the way in which they spend their revenue and the scale of this revenue introduce important modifications into the economy and especially in the circulation and reproduction process of capital' (TSV 2, p493).

In that case, what significance does the existence of these people have for the reproduction and accumulation of capital, and particularly for the problem of the breakdown? Insofar as their material incomes are 'dependent' incomes, ie, drawn from the capitalists, we are dealing with groups which are, from the standpoint of material production, pure consumers. (This is not the case with Luxemburg's 'third persons' in the non-capitalist sector, because here it is not a question of consumption as such, in the sense that the commodities concerned do not disappear from the circulation process, they only change their material form.) Now as long as this consumption by 'third persons' is not sustained directly at the cost of the working class, or drawn from wages, surplus-value, or the fund for accumulation, is

reduced. Of course these groups perform various services in return, but the non-material (immaterielle) character of such services makes it impossible for them to be used for the accumulation of capital. The physical nature (dingliche Charakter) of the commodity is a necessary precondition of its accumulation. Values enter the circulation of commodities C-M-C, and thus represent an accumulation of capital, only insofar as they acquire a materialised form.

Because the services of 'third persons' are of a non-material character, they contribute nothing to the accumulation of capital. On the other hand, by their consumption they cut down the accumulation fund. The larger this class, the greater the deduction from the fund for accumulation. The tempo of accumlation is thus slowed down. According to figures collected by the German Institut fur Konjunkturforschung (Vierteljahrshefte 2 Jhrg. 1927, Heft 4 p20), in Germany in 1925 the services of such groups were valued at 6 billion mark, which amounts to 11% of the total national income. In England, where there is a large number of such persons, the tempo of accumulation will have to be slower, whereas in America, where their proportion is low, it can be much more rapid. If the number of these 'third persons' were cut down, the breakdown of capitalism could be postponed. But there are several limits to any such process, in the sense that it would entail a cut in the standard of living of the wealthier classes.

10. Expanding the scale of production on the existing technological basis (Simple accumulation) (pp361-363)

With Bauer we assumed that every year there are technological changes going on, so that constant capital is expanding by 10% pa. This is a purely fictitious assumption, of course. Observation shows that production is not always expanded on the basis of a higher organic composition. Some capitalists expand production on the existing technological basis for a longer or shorter period of time. In such cases one is dealing with simple accumulation, where the growth of c keeps step with the working population. The expansion of capital exerts a proportional attraction on workers. Of course, historically the technological foundations of capitalism are being constantly improved, and the organic composition is always changing. 'This constant variation is however equally constantly interrupted by periods of rest, during which there is a merely quantitative extension of factories on the existing technical basis' (Cap 1, p578). As the accumulation of capital advances, these periods of rest become progressively shorter. 'The intermediate pauses in which accumulation works as a simple extension of production on a given technical basis are shortened' (Cap 1, p782). (J Takata argues that far from becoming shorter, these so-called periods of rest become longer, because the monopolistic domination of trusts and cartels does away with the compulsion to change technology continuously. Takata forgets that under capitalism a complete monopoly is impossible, because latent in the background of every monopoly organisation there is always the competition of outsiders or of a substitute product, moreover that technology is determined by the competitiveness of capital on the world market.) However, to the actual extent that such periods of rest do occur, they imply a weakening of the breakdown tendency, ie, absolute overaccumulation is displaced to a more distant future. So Marx writes, 'This constant expansion of capital, or this extension of production on the existing technological foundations which proceeds quietly while new methods of production are being introduced side by side, is another reason why the rate of profit does not fall as much as the total capital of society grows' (Cap 3, p258). We shall see that as world market antagonisms intensify, technological superiority is the sole means of surviving on the world market. The sharper the struggle on the world market, the greater the compulsion behind technological changes, so that the intermediate pauses are shortened. Gradually this counteracting factor becomes less and less important.

11. The impact of the periodic devaluation of capital on the accumulation process. Crises and wars as factors that postpone the breakdown (pp363-371)

We have seen that constancy of value is one of the many assumptions underlying the reproduction scheme of Marx. Bauer takes over this assumption in two senses: firstly, the value of the constant capital used up in the process of production is transferred intact to the product; secondly, the values created in each cycle of production are accumulated in the next cycle without undergoing any quantitative changes meanwhile. (Some values are of course destroyed in consumption.) This constancy is postulated although Bauer's scheme presupposes continuous technological progress. He does not notice the contradiction. Technological progress means that since products are created with a smaller expenditure of labour, their value falls. And this is not true only of these products. This fall in value reacts back on the commodities that are now on the market and that were formerly produced with a greater expenditure of labour-time; these commodities are devalued (cf. Cap 1, p318, p677). But there is no trace of this typical phenomenon in Bauer's scheme. To be sure, he refers to devaluations, but this is only due to periodic overproduction, ie, if the system were in equilibrium, there would be no devaluations—the value relations of any given point of time would survive indefinitely. But things are quite different in Marx! Devaluation necessarily flows out of the mechanism of capital even in its ideal or normal course. It is a necessary consequence of continual improvements in technology, of the fact that labour-time is the measure of exchange-value. As early as 1847 Marx was writing, 'Every new invention which makes it possible to produce in one hour what previously took two hours devalues all products of the same type which are on the market....This fact, that labour-time serves as a measure of exchange-value, becomes in this way the law of the continual devaluation of labour. In fact, devaluation will affect not only the commodities disbursed on the market, but also the instruments of production and entire plants' (Poverty of Philosophy, p56).

It follows that any assumption of value constancy has a purely provisional character. But the question arises—how is the law of accumulation and breakdown modified in its actual workings when the assumption is dropped? Till now this problem has never been posed. That constancy of values

is a simplifying assumption both Bauer and Tugan realised, but neither of them ever modified this assumption. In this sense their models of reproduction are completely unrealistic fictions which cannot reflect or explain the actual course of capitalist reproduction. For devaluation of capital goes hand in hand with the fall in the rate of profit and is only another expression of this fall (Cap 3, p243). Now the fall in the rate of profit 'accelerates the concentration and centralisation of capital through the expropriation of the smaller capitalists' (Cap 3, p236). If one simply ignores the devaluation of the existing capital, as Bauer and Tugan do, then there is no means of explaining the processes of concentration and centralisation which are so fundamental to, and characteristic of, the capitalist mechanism.

So how does the devaluation of old capital affect the actual course of the reproduction processs?

I shall take up only those effects which are directly related to the problem of accumulation. We have seen how the accumulation process encounters its ultimate limits in insufficient valorisation. The further continuation of capital depends on its restoring the conditions of valorisation. These conditions can only be secured if (a) relative surplus-value is increased or (b) the value of the constant capital is reduced 'so that the commodities which enter into the reproduction of labour-power or into the elements of constant capital are cheapened. But both imply a depreciation of the existing capital' (Cap 3, p243). Now this depreciation does not come about as a consequence of overproduction, but in the normal course of capitalist accumulation, as a result of constant improvements in technology. Periodic advances in technology thus entail 'the periodic devaluation of the existing capital—which is one of the means immanent in capitalist production for stopping the fall in the rate of profit and accelerating the accumulation of capital value through the formation of new capital' (Cap 3, p244).

To know how the devaluation of capital is reflected, we should bear in mind that the organic composition of capital is closely related to devaluation of the existing capital. In other words, the result of devaluation is reflected in the fact that a given mass of means of production represents a smaller value. Here we have a phenomenon which is analogous to the 'conflict between use-value and exchange-value due to increases in productivity' (cf. p57), viz. a cheapening of the elements of production, ie, a faster growth of the mass of use-values as compared with the mass of value; yet with this difference that in the previous case the elements of production actually start off cheaper, whereas here elements of production produced at a given value are only subsequently devalued. The technological composition of capital remains the same, while its value composition c:v declines. Both before and after the same quantity of labour is required to set in motion the same mass of means of production and to produce the same quantity of surplus-value. But because the value of the constant capital c has declined, this quantity of surplus-value is calculated on a reduced capital value. ('...the destruction of capital through crises means depreciation of the mass of value....No use-values are thereby destroyed. What one loses, the other gains....The old capitalists go bankrupt...although the buyer of these commodities, because he has acquired them at half their cost-price, can even make a profit. A large part of the nominal capital of society, that is, of the exchange-value of the existing capital, is destroyed once and for all, even though this destruction, because it does not affect use-value, might even give a powerful impetus to new reproduction. This is also the sort of period when money-capital enriches itself at the cost of industrial capital', TSV 2, p496.) The rate of valorisation is thereby increased and so the breakdown is postponed for some time. In terms of the Table, periodic devaluation of capital would mean that the accumulated capital represents a smaller value-magnitude than shown by the figures there, and would, for example, only reach the level of year 20 as late as year 36.

In other words, however much they devastate the individual capitalist, devaluations of capital in periods of crisis are a safety-valve for the capitalist class as a whole, for the system, a means of prolonging its life-span, or of defusing the dangers that threaten to explode the entire mechanism. The individual is thus sacrificed in the interest of the species.

Devaluation includes the sale of commodities at ruinous prices. (In this respect the devaluation of capital is quite different from the devaluation of shares, which has no immediate effect on the level of wealth. Moreover, whereas progressively larger masses of capital are devalued, share prices show a long-run tendency to appreciate.)

The devaluation of accumulated capital is reflected in various forms in a given economy. 1) Initially Marx deals with the normal case, periodic devaluation due to technological changes, as a result of which the value of the existing capital is diminished, while the mass of production remains the same. 2) But the same effect is produced when the apparatus of reproduction is used up or destroyed, in terms of value as well as use-value, through wars, revolutions, habitual use without simultaneous reproduction, etc. Now for a given economy the effect of capital devaluation is the same as if the accumulation of capital were to find itself at a lower stage of development. In this sense it creates greater scope for the accumulation of capital. The specific function of wars in the capitalist mechanism is only explicable in these terms. Far from being an obstacle to the development of capitalism, or a factor which accelerates the breakdown, as Kautsky imagines, and as numerous Marxists have supposed, the destructions and devaluations of war are in fact a means of warding off the imminent collapse, of creating a breathing space for the accumulation of capital. For example, it cost England 23.5 million pounds sterling to suppress the Indian uprising of 1857-58, and another 77.5 million to fight the Crimean War. These capital losses only relieved the overtense situation of English capitalism and opened up new room for her expansion. This is even more true of the capital losses and devaluations to follow in the aftermath of the First War. According to Woytinsky, 'around 35% of the wealth of mankind was destroyed and squandered in the four years' of this War. (Die Welt in Zahlen, Berlin 1925, I, pp197-198). Because the population of the major European countries simultaneously expanded, despite war losses, a larger valorisation base confronted a reduced capital, and this created new scope for accumulation.

Kautsky was completely wrong to have supposed that 'the catastrophe of the world war' would inevitably lead to the

'breakdown of capitalism' and then, when no such thing happened, to have gone on to deny the inevitability of the breakdown as such (Material. Geschichtsauffassung. II p559). From the Marxian theory of accumulation it follows that war and the destruction of capital values bound up with it weaken the breakdown and necessarily provide a new impetus to the accumulation of capital. Luxemburg's conception is equally wrong: 'From the purely economic point of view, militarism is a pre-eminent means for the realisation of surplus-value; it is in itself a sphere of accumulation' (Accumulation of Capital, p454).

Obviously this is how things may appear from the standpoint of individual capital, for military supplies have always been the occasion for enrichment. But from the standpoint of the total capital, militarism is a sphere of unproductive consumption. Instead of being 'saved', values are pulverised. Far from being a 'sphere of accumulation', militarism actually slows down accumulation. By means of indirect taxation, a major share of the income of the working class which might have gone into the hands of the capitalists as surplus-value is seized by the state and spent mainly for unproductive purposes. Mombert sees this as one of the factors which slowed down the formation of capital in Germany over the years 1895-96 to 1911-12 ('Zur Frage von Kapitalbildung und Kapitalbedarf in Deutschland', Festschrift fur Lujo Brentano, Munchen-Leipzig, 1916, p389).

12. The expansion of share capital (p372)

Among the factors that counteract the breakdown Marx includes the fact that a progressively larger part of social capital takes the form of share capital. 'These capitals, although invested in large productive enterprises, yield only greater or smaller amounts of interest, so-called "dividends", once costs have been deducted. In railways, for example. They do not, therefore, go into levelling the rate of profit, because they yield a lower than average rate of profit. If they did enter into it, the general rate of profit would fall much lower.' (Cap 3, p235. Cf. p257: 'Very large undertakings, such as railways, which have an unusually high proportion of constant capital, do not yield the average rate of profit, but only a portion of it, only an interest. Otherwise the general rate of profit would have fallen even lower'.)

In the scheme, where the entire capitalist class is treated as a single entity, the social surplus-value is divided between the portions $ac+av$ required for accumulation, and the remainder k which is available to the capitalist as consumption. Now suppose there were capitalists (owners of shares, bonds, debentures, etc) who did not consume the whole of k, but generally only a smaller portion of it, then the amount remaining for accumulation would be larger than the sums of $ac+av$. This could then form a reserve fund for purposes of accumulation, which would make it possible for accumulation to last longer than is actually the case in the scheme. The fact that many strata of capitalists are confined strictly to this normal interest, or dividend, is thus one of the reasons why the breakdown tendency operates with less force. This is also the basic reason why Germany, following the example of England where this happened much earlier, has seen a sharp increase in the bonds of the industrial societies (A Weber, Depositenbanken, 1915, p218).

13. The accumulation of capital and the problem of population. Fear of underpopulation (pp373-396)

Bauer argued that crises only stem from a temporary discrepancy between the scale of the productive apparatus and increases in population. The crisis automatically adjusts the scale of production to the size of population and is then overcome. Luxemburg produced a brilliant refutation of this harmonistic theory (Anti-critique, p107ff.). She showed that in the decades prior to the War the tempo of accumulation was more rapid than the slow rate at which the population actually increased in various countries. Bauer's observation that 'under capitalism there is a tendency for the accumulation of capital to adjust to the growth of population' (Bauer, 'Die Akkumulation des Kapitals', N. Zeit, 31 Jhrg.1913, I p871) is thus incompatible with the facts. In the fifty years from 1870 to 1920, the US population increased by around 172%, while the accumulation of capital in industry expanded by more than 2600%!

But Luxemburg's critique, which is perfectly valid against Bauer, makes the basic mistake of seeing population only as a market for capitalist commodities (cf. Anti-critique, p111: 'It is obvious that the annual increase of "mankind" is relevant for capitalism only to the extent that mankind consumes capitalist commodities'), and therefore of seeing in population a limit to the accumulation of capital only in the sense that it cannot provide a sufficient market for those commodities. My own view is diametrically opposed to both Bauer's and Luxemburg's. As against Bauer, and using his own reproduction scheme, I have shown that from a certain stage, despite increases in population, an overaccumulation of capital results from the very essence of capital accumulation, because accumulation proceeds, and must proceed, faster than population grows, so that the valorisation base grows progressively smaller in relation to the rapidly accumulating capital and finally dries up. From this it follows that—if capital succeeds in enlarging the valorisation base, or the number of workers employed, there will be a larger mass of obtainable surplus-value, and because the source of surplus-value is now larger, the breakdown tendency will be weakened. Therefore there is a perfectly comprehensible tendency for capital to employ the maximum possible number of workers. This does not in the least contradict the other tendency of capital of 'employing as little labour as possible in proportion to the invested capital' (Cap 3, p228). For 'the mass of surplus-value produced by a capital of a given size is the product of two factors: the rate of surplus-value multiplied by the number of workers...' (Cap 3, p229). From which it follows that 'with a sufficient accumulation of capital, the production of surplus-value finds its own limit in the working population, if the rate of surplus-value is given' (Cap 3, p238). So population does form a limit on accumulation, but not in the sense intended by Luxemburg—rather, population specifies the limits to valorisation. If population expands, the interval prior to absolute overaccumulation is correspondingly longer. This is

the specific sense in which Marx writes, 'If accumulation is to be a steady, continuous process, then this absolute growth in population is its precondition, even if the population declines as compared with the employed capital. An increasing population thus appears as the very basis of accumulation as a continuous process' (TSV 2, p477. The same idea in Cap 1, p418, p422: 'With a given length of the working day...the mass of surplus-value can be increased only by increasing the number of workers, ie, the size of the working population. The growth of population here forms the mathematical limit to the production of surplus-value by the total social capital.'). The tendency to employ the largest possible number of productive workers is already contained in the very concept of capital as a production of surplus-value and surplus labour (cf. Cap 3, p258, p294).

Thus Oppenheimer's criticism that Marx had to admit that despite the overall displacement of workers, their total number grows, is really quite unfounded and meaningless. In fact, capital accumulation is only possible if it succeeds in creating an expanded valorisation base for the growing capital. For example, at the low degree of accumulation which survived in Germany down to the end of the 1880s, the nascent large-scale industry failed to absorb the entire working population, and emigration became necessary to contain this situation. Over 1871-80 some 622 914 persons emigrated abroad from the country. In 1881-90 this number rose to 1 342 423. But with the rapid upsurge of industrialisation and the accelerated tempo of accumulation in the 90s, emigration ceased and even gave way to immigration from Poland and Italy into the industrial areas of the West. Only the growing absorption of these additional labour-powers could provide the adequate basis for producing surplus-value required for the valorisation of the expanded capital. Natural increases in urban population and migration from the countryside were not sufficient, despite continuous increases in the intensity of labour which meant that the mass of exploited labour was growing faster than the number of exploited workers. A shortage of labour-power actually persisted despite the recruitment of new workers and the re-absorption of workers displaced by the increasing mechanisation of work processes and rising organic composition of capital. After the 1907 crisis, capital was compelled to create an expanded valorisation base by intensifying the incorporation of women workers, which had the additional advantage of being cheaper. And from now on this became permanent. In a penetrating account of the German economy, Feiler (Die Konjunktur-Periode 1907-1913 in Deutschland, Jena 1914, p86) tells us, 'It became increasingly more clear that the rapid expansion of female labour which had characterised the depression years of 1908 and 1909 was not some passing phenomenon that would vanish once the rate of employment restabilised. It survived the depression years into the boom. The number of women workers continued to rise. In the five years from 1905 to 1910...the number increased by a full 33%! And this trend only intensified in the years that followed. The number of women employed in factories and offices increased much more rapidly than the number of men. This was a revolution pure and simple....At the end of 1913 there were as many employed women in Germany as employed men...' By 1925 the total number of such workers and employees accounted for 51.3% of the entire German population (Wirtschaft und Statistik, 1927, p447).

However, it is clear that not much more can be drawn out of the disposable mass of labour-power. One cannot induct children and old people into the productive process. The reservoir of human labour is running dry. Disturbed by the threat this poses to further economic expansion, the Institut fur Konjunkturforschung consoles itself with the idea that 'an increasing rationalisation of factory work and greater mechanisation will make it possible to enlarge productive capacity without having to incorporate new labour-powers. The last decade has shown that a very high percentage of the recently employed have found jobs in the distribution of goods, not their production' ('Bevolkerungs entwicklung und Wirtschaft', Vierteljahrsheften. 3 Jhrg., 1928). They simply forget that values and consequently also surplus-value can only be created in the 'production of goods'. If there is a declining inflow of labour into production, the source of additional surplus-value is restricted. This only means an intensified struggle on the world market in search of the sources of additional surplus-value required for the valorisation of the expanded capital.

But even in countries where population is expanding, the danger of overaccumulation is inevitable. Given a rising organic composition of capital whose rate of increase is accelerating, every increase in the number of workers implies only a temporary weakening of the breakdown, not its final overcoming. From the fact that constant capital expands much more rapidly than population, it must follow that after a more or less long period of accumulation a point must come at which the given population is not enough to valorise the swollen mass of capital. At this point capital begins to press against the extreme bound of valorisation. Population begins to form the limit to the accumulation of capital, not because the consumption base of capital is too narrow, but because the valorisation base is not sufficient. Due to insufficient valorisation, ie, due to the overaccumulation of capital, a reserve army is created and there is chronic unemployment. Yet this is not employment due to machinery, but unemployment that flows from the accumulation of capital. A working population which is scarce generates a working population which is surplus!

So it is not difficult to see why the question of population should have changed so rapidly since Malthus' time. The basic contrast between our epoch and that of Malthus lies in the difference between the slow tempo of accumulation characteristic of early capitalism (hence a reserve army due to insufficient accumulation) and the accelerated tempo of accumulation characteristic of developed capitalism (hence a reserve army due to overaccumulation). This explains the preoccupations of bourgeois writers in both France and Germany as to whether the future accumulation of capital will find adequate reserves of labour-power at its disposal. The modern bourgeois economist is characterised by his dread of underpopulation (eg, Sombart, Der moderne Kapitalismus, III/2, 1927, p1014). On the other hand, if one tries to argue that capitalism needn't take this threat too seriously, because there are still hundreds of millions of people in the enormous continents of Asia and Africa who

could satisfy capital's insatiable appetite for alien labour, the point is not whether or not there are large masses of people in this or that part of the world, but whether they are available where capitalism needs them. If we look at the thing this way, then colonial capitalism and imperialism are precisely characterised by a shortage of labour-power, whether one is dealing with Australia or Asia, with Africa or South America. Whereas in the advanced capitalist countries increasingly larger masses of workers are being forced down into the ranks of the reserve army, even if only periodically, colonial capitalism is basically struggling with problems due to a shortage of workers.

It would be quite superfluous to go into all the material available from various parts of the world. I shall only take a few examples. 'The future of Australia depends completely on the question of immigration', one report says (Natural Resources, Cd.7171, p310). Australia is in no sense an important 'non-capitalist market'. Her value and importance lie in her production. Next to Argentina, Australia is the world's most important producer of wool. Broken Hill District alone supplies around 20% of the world's total production of zinc. The copper mines of Mount Morgan are among the world's largest. The immigration of cheap labour-power has therefore always played an important role in the various colonisation projects relating to Australia, starting with the famous system devised by Wakefield, an 'economist and businessman' (A Metin, Le socialisme san doctrines. La question agraire et la question ouvriere en Australie et Nouvelle-Zellandie, Paris 1901, pp7-8) who started his own companies in Adelaide, South Australia and Wellington by importing impoverished immigrant workers whose fares were paid by him.

This drive for labour-power has persisted down till today. 'Australia's production could be increased significantly if coloured workers were allowed jobs on the (sugar) plantations of Queensland' (Pember-Reeves, State Experiments in Australia and New Zealand, London 1902). But here capital runs up against the resistance of the white working class which is dead against the immigration of coloured workers. Dressler tries to whitewash this fear of competition from immigrant labour by saying that in the long run the white workers or Europeans would leave the unhealthy jobs to immigrant workers and would have to take on supervisory functions (Der europaische Schiffahrts-verkehr nach Australien, Munchen, 1915, p3). And still as recently as 1925 one hears that 'in Australia there is an absolute shortage of labour-power' (Hess, 'Die neueste Entwicklung der Wollindustrie in den ubersceischen Wollexportlandem', Weltwirt. Archiv, Bd.22, 1925, p138).

And this picture is true of all the colonial countries. It is true of the South African mines, the cocoa plantations of Sao Tome, the copper districts of Katanga, the cotton fields of French Cameroon and Equatorial Africa, the sugar plantations of the Dominican Republic or Guyana, the rubber plantations of Sumatra and Borneo. 'In large parts of Africa', according to a report in the Berlin stock-exchange paper, 'the black population...is being pushed back into increasingly smaller reservations...in Kenya around five million acres have been reserved for settlement by whites.' In this way, 'increasingly greater masses of blacks are compelled to sell their labour-power to European entrepeneurs at hunger wages.' In Sumatra and Borneo, whatever little labour there is prefers to work on the rubber plantations of the native peasantry than on the large-scale plantations owned by the big European capitalists, who literally treat them like animals.

When Marx described the gruesome exploitation of the English working class in Capital, bourgeois economists called it a 'one-sided' picture and tried their best to show that the conditions described were characteristic only of the early stages of industrial development, and were bound to be superceded by the gradual progress of social reforms. Yet Marx's description of the conditions of the English working class of the early 19th century was only an empirical illustration of tendencies which Marx had established through a theoretical analysis of the 'nature of capital'. With the introduction and growth of fixed capital, its rapid turnover becomes imperative to ward off the consequences of its eventual devaluation and so on: hence a tendency to prolong the working day. 'Capitalist production therefore drives, by its inherent nature, towards the appropriation of labour throughout the whole of the 24 hours in the day' (Cap I, p367). Restrained in its wolf-like hunger for alien labour, West European capital celebrates even more unbridled orgies of exploitation in the territories recently opened up to capitalist production. The shameless character of capital's exploitation of the labour of women and children is repeated here on an enormously magnified scale. And the immense squandering of human life that follows only intensifies the shortage of labour.

Part Two

Restoring profitability through world market domination. The economic function of imperialism (p416-421)

Among the several simplifying assumptions which underlie Marx's analysis of the reproduction process is the assumption that the capitalist mechanism is describable as an isolated entity without any external relationships. 'Bringing foreign trade into an analysis of the value of the product annually reproduced can only confuse matters, without establishing any new moment, either for the problem or for its solution. Here we completely abstract from it' (Cap 2, p546). Yet Marx himself repeatedly underlined the colossal importance of foreign trade to the development of capitalism, and earlier, in 1859, he was even proposing to cover the 'world market' as one of the six books which he was going to write. Although the structure of the work was later changed, its object of inquiry remained basically the same, and in Capital we find 'the creation of the world market' listed as one of the 'three cardinal facts of capitalist production' (Cap 3, p261). This is why Marx writes, 'Capitalist production never exists without foreign trade' (Cap 2, p546). 'It is only foreign trade, the evolution of the market into a world market, which develops money into world money and abstract labour into social labour....Capitalist production is founded on value or on the development of the labour contained in products as social labour. But this is only possible on the basis of foreign trade and of the world market. The latter is both precondition and result of capitalist production' (TSV 3, p253 t.m.). So what scientific value can there be in a theoretical system which abstracts from the decisively important factor of foreign trade?

People have tried to escape the problem by postulating a 'gap' in Marx's system, with the argument that after all Capital is an unfinished work. So Parvus in 1901: the founders of scientific socialism 'died much too early' to leave us any analysis of trade policy (Parvus, 'Die Handelspolitik und die Doktrin', N Zeit, 19 Jahrg I, p587). Recently, A Meusel has tried to 'deepen' this conception. Marx was naturally less interested in problems of foreign trade and therefore never followed up these parts of the system (Meusel, 'Das Problem der ausseren Handelspolitik bei F List und K Marx', Weltwirts. Archiv, Bd.27, 1928, I, p77ff.). According to Meusel, this lack of interest is basically due to the fact that the only significant foreign trade controversy which Marx lived to see, the struggle for the abolition of the Corn Laws, appeared to be a conflict between the landed aristocracy and the industrial middle class. 'It was easy to suppose that the working class had no immediate strong interest of its own in policies relating to foreign trade' (p79). This absolute distortion explains why Meusel simply cannot grasp the tremendous importance of foreign trade in Marx's work, even though this is repeatedly and emphatically drawn out in Capital and Theories of Surplus-Value. Luxemburg also starts from the conception that Marx ignored foreign trade in his system, that 'Marx himself explicitly states time and again that he aims at presenting the process of accumulation of the aggregate capital in a society consisting solely of capitalists and workers' (Accumulation of Capital, pp330-331). Luxemburg herself could only explain this by postulating a gap in Marx's work, supposedly due to the fact that 'this second volume is not a finished whole but a manuscript that stops short half way through' (Accumulation, p165f). Luxemburg then constructs a theory to fill in the so-called 'gap'. Obviously this is a convenient way of disposing of theoretical problems, but it is also obvious that it shatters the underlying unity of the system and creates a hundred new problems. (At any rate, it is quite characteristic that all opponents of Marxism accept Luxemburg's critique with great jubilation because it entails conceding the defective character of Marx's system on a crucial point. Eg, there is A Salz who praises Luxemburg and says that Marx proceeded from a pure fiction in assessing the future and possibilities of capitalism. 'Kapital, Kapitalformen', Grundris. d. Sozialok. IV/I, 1925, p218f.)

What Luxemburg sees only as a 'gap' in Marx's system is then transformed by Sternberg into its basic limitation. Here Marx turns out to be a builder of completely abstract systems which were bound to lead to untenable conclusions insofar as they ignored the basic aspects of reality. 'Marx analysed capitalism on an assumption that has never corresponded with reality, viz. that there is no non-capitalist sector' (Sternberg, Der Imperialismus, 1926, p303). 'Such an analysis works with assumptions which remain unproved, more than that, assumptions whose realisation(!) is improbable' (p301). Whereas Luxemburg at least regarded the system as a whole as a solid achievement of theory, Sternberg informs us that the whole system is a delapidated structure.

Luxemburg 'broke off too soon' in her demolition of the system. She 'failed to see that every stone of the structure is affected by the fact of the existence of a non-capitalist sector, not only the very accumulation of capital, but crisis, the industrial reserve army, wages, the workers' movement and, above all, the revolution' (p9). So all these basic questions of Marxist theory are tackled wrongly, and this is because Marx built his system on the unproven and improbable assumption that there are no non-capitalist countries.

The grotesque character of this entire exposition is quite obvious. It is the product of a whole generation of theoreticians who go straight for results without any philosophical background, without bothering to ask by what methodological means were those results established and what significance do they contain within the total structure of the system. Sternberg writes a book of over 600 pages simply to register the observation that Marx described only 'pure capitalism', isolated from external trade relations. Because Marx never ordered the various passages dealing with the function of foreign trade under capitalism into a single, structured chapter, these passages are totally ignored. Sad proof of the decline of the capacity to think theoretically.

I. The function of foreign trade under capitalism (pp422-449)

(a) The importance of foreign trade for the increasing multiplicity of use-values

The progress of capitalism increases the mass of surplus product accruing to capital. The number of human needs is unlimited and when people have enough of some products, there are always others which they can use. Towards the middle of the last century people consumed a greater variety of products than fifty years earlier, and today this variety is greater still. Foreign trade plays an important role in expanding this multiplicity of products, and here what matters is international exchange as such, regardless of whether it takes place with capitalist countries or non-capitalist ones. By increasing the multiplicity of products foreign trade has the same impact as product diversification on the home market. An increasing variety of use-values facilitates accumulation, and thus weakens the breakdown tendency. 'For example, if corn is used as raw material in the preparation of alcohol, then a new source of accumulation is opened up, because the surplus product can now be converted into new forms, can satisfy new needs and enter into a new sphere of production as one of its productive elements. The same applies if starch, etc, is prepared from corn. The sphere of exchange of these particular commodities and of all commodities is thereby expanded' (TSV 3, p445). The role ascribed here to new ways of applying a product is also one which is played by foreign trade. Capitalist production is founded on value and surplus-value. Now 'if surplus labour or surplus-value were represented only in the national surplus product, then the expansion of value for the sake of value and the drive for surplus labour would find their limit in the narrow, restricted circle of use-values embodying the value of labour. Only foreign trade develops the true nature of surplus-value as value, insofar as it develops the labour embodied in it as social labour which is now represented in an unlimited range of different use-values and in fact gives meaning to abstract wealth' (TSV 3, p253). Thus the limits on the production of surplus-value, or on accumulation, are extended, or the breakdown of capitalism is postponed.

This aspect of the exchange relationship does not exhaust the problem of foreign trade and its impact on the tendencies of capitalism. When Boudin asks, 'What should the capitalists do with this expanded mass of commodities? They cannot consume it themselves', he forgets that one is not dealing with the capacity to consume products, but with effective demand or with value-magnitudes. From the value side I have shown that the problem of breakdown by no means lies in an excess of surplus-value, but in its opposite, a lack of sufficient valorisation. Therefore we have to examine foreign trade from the aspect of its impact on valorisation.

(b) Expansion of the market as a means of reducing the costs of production and circulation

To understand why foreign trade and market expansion are important, we do not need to fall back on the metaphysical theory of 'realisation of the surplus-value'. Their importance is somewhat more obvious. 'The scale of operations in territorial terms (die Grosse des Wirtschaftsgebietes) has always been of enormous importance to the development of capitalist production. This is what determines the size of the individual firm, the level of its costs, the degree of specialisation within its plants, which is likewise related to costs. The larger the scale of operations, territorially, the easier it is to shift the location of industries to places with the best natural conditions or the highest productivity of labour. The larger the scale, the more diversified the production, and the more likely it is that the different branches of industry supplement one another and that one saves in transport costs related to imports' (R Hilferding, Das Finanzkapital, p390. See also Bauer, Die Nationalitatenfrage und die Sozial-demokratie, Wien 1924, p178). Due to mass production, English industry, which was the 'workshop of the world' down to the 1870s, could carry through a division of labour, and thus increases in productivity and cost-savings, to a level that was unattainable outside England for decades to come (Schulze-Gavernitz, Der Grossbetriebe, Leipzig, 1892, p98).

Whereas weaving and spinning were originally combined, later they were separated. This resulted in geographical specialisation. Burnley made the traditional calico prints, Blackburn clothed India and China (the so-called 'dhooties', cloth), Preston manufactured fine cottons. The factory districts lying close to Manchester concentrated their speciality on more complicated fabrics, like the cotton velvets of Oldham and high quality calicoes of Ashton and Glossop. Only mass production of this kind made possible the construction of specialised machines for individual operations, and this meant important savings in investment and enterprise costs.

Manchester herself, previously the centre of the industry, more and more specialised as the exclusive base of the export trade. In the basements of her commercial firms, which were often several stories underground, steam engines and hydraulic presses were reducing cotton yarns and fabrics to half their thickness.

The basic reason generally given for this local centralisation of industry is that a highly skilled workforce could only be found in places that were entirely given over to a single industry (Schulze-Gavernitz, p97).

Obviously such a high level of production specialisation meant huge cost-reductions, due to savings in non-productive expenses, work-interruptions, etc, and to increases in productivity and the intensity of labour. Economies in production are further supplemented by economies in the sphere of circulation—the number of importers, brokers and so on is compressed to the absolute minimum, an intricate system of transport connects supply bases to centres of production, special credit organisations emerge with their own terms of payment, etc, etc. In short, all of this enhances valorisation, by reducing the costs of investment, manufacturing and marketing. This is what accounted for the competitive superiority of English capitalism. The compulsion to produce the greatest possible surplus-value is enough to account for the enormous importance of market-expansion and struggles for markets,

and we do not need to fall back on Luxemburg's theory of the 'realisation' of surplus-value. On the contrary, it is quite irrelevant whether the markets in question are capitalist or non-capitalist, what matters is mass outlets, therefore mass production and the specialisation and rationalisation of work and of circulation which mass production makes possible. Here it makes no difference whether German chemicals are exported to England or to China.

Finally, the specialisation and geographical concentration of production in specific lines contributes to the training of a highly efficient workforce, and therefore to increases in the skill and intensity of labour. As one German worker cited by Schulze-Gavernitz says, German workers are less efficient than English workers due to the lack of a tradition, in the sense that in England workers have acquired a basic experience in handling machinery through specialised work lasting over generations, so that there 3 to 4 workers can operate 1000 spindles, whereas in Germany at that time it needed 6 to 10 workers (Schulze-Gavernitz, p109).

To all this we should add the fact that France, for example, which possessed an old and flourishing silk industry at Lyons, remained totally dependent on England for her imports of raw silk from China and Japan. All attempts to procure Chinese silk directly, with the help of French banks, failed because England was able to buy the silk much more cheaply due to her extensive trade connections and lower freight costs (B Mehrens, Die Entstchung und Entwicklung der grossen franzosischen Kreditinstitute, 1911). Again, despite the double freight costs involved in importing the raw material all the way from Australia and shipping the final product back there, English woollens remain cheaper and more competitive than Australian woollens, because the size of the Australian market forces the individual units there to diversify instead of specialising (F Hess, art. cit.). Domestic prices are higher than world market prices, sales are confined exclusively to the home market and this means that protection is necessary. The same holds vis-a-vis the woollen industries of La Plata (Argentina) and South Africa, although wool is directly available there and this dispenses with double transport costs.

All this explains why the USA has emerged as an increasingly more dangerous competitor on the world market. The enormous advantages of a large and integrated scale of operations, in territorial terms, gives American industry completely different possibilities of expansion than those available in Europe. In America it was possible to push industrial specialisation to its highest levels and to substitute mechanised mass production
a special for specialised human labour, ie, to build

Mass production and mass sales have always been basic objectives of capitalist production. But they become matters of life and death for capitalism only in the late stage of capital accumulation, when a purely domestic valorisation of the gigantic mass of capital becomes more and more difficult—because only mass production makes possible the various advantages of specialisation, and, therefore, a level of competitive superiority on the world market. Politically, this also explains the triumphant domination of the 'large-scale' enterprise over against the 'small' and 'medium' enterprises. It explains the tendency to form trans-national empires in place of the nation state. The categories in terms of which we think today are no longer those of nation states, but of entire continents.

(c) Foreign trade and the sale of commodities at prices of production deviating from values

Among the simplifying assumptions of the reproduction scheme an especially important role is played by the assumption that commodities exchange at value, ie, that their prices coincide with their values. This is only possible if one abstracts from competition and supposes that all that happens in circulation is that one commodity of a given value is exchanged against another of the same value. But in reality commodities do not exchange at value. 'In the actual process of circulation the metamorphoses described in Vol 2 do not proceed simply in this form, they are themselves forms of the real movement of competition' (Cap 3, p43). It follows that the assumption of commodities exchanging at value has to be dropped and the conclusions established on that basis further modified.

But what sort of modifications are required? So far this problem has always been examined from the standpoint of inter-capitalist transfers of value, ie, total price remains equal to total value, or is determined by the magnitude of social labour expended (Hilferding, Bohm-Bawerks Marx-kritik, p25, Finanzkapital, p289). Neither Hilferding nor anyone else ever systematically tackled the problem of the deviation of prices from values in international exchange, or related this problem to the overall structure of Marx's system. This is because Hilferding and the followers of Kautsky were in no position to grasp the elements of novelty in Marx's treatment of this problem, as long as they were mainly interested in rejecting the theory of breakdown. This likewise precluded any deeper analysis of the function of foreign trade under capitalism.

If, like Ricardo, one supposes that the law of value—the sale of commodities at value—is directly applicable to international trade, then the question of foreign trade has no bearing on the problem of value and value accumulation. For on this assumption foreign trade simply mediates the exchange of use-values, while the magnitude of value and profit remains unaltered. As against Ricardo, however, Marx draws out the role of competition in international, inter-state exchange.

If one looks only at the sphere of production, then it follows that the economically backward countries have a higher rate of profit, due to their lower organic composition of capital, than the advanced countries, even though the rate of surplus-value is much higher in the latter and increases even more with the general development of capitalism and of the productivity of labour. Suppose the rate of surplus-value were 100% in Europe and only 25% in Asia, then differences in the organic composition of capital would lead to the following result (Cap 3, p148).

In Asia

$16c + 84v + 21s = 121$, rate of profit $21/100 = 21\%$

In Europe

84c + 16v + 16s = 116, rate of profit 16/100 = 16%

However, because international trade is not based on an exchange of equivalents, because here, as on the national market, there is a tendency for rates of profit to be equalised, the commodities of the advanced capitalist country with the higher organic composition will be sold at prices of production that are always higher than value, and conversely, those of the backward country at prices of production that are generally lower than value. This would mean the formation of an average rate of profit of 18.5%, so that Europe will be selling her commodities for a price of 118.5 instead of 116. In this way circulation on the world market involves transfers of surplus-value from the less developed to the more devloped capitalist countries since the distribution of surplus-value is determined not by the number of workers employed but by the size of the functioning capital.

This is why Marx says, 'It follows that foreign trade affects the rate of profit, regardless of its impact on wages in terms of cheapening the means of subsistence....If economists like Ricardo failed to understand the influence of world trade on the rate of profit, this is because so far the nature of the rate of profit was itself scarcely understood' (Cap 3, p106). Elsewhere, 'Ricardo is therefore wrong when he says, in opposition to Smith, "Any change from one foreign trade to another, or from home to foreign trade, cannot, in my opinion, affect the rate of profit." Because of his completely wrong conception of the rate of profit, Ricardo misunderstands the influence of foreign trade....He does not see how enormously important it is for England, for example, to secure raw materials for industry and that in this case the rate of profit rises, even if prices fall' (TSV 2, p437). This is because, through foreign trade, 'three days of labour of one country can be exchanged against one of another country. Here the law of value undergoes basic modifications....In this case the richer country exploits the poorer one, even if the latter gains through exchange' (TSV 3, pp105-106).

Thus price formation on the world market is governed by the same principles that apply under a conceptually isolated capitalism. But the latter is simply a theoretical model, and only the world market as a unity of specific national economies is something real and concrete, because today the prices of the most important raw materials and final products are determined internationally, by world economy and we are no longer confronted by a national level of prices, but a level determined on the world market. In a conceptually isolated capitalism entrepreneurs with an above-average technology make a 'surplus profit' when they sell their commodities at socially average prices; likewise, on the world market, the technologically advanced countries make a 'surplus profit' at the cost of the technologically and economically backward ones. Marx repeatedly draws out the international effects of the law of value—eg, he says, 'most agricultural nations are forced to sell their products below value, whereas in countries with advanced capitalist production the agricultural product rises to its value' (TSV 2, p475). In ch.22 of Volume One, where he deals with 'national differences in wages', he writes, '...the law of value is even more modified in its international application by the fact that, on the world market, labour which is more productive also counts as more intensive, as long as the more productive nation is not compelled by competition to lower the selling price of its commodities to the level of their value' (Cap 1, p702). With the development of capitalist production in a given country, the national intensity and productivity of labour rise above the international average level. 'The different quantities of commodities of the same kind, produced in different countries in the same working time, have, therefore, unequal international values, which are expressed in different prices, ie, in sums of money varying according to international values. The relative value of money will therefore be less in the nation with a more developed capitalist mode of production, than in the nation with a less developed capitalism' (id.). Again, in ch.17, 'the intensity of labour would be still different in different countries and would modify the application of the law of value to the working days of different nations. The more intensive working day of one nation would be represented by a greater sum of money than the less intensive day of another nation' (Cap 1, p662). Finally, in Vol. Three, 'Capitals invested in foreign trade can yield a higher rate of profit, because here the competition is with commodities produced in other countries where the conditions of production are worse, so that the more advanced country sells its goods above their value, even if more cheaply than its competitors. Insofar as the labour of the more advanced country is here valorised as labour of a higher specific weight, the rate of profit rises....The country that is better off recovers more labour in exchange for less labour....On the other hand, as regards capitals invested in colonies, etc, they can yield higher rates of profit for the simple reason that the rate of profit there is higher due to their more backward development, and likewise the rate of exploitation of labour, because slaves, coolies, etc, are used' (Cap 3, pp232-233).

In all the examples listed above the gain of the capitalistically more advanced countries consists in a transfer of profit from the less developed countries, and it is quite irrelevant whether the latter are capitalist or non-capitalist. For here it is not a question of the 'realisation' of surplus-value, but of additional surplus-value which is obtained through competition on the world market, by means of an unequal exchange, or exchange of non-equivalents.

The enormous significance of this transfer-process and the real function of imperialist expansion are only explicable in terms of the theory of breakdown developed earlier. I have already shown that capitalism does not suffer from a hyperproduction of surplus-value, but on the contrary from insufficient valorisation. This produces a tendency towards breakdown which is expressed in periodic crises and which in the further course of accumulation necessarily leads to a final collapse (muss...schliesslich zum Zusammenbruch fuhren).

Under these circumstances, any injection of surplus-value by means of foreign trade would have to raise the rate of profit and reduce the severity of the breakdown tendency. According to Luxemburg, the magnitude of surplus-value is not affected in international exchange, it is only 'realised'. According to the conception I have developed and which, I

believe, is also Marx's conception, the original surplus-value expands by means of transfers from abroad. At advanced stages of accumulation, when it becomes more and more difficult to valorise the enormously accumulated capital, such transfers become a matter of life and death for capitalism. This explains the virulence of imperialist expansion in the late stage of capital accumulation. Now because it makes no difference whether the exploited countries are capitalist or non-capitalist (agrarian) countries, and because the latter can in turn exploit other less developed countries by means of foriegn trade, in its late stage, accumulation of capital entails an intensified competition of all capitalist countries on the world market. For the drive to neutralise the breakdown tendency through increased valorisation, or what is the same thing, the drive to prolong the life-span of a given capitalist state, only follows at the cost of other capitalist states. Apart from intensified wage cuts and sharper attacks on the working class, the accumulation of capital produces an ever more destructive competitive struggle among capitalist states, a continuous revolutionisation of technology, 'rationalisation', Taylorisation or Fordisation of the economy—all of which is intended to create the kind of technology and organisation that can preserve competitive superiority on the world market. On the other side, accumulation intensifies the drift to protectionism in the economically backward countries.

Kautsky sees the essence of imperialism in a striving to conquer the non-capitalist agrarian parts of the world and therefore sees imperialism itself as only an episode in the history of capitalism that will pass with the industrialisation of those parts of the world. (In an essay 'The future of capitalism', Die Gesellschaft, 5 Jhrg, 1928, G Bienstock takes up this idea, and says, 'Imperialism is not one of the problems of contemporary world politics....It seems to me that we are not living in an epoch of world wars and world revolutions.' 'Imperialism is becoming progressively more antiquated, it belongs to past epochs, because the world situation out of which it arose has changed more and more', p421.) This conception is totally false. It is only possible if one understands imperialism in the specific form that Luxemburg gives to it in her theory of the role of non-capitalist countries. Imperialist antagonisms subsist even among the capitalist states in their relation to one another. Far from being merely an 'episode' that belongs to the past, imperialism is rooted in the essence of capitalism at advanced stages of accumulation. Imperialist tendencies become stronger in the course of accumulation, and only the overthrow of capitalism will abolish them altogether.

The argument developed here shows how foreign trade can function as a means of surmounting crises. It is true that commodities are not exported only in periods of crisis or depression. But it is a fact that in boom periods when the level of domestic prices is high and shows, an upward trend, accumulation in individual spheres of industry creates a market for industry as a whole, and industry works mainly for the national market. Foreign trade really gains importance only in periods of internal saturation, ie, when valorisation disappears due to overaccumulation and there is a declining demand for investment goods. Forcing exports in a period of depression acts as a valve for overproduction on the domestic market. In Germany after the boom year of 1927, one could see a tapering off early in 1928. Although a depression has still to come, in the first four months of 1928 there was a retreat in domestic demand practically all along the line. At the same time, however, exports provided a compensation. From January to April 1928 exports were around 18.5% higher than in the corresponding part of the previous year. Thus here we have a means of partially offsetting a crisis of valorisation in the domestic economy.

(d) The international character of economic cycles

Far from signifying the impending doom of European capitalism, as Hildebrand (Die Erschutterung der Industrieherrschaft und des Industriesozialismus, Jena, 1910) and others forecast, the industrialisation of the late-comers signifies an expansion of world exports. Contrary to Luxemburg's theory, the backward countries gain in importance as markets for advanced capitalism precisely to the degree that they shed their 'non-capitalist' character, or to the degree that they industrialise. Today the industrialising colonies, while the advanced capitalist countries are the best markets. (Germany's biggest market was England, and in 1913, Western Europe accounted for as much as 52.2% of Germany's total exports.) In fact, the notion that the backward countries still mainly dependent on agriculture could produce enough commodities to pay for the colossal wealth of the capitalist nations is something bordering on absurdity.

Precisely the fact that the more industrialised a country is, the greater its share of industrial imports, or the fact that the industrialised nations form the best markets for each other, helps one to explain a phenomenon which Luxemburg's theory has simply no explanation for. I mean the international character of the economic cycle. An upswing in production goes together with rising imports of raw materials, semi-finished goods, etc. In periods of boom net imports of raw materials and semi-finished goods exceeds net exports of finished commodities, while the ratio is reversed in periods of depression. Thus there is a strong correlation between booms and raw material imports.

A boom in one country is communicated to other countries through the medium of commodity imports. In this way the rhythm of boom movements becomes progressively synchronised, even if international differences in the chronology of the business cycle persist. In fact, even prior to the War one saw the gradual formation of a parallelism in the economic cycles of the most important world market countries, and the crises of 1900, 1907 and 1913 all had an international character. This parallelism was then interrupted by the War and the breaking off of mutual economic ties, but after the War it started to crystallise once more.

Over 1925-27 Germany's imports were (in billions of mark):

	1925	1926	1927
Raw materials & semi-fininished goods	7.0	5.3	7.7
Finished goods	1.3	1.0	1.8

The minor boom of 1925 was followed by the depression of 1926 when the total volume of imports declined steeply; in the boom year of 1927 imports exceeded the level of 1925. It is not difficult to see that such a rapid increase of German imports, by some 3.2 billion mark, is bound to have an invigorating effect on the world market. As long as it is sufficiently strong, the boom in one single country can communicate itself to all its trade partners. Eg, the German boom of 1927 drew along with it all the neighbouring countries of central and eastern Europe which are bound by close economic ties to Germany. In that year there was a more or less strong revival in Poland, Czechoslovakia, Austria, Hungary, Switzerland, Belgium, Netherlands, Sweden and Finland (Vierteljahrshefte...2 Jhrg. 1927. Heft 3, p65) In periods of depression things are reversed. Imports decline and a chain repercussion starts as orders are cancelled.

2. Foreign trade and world monopolies. The struggle for world raw materials (pp450-490)

The tremendous importance of cheap raw materials to the level of the rate of profit and thus to the valorisation of capital was first established 'through practical experience'. However, the classical economists found it difficult to explain the fact theoretically, due to their confusion of the rate of profit with the rate of surplus-value. Marx was the first to establish the connection clearly through his own exposition of the laws that govern the rate of profit. 'Since the rate of profit is s/C=s/(c+v), it is clear that anything which affects the magnitude of c, and therefore of C, must likewise affect the rate of profit, even if s and v, and their interrelations, remain constant. Now raw materials form one of the basic components of constant capital....If the price of raw materials falls...(then) the rate of profit rises. Other things being equal, the rate of profit and the price of raw materials vary in inverse proportions. This shows among other things how important cheap raw materials are for the industrial countries' (Cap 3, p105). Polemicising against Ricardo, Marx emphasises the importance of world trade in this respect. 'The point is that (foreign trade) affects the price of raw materials and auxiliary substances that go into industry or agriculture' (p106).

Marx further shows that not only are raw materials important to the level of profitability, but their importance is constantly growing with the development of capitalist industry. For 'the mass and value of the machinery employed grow as the productivity of labour rises, but not in the same proportion as productivity itself....Thus in branches of industry that use raw materials...increases in the productivity of labour are expressed precisely in the rate at which a larger quantity of raw materials absorbs a specific quantity of labour, thus in the increasing quantity of raw materials converted in, say, one hour into products....Thus in proportion to the increases in labour productivity, the value of raw materials comes to form an ever-increasing fraction of the value of the commodity product...in the sense that in the total product the percentage shares represented by depreciation of machinery and by the newly added labour are both continually decreasing. Hence the percentage share of value represented by raw materials shows a proportional increase, unless this is cancelled by a corresponding decline in value on the side of raw materials produced by increases in the productivity of labour in the spheres that produce them' (Cap 3, p107).

The growing importance of raw materials is also obvious in the fact that as its industrialisation advances, every capitalist country becomes increasingly dependent on raw material imports. Eg, in Germany imports of raw materials for industrial purposes (incl. semi-fabricates) increased by between 40 to 55% between the late 1880s and 1912.

A further point is that monopolistic controls in the world market are easiest to carry through in the sphere of raw materials, where the range of possible applications is very wide. Competition among the capitalist powers first exploded in the struggles to control raw material resources, because the chances of monopoly profits were greatest here. Yet this is not the only factor. Control over raw materials leads to control over industry as such. Kestner says, for example, 'Because only raw materials or means of production are susceptible to long-term monopolisation, which is generally not the case with finished products—unless raw material syndicates intervene—cartellisation necessarily shifts the economic balance in favour of heavy industry, both in terms of price formation, and in terms of the fact that the processing industries fall under the sway of the raw materials industries' (F Kestner, Der Organisationszwang...p258). The struggle for control of raw materials is thus a struggle for control over processing industries, which is itself finally reducible to the drive for additional surplus-value. Now because raw materials are only found at specific points on the globe (eg, rubber, petroleum, zinc, copper, etc), capitalism is defined by a tendency to gain access to and to dominate the actual sources of supply, and this can only take the form of a division of the world. A world monopoly in raw materials means that more surplus-value can be pumped out of the world market. For competitors who face such a monopoly, it means that the breakdown of capitalism is only intensified. In the fact of imperfect valorisation—intensified by the world monopolies of one's competitors—lies the deepest economic root of imperialism, of the incessant drive to dominate territories capitalistically and later also politically.

Perhaps the most obvious case of this is the Anglo-American struggle over oil. The struggles for petroleum in the Caucasus, Mesopotamia, and Persia are already quite well known, so I shall be brief here. Oil first became a 'burning' question for England when the discovery of the diesel-engine made it possible to substitute liquid fuel for coal in shipping. Yet the biggest reserves of crude oil and the bulk of oil production were concentrated in American hands. England saw the American monopoly as a threat to herself. Delaisi says, 'One could say that for close to a century the whole power of English trade and industry was founded on her control over coal'. Thanks to her superiority in the coal market, and especially to her excellent production of bunker coal, England could consolidate her traditional maritime dominance, because she could afford to charge cheaper rates on return-freight than her competitors. 'Thus commodities destined for England paid lower transport costs than those destined for other countries. Hence English industry enjoyed

a real premium on all overseas raw materials. This was an enormous advantage over all competitors in the struggle to win international markets' (F Delaisi, Le Petrole, Paris 1921, p40). Once shipping converted to oil, all this could change. England herself produced no petroleum. English domination over sea-transport was seriously threatened. Then there was the experience of the World War, which showed the importance of automobiles and aircraft. The decisive strategic significance of allied control over oil reserves became more and more obvious, the longer the War lasted. 'The victory of the Allies was the victory of the automobile over the locomotive'. The oil politics of the postwar period was a direct consequence of these experiences.

England had realised the implications of this situation quite early on, and already at the beginning of this century, absolutely quietly and unobtrusively, she started to acquire the reserves of oil that were still going. As against Rockefeller's American 'Standard Oil' Trust, she founded a series of her own oil trusts: 'Royal Shell' which was then expanded into 'Royal Dutch Shell', in Mexico 'Mexican Eagle', 'Anglo-Persian Oil', etc and even settled down in the USA to take on the competition of Standard Oil. By 1919 the London Times could report a speech by G Prettyman, a well-known oil expert, who, on the occasion of the inauguration of the new Anglo-Persian refinery, was quoted as saying: 'At the outbreak of the War the position was such that the British Empire with her enormous, worldwide interests controlled only 2% of world petroleum reserves....On the currently prevalant foundations and methods of work used, about which he would not like to go into detail, he feels that once some differences are settled, the British Empire should not be very far from controlling over half the world's known reserves of petroleum' (cited L Fischer, Oil Imperialism. The International Struggle for Petroleum, New York, 1926). This result could be achieved thanks to a powerful vertical concentration of the entire industry from production down to distribution, and the corresponding conglomeration of capital which could exert fantastic pressure.

The English oil industry was thus welded together into one single block which today embraces 90% of all Britain's oil interests. At the end of 1920 Anglo-Persian Oil (now British Petroleum) unified some 77 companies with a nominal capital of around 120 million pounds, and Royal Dutch Shell 50 firms with 300 million pounds. Apart from these, there were another 177 companies representing a capital of 266 million pounds. Put together these firms would thus represent a total capital of 687 million pounds, 52% of this invested in actual production, 12% in transport, 11% in refining, and 16% in trade.

What was the point of this terrific effort? Military security is only part of the answer. 'Today England no longer needs to fear the American monopoly', Delaisi writes (p58), the point being that just prior to the War England controlled all the most important coal stations, for the future it sought to control the major oil stations through a tightly organised petroleum industry. One of the basic leitmotifs of England's oil strategy was to attain a near-monopoly over the transportation of oil. How far this succeeded can be gauged from a report in The Times of March 1920, which quotes Sir Edgar Mackay as saying: 'I can say that two thirds of the fields in operation in Central and South America are in British hands....The Shell group controls interests in all the important oilfields on earth, including those in the USA, Russia, Dutch East Indies, Rumania, Egypt, Venezuela, Trinidad, British India, Ceylon, the Malay States, north and south China, Siam, the Straits Settlements and the Philippines'. The economic significance was drawn out when Mackay clearly said: 'Assuming their current curve of consumption rises further, then after 10 years the United States will have to import 500 million barrels a year which makes, even supposing a very low price of $2 per barrel, an annual expenditure of 1000 million dollars, and most of that, if not all, will go into British pockets'.

The idea of joint international control over raw material resources has been mooted time and time again. Even the International Congress of Mineworkers which took place in August 1920 formulated a resolution calling for the creation of a central international office in the League of Nations. Such an office would not only produce a detailed inventory of all existing resouces, and gather statistics on them, it would also look after the 'distribution of fuels, minerals and other raw materials'. Such proposals have a purely utopian character. I have already shown that the antagonisms of world economy find their deepest source in the lack of valorisation which goes together with the general advance of accumulation. A shortage of surplus-value in one national economy can only be compensated at the expense of other economies. Even capitalist attempts to create joint world monopolies have ended in failure, due to the irreconcilable interest-oppositions among the various parties—as the breakdown of the English rubber control scheme (May 1928) shows. Here the conflict of interests remains the basic aspect, in the sense that the whole function of world monopolies lies in the national enrichment of some economies at the cost of others. For this reason, the increasingly frequent projects to evolve joint control and distribution schemes for raw materials remain 'pious wishes'. Marx already pointed out, with prophetic foresight, that the attempts to regulate production that are often discernible in periods of crisis vanish 'as soon as the immediate impulse is over and the general principle of competition to "buy in the cheapest market"...again reigns supreme. All ideas of a joint, comprehensive and far-sighted control over the production of raw materials—a control that is completely irreconcilable with the laws of capitalist production and which is doomed to remain a pious wish, or at best takes the exceptional form of cooperative endeavours in periods of immediate threat or total confusion—give way to faith in free competition' (Cap 3, p118 t.m.).

3. The function of capital exports under capitalism. Overaccumulation of capital and the drive for spheres of investment. The role of speculation in capitalism

(a) Earlier presentations of the question (pp490-516)

From a scientific point of view, one has to explain why capital is exported, and what role is played by export of capital in the productive mechanism of capitalist economy.

Sombart is the best example of the totally superficial way

in which these problems are handled in the prevailing theories. He tells us, 'No one can doubt(!) that economic imperialism basically means that by enlarging their sphere of political influence, the capitalist powers are enabled to expand the sphere of investment for their superfluous capital' (Der moderne Kapitalismus. Bd.III/I, 1927 p71). To start with, the relation between capital expansion and the drive for power is wrongly described, insofar as Sombart makes the latter a precondition of the former. In fact, the opposite is the case—capital expansion, or 'peaceful financial penetration', penetration pacifique, is only a precursor of the political domination that follows, or 'Capital is the political pioneer' (A Sartorius, Das volkswirtschaftliche System der Kapitalanlage im Auslande. Berlin 1907, p51). Secondly, from a purely economic point of view, Sombart does not explain why there is such a thing as the expansion of capital to foreign territories. This is something self-evident for him. What one has to explain theoretically is simply presupposed as obvious without any analysis or proof. Why are capitals not invested in the home country itself? Because they are 'superfluous' there? But what does superfluous mean? Under what conditions can a capital become superfluous? Sombart simply uses catchwords, without the slightest attempt to clarify things scientifically. Now precisely this issue has been debated for a whole century, ever since Ricardo argued that 'when merchants engage their capitals in foreign trade,...it is always from choice, and never from necessity: it is because in that trade their profits will be somewhat greater' (Principles, ch 21).

In his book on imperialism, JA Hobson maintains that foreign investments form 'the most important factor in the economics of imperialism' and are becoming increasingly important (Imperialism, London 1905, p48). 'Aggressive imperialism...which is fraught with such grave incalculable peril to the citizen, is a source of great gain to the investor who cannot find at home the profitable use he seeks for his capital, and insists that his Government should help him to profitable and secure investments abroad' (p50). But why are profitable investments not to be found at home? Hobson does not refer to this decisive question even once, and in general his study, which is a valuable descriptive work, evades all theoretical issues.

Even in Sartorius v. Walterhausen (op cit) there is no answer to this question. He merely states that 'in today's world economy the agrarian countries are net importers of capital, the industrialised countries net exporters' (p52). But why? 'However, even the highly developed countries', Sartorius adds, 'stand in debtor-creditor relationships to one another' (p52). Obviously the agrarian/industrialised distinction cannot account for export of capital. In that case, what is the driving force behind this? Occasionally, Sartorius refers to 'economic saturation', a superfluity of the available capital in relation to investment possibilities. But this is not actually explained. Sartorius appears to have a vague feeling that such a state of saturation, hence export of capital, is linked to a relatively advanced stage of capitalist development. But Sartorius stays at this purely empirical level.

The treatment of this problem by Nearing and Freeman (Dollar-Diplomatie. Eine Studie uber amerikanischen Imperialismus, Berlin 1927, p23ff) is just as unsatisfying. They agree that the industrialised countries of Europe became exporters of capital only at a specific stage in their development. The same is true of America. 'The United States also reached this stage at the start of the present century'. The trend was then accelerated by the war—a whole process of development which might otherwise have taken much longer, was compacted into a single decade by the 'events' of the war. But what were these 'events'? The war enormously speeded up the transformation of the US from the position of a debtor to one of a creditor. The US became a capital-exporting nation 'and was bound to remain so as long as there was surplus capital looking for investment' (p24ff.). But the authors do not show why such a surplus emerges, or why it cannot find investment in the domestic economy.

But even in Marxist writings one searches in vain for any explanation of the specific function of capital exports in the capitalist system. Marxists have simply described the surface appearances and made no attempt to build these into Marx's overall system. So Varga says, 'The importance of capital exports to monopoly capitalism was analysed in detail(!) by Lenin in his Imperialism; hardly anything new can be added' (Varga, Die Wirtschaft der Niedergangsperiode des Kapitalismus nach der Stabilisierung', Hamburg, Berlin 1928, p56). Actually Varga simply casts aside any attempt to analyse the problem theoretically. In his essay 'Capital export in world economy' (Die Internationale, Berlin 1927, Heft 12, p363) he produces facts about the volume and direction of international capital flows, but there is not a trace of any theoretical perception of the problem. 'The rate of profit', he says, 'regulates not only the influx of capital into individual branches of industry, but also its geographical migrations. Capital is invested abroad whenever there are prospects of obtaining a higher rate of profit'—a conclusion which is hardly original.

In fact, Varga fails to understand the real dimensions of the question when he goes on to say, 'Capital is exported not because it is absolutely impossible for it to accumulate domestically, without "thrusts into non-capitalist markets", but because there is the prospect of higher profit elsewhere' (loc.cit.). In other words, Varga starts from the false assumption that whatever its total amount, capital can always find an unlimited range of investment possibilities at home, and he overlooks the simple fact that in denying the possibility of an overabundance of capital, he simultaneously denies the possibility of an overproduction of commodities; moreover, Varga imagines any argument that there are definite limits to the accumulation of capital and that, therefore, capital export necessarily follows, is incompatible with Marx's conception and can only be made from Luxemburg's position.

I shall show that Varga's conception is untenable, that it was precisely Marx who showed that there are definite limits to the volume of capital investments in any single country, and it was Marx who explained the conditions under which there arises an absolute overaccumulation of capital and therefore the compulsion to export capital abroad. Varga does not notice that his conception of unlimited investment possibilities flatly contradicts and is incompatible with any labour theory of value. Investment of capital demands

surplus-value. But surplus-value is labour, and in any given country labour is of a given magnitude: from a given working population only a definite, even if maximum, mass of surplus-labour is extortable. To suppose that capital can expand without limits is to suppose that surplus-value can likewise expand without limits, and thus independently of the size of the working population, and this only means that surplus-value does not depend on labour.

The same holds for Bukharin, word for word. What is the real cause of capitalist expansion? According to Bukharin, surplus profits abroad. But Bukharin runs around in circles when on the one hand, he emphasises the absolute necessity for capitalist expansion and therefore imperialism, and on the other hand, maintains that capital is only exported abroad because 'concrete development' naturally takes the line of least resistance. 'Suppose there were no additional markets, this circumstance on its own would not be enough to deprive capitalism of the very basis of its existence' (Der Imperialismus, p98). But if there is no compulsion to export capital, then there is no way of understanding the economic basis of imperialism.

Sternberg thinks he has solved the problem with the ratio k/l, where k is capital and l the supply of labour. For the valorisation of capital to occur, the denominator must always be larger, ie, there must always be a surplus population of free workers; 'when the numerator becomes too large, the expansion of capital follows' (Sternberg, Der Imperialismus, p35). But what does it mean for the numerator to become 'too large'? What is our measure here? How can the limit be determined? But none of this makes any sense to Sternberg. He does not once refer to the fact that to refer to capital growing too large necessarily presupposes a certain state of technology, hence also the organic composition of capital. What may be 'too large' at a lower organic composition may not be large enough at a higher organic composition.

Secondly, what compels the capitalist to export capital? Sternberg's answer is simple: capital expansion is the most powerful factor of surplus population; moreover, by reinforcing the reserve army, it depresses the level of wages and enables a surplus-value to arise(!). The expansion of capital 'is therefore one of the strongest supports of the capitalist relation and its continuity over time' (p36), because a surplus-value can arise 'only if there is a surplus population' (p16, p585).

Export of capital is supposed to be the most powerful factor of surplus population. Yet in Germany over 1926-27 we saw the exact opposite: massive inflows of foreign capital were crucial to the general wave of rationalisation and played a major role in displacing workers or creating a surplus population. If it were simply a question of reducing the 'numerator' so as to reduce the demand for labour, then a simple transfer of capital would be enough to solve this. Eg, German capitalists can go to Canada and settle down there. But this is not an export of capital so much as a denationalisation or loss of capital. In fact, if it were simply a question of reducin 'numerator', the essential aspect of capital exports would no longer hold. As Hilferding correctly pointed out (Finanzkapital, p395) capital exports involve an export of value 'but what is fundamental here is that the surplus-value remains at the disposal of domestic capital.... Export of capital reduces the quantity of capital available domestically, but expands the national revenue by the surplus-value created'.

Sternberg tries to explain the export of capital as he does all other phenomena of capitalism, with the magic wand of vulgar economy—competition. Yet the problem is precisely to explain this and other basic phenomena in abstraction from competition and therefore from the existence of a surplus population. The point is, what compels the capitalist to export capital when there is no reserve army and labour-power is sold at its value?

Hilferding is not much better. Since he denies the possibility of a generalised overproduction of commodities, there are no limits to the investment of capital in a given country. So capital is exported only because a higher rate of profit can be expected. 'Export of capital presupposes different rates of profit. It is itself the means by which national rates of profit are equalised' (Finanzkapital, p318). The same holds for Bauer. Inequality of profit rates is the sole reason why capital is exported. 'Initially the rate of profit is higher in the more backward countries which are the targets of imperialist expansion...capital always flows to where the rate of profit is highest' (Bauer, 'Die Nationalitatenfrage und die Sozialdemokratie', Wien 1924, p470). Capital exports are thus explained in terms of the tendency for the rate of profit to equalise. But Bauer has the feeling that this explanation is quite useless when it comes to understanding modern imperialism. There has always been a tendency for rates of profit to equalise, whereas capital exports from the advanced capitalist countries started with real vigour only recently. Bauer himself says, 'The drive for new spheres of investment and new markets is as old as capitalism itself; it is as true of the capitalist city-republics of the Italian Renaissance as of England or Germany today. But the force of this tendency has increased enormously in the recent decades' (p471). How does one explain this? Ultimately Bauer has to look for an explanation of rising capital exports in the aggressive character of modern imperialism, which is precisely what has to be explained! But quite apart from this, if higher rates of profit are what account for the flow of capital to the less developed continents of Asia, Africa, etc, then it is impossible to understand why any capital should ever be invested in the industries of Europe and the USA, why their productive apparatus should be continually expanded. Why is the whole surplus-value not earmarked for export as capital? In fact, we have already seen that an average rate of profit forms on the world market. On p247 of his book Bauer knows this, but when he comes to dealing with the roots of export of capital and imperialist expansion, on p461, he forgets it, and falls back onto the banal conception that the higher rate of profit of the backward countries is the cause of capital exports. To recall something that was said earlier (p71), on the world market the technologically more advanced countries make a surplus profit at the cost of the technologically backward ones with a lower organic composition. This is what stimulates and simultaneously drives capital to keep developing technology, to force through continuous increases in the organic composition in the advanced countries. Yet this only means that as

progressively higher levels of organic composition are introduced, a field is simultaneously created for more profitable investments. However high profits may be in the colonial countries, they would appear to be higher still in the chemical and heavy industries at home, which, given their organic composition, are making surplus profits. So the question remains—why is capital exported at all? Bauer can't explain this.

On the other hand, it is not true that in countries recently opened up to capitalist production, the organic composition is always lower. If West European capitalism may have needed 150 years to evolve from the organisational form of the manufacturing period into the sophisticated world-trust, the colonial nations of Africa, Asia, etc, do not need to repeat this entire process. They take over European capital in the most mature forms it has already assumed in the advanced countries. In this way, they skip over a whole series of historical stages, with their peoples dragged straight into gold and diamond mines dominated by trustified capital with its extremely sophisticated technological and financial organisation. Eg, in Rawalpindi, in British India, there are oil refineries with a 70 km. long pipeline, in Rangoon there are tanks with a capacity of 9 million barrels, in Sarawak there is an underwater pipeline (Kruger u. Poschard, Die Erdolwirtschaft der Welt, 1926 p466). The refinery at Balikpapan in Borneo is the second largest in the world (p473). The hydro-electric plants of the Dutch East Indies have a capacity of 3 million h.p. (in 1920 the whole of Europe had only 8.8m h.p.) (Reichwein, Die Rohstoffwirtschaft der Erde, Jena 1928 p572). In Palestine an entirely new type of power-station is due to be installed. Using a system of canals and pumps, this will draw water from the Mediterranean at up to 87m. above the surface of the Mediterranean and 380m. above the Jordan, using its own power for the pump installations (p569). Does Bauer mean to say that English capitalists invest in railway construction in Africa or South America because the organic composition of the railways there is lower than in England? Argentina's beef industry works on huge refrigerated plants equipped with the most modern technology, with large sums of capital invested by the meat-processing firms of Chicago. An industry of this type could only have developed after a revolutionary change in transport and refrigeration techniques, and this again presupposes a high organic composition of capital. The quebracho industry in the forests of Argentina has long ceased to saw wood into blocks which are then exported. Today tannin production is a large-scale capitalist enterprise. The system of obtaining the tannin extract is based on diffusion. The blocks are first pulverised by machines, and the powder is then put into extractors which separate the tannin from the cellulose. The tannin is then concentrated in a pneumatic machine. The average yield of the quebracho wood is 25% tannin extract. The type of technology involved shows that such production is only possible in large-scale chemical undertakings run on advanced capitalist lines. The same holds for dairy production, where you find the latest sterilisers, separators, condensers, and so on. In all these modern spheres of industry the organic composition of capital is certainly no lower than it is in the equivalent plants in Europe.

Bauer has the feeling there's no factual basis to the argument about higher rates of profit in less developed countries, so he drags in various other factors, obviously in the conviction that piling up several doubtful arguments is good enough as a substitute for one correct one. 'At any given time', he says, 'a part of the social money-capital always lies fallow' (Der Nationalitatenfrage, p462). 'If too much money-capital lies fallow', he continues, 'the consequences can be disastrous for capitalism: to start with, the turnover time of capital is prolonged...within turnover time...circulation time accounts for a larger fraction'. But because value and surplus-value are only created in production, this means a reduction of surplus-value and profit. Therefore there is a drive for spheres of investment that will absorb the superfluous capital. One form of this drive is export of capital, which according to Bauer, 'reduces the volume of capital that lies fallow in a given country at a given time' (p470).

In other words, two completely different explanations tend to coalesce. One deals with productive capital, the other with money-capital that is not active in production. In his second 'theory' Bauer has merely confused money-capital which is deposited in banks with capital that searches for chances for investment. A portion of the total social capital always has to take the form of money, in the shape of money-capital. If reproduction is to be continuous, the size of this portion cannot be reduced at will. The period of time which capital, individual or total, spends in any of its three forms or circuits is not determined arbitrarily by bankers or industrialists, it is something objectively given (Cap 2, p133). And because the size of money-capital is not arbitrarily determined, any more than is the size of commodity-capital or productive capital, 'definite numerical ratios must obtain' in the division of capital into its three portions. 'The size of the capital involved determines the scale of the productive process, and this determines the volume of commodity-capital and money-capital, insofar as these function alongside the productive process' (Cap 2, p183). Summarising the results of his analysis, Marx writes, 'Certain laws were discovered according to which the basic components of a given capital, varying according to the conditions of the turnover, must constantly be advanced and renewed in the form of money-capital, to keep productive capital of a given size constantly functioning' (Cap 2, p429). 'According to the length of the turnover period, a greater or lesser quantity of money-capital is required to set the productive capital into motion' (Cap 2, p433). So although money-capital is itself unproductive, creates no value or surplus-value and limits the scale of the productive component of capital, it cannot be arbitrarily diminished or cast aside, because it fulfils necessary functions.

Bauer turns all this upside down. In Marx the money-capital that lies fallow is only a portion of the industrial capital in its real circuit, which is the unity of its three circuits; in Bauer it is a part of money-capital 'which has been pushed out of the circuit of capital' (p476). In Marx the size of the money-capital depends on the length of the turnover period; in Bauer the length of the turnover period depends on the size of the money-capital. So instead of a slower turnover tying up too much money-capital, an accumulation of too much money-capital slows down the turnover! Production does not

determine circulation, circulation determines production. 'Any change in the ratio of fallow to invested capital, of productive capital to capital in circulation...completely transforms the picture of bourgeois society' (p463). And the mystical power to be able to do this lies with the banks. In fact, expansionism is only possible due to the banks. 'Thanks to the scale of resources at their disposal at any given time, they can consciously direct the flow of capital to the dominated areas' (p472). Capital is exported because the banks decide it, because they can 'do what they like'....And the objective laws of capitalist circulation? Obviously, these belong to the realm of fantasy.

Finally, Bauer refers to fallow 'money-capital' which is expelled from circulation of industrial capital and returns to production through export of capital. But from statistics on international trade, Bauer knows that international capital movements take place mainly in the form of commodities, and hardly at all in the form of money, or as money-capital. It is not money-capital, but commodity-capital which is expelled from the circulation of industrial capital, and this only means there is an overproduction of commodity-capital which is unsaleable and which cannot therefore find its way back into production. And in fact Bauer himself accepts that export of capital creates an outlet for commodities.

(b) Overaccumulation and export of capital in Marx's conception (pp516-529)

Marx's critique starts with Ricardo's argument that 'there cannot be accumulated in a country any amount of capital which cannot be employed productively' (Principles, ch 21). This proposition is only the specifically Ricardian form of Say's thesis that demand and supply are identical (TSV 2, p493). 'Ricardo is always consistent. For him, therefore, the proposition that no overproduction of commodities is possible is identical with the proposition that no...overabundance of capital is possible' (pp496-497). The 'stupidity of his successors' is quite clear when they 'deny overproduction in one form (as a general glut of commodities on the market) and not only accept its existence in another form (as overproduction of capital...overabundance of capital) but actually make this a fundamental point of their doctrine' (p497). The epigones of Marx, eg, Varga, only reverse this stupidity, viz. they accept the overproduction of commodities and even 'make this a fundamental point of their doctrine', but deny the overproduction of capital.

On the other hand, essentially there could be no distinction here for Marx, who never stuck simply to the level of surface appearances. 'So the question remains: what is the relation between these two forms of overproduction, the form in which it is denied and the form in which it is asserted' or accepted? In other words, what exactly is 'the fantastic distinction between overabundance of capital and overproduction (of commodities)'? (pp497-498).

'The question is...what is the overabundance of capital and how does it differ from overproduction (of commodities)? ....According to the very same economists, capital is equal to money or commodities. So overproduction of capital is overproduction of money or of commodities. And yet the two phenomena are supposed to have nothing in common with each other?....The whole thing boils down to an overproduction of commodities which they accept under one name and deny under another' (p498). As against this 'mindlessness which accepts something when it is called A and denies it when it is called B' (p499); Marx makes it quite clear that when one deals with overproduction, one is not dealing merely with an overproduction of commodities as commodities, but with 'the fact that commodities are no longer regarded in their simple determination (in dieser einfachen Bestimmung) but in their determination as capital....It is not a question of the simple relationship in which products appear as commodities (Es handelt sich...nicht um das einfache Verhaltnis, worin das Produkt als Ware erscheint), but of their social determination which makes them something more than, and different from, commodities' (t.m.). In every overproduction 'the producers confront one another not as pure commodity-owners, but as capitalists' (pp498-499). But this only means that in every crisis the valorisation function of capital is disrupted; however, a capital that fails to valorise itself is superfluous, overproduced capital. Overproduction of commodities and overproduction of capital are 'the same thing'. 'Overproduction of capital, not of individual commodities (although overproduction of capital always includes overproduction of commodities) is thus simply overaccumulation of capital' (Cap 3, p246). An overaccumulation of capital which lacks any possibility of valorisation.

When does such an overaccumulation set in? Under what conditions? These questions have not even been posed by Marxists, let alone answered.

Even if he makes various perceptive observations, Lenin likewise fails to produce sufficient theoretical clarification on the problem of capital exports. 'The old capitalism founded on the unfettered domination of free competition was typically characterised by the export of commodities. The latest capitalism, based on the domination of monopoly, is typically characterised by the export of capital....On the threshhold of the 20th century, we find the formation of a new type of monopoly: firstly, monopolistic associations of capitalists in all the capitalistically advanced countries, secondly, the monopoly position of a small group of the richest countries, where the accumulation of capital has reached gigantic proportions. An enormous "surplus of capital" has arisen in the advanced countries' (Lenin, Imperialism, Collected Works, 22, p241). Here the fact of capital exports is related to the gigantic wealth and capital accumulation of the advanced countries, and this appears to be something confirmed by empirical observation. With greater perceptiveness, Lenin goes on to underline the close connections that link governments to the big banks and industrialists concentrated into trusts and cartels. He sees these as the hallmark of the latest capital expansion, brings up the example of firms like Armstrong in Britain, Schneider in France and Krupp in Germany 'which have close connections with powerful banks and governments and which cannot easily be "ignored" in the sanctioning and disbursement of loans' (p244). Through loans and the creation of colonial banks and their branches, such firms dominate whole areas as their exclusive spheres of influence. In this way 'the capital exporting nations have divided the world among themselves...' (p245).

Nevertheless, this interesting description is confined to relationships which are empirically obvious; in particular, perhaps due to the popular character of the writing, one finds no theoretical analysis of such facts which could show why capital exports are necessary under advanced capitalism. Lenin merely suggests that 'the need to export capital arises from the fact that in a few countries capitalism has become "overripe" and (owing to the backward state of agriculture and the poverty of the masses) capital cannot find room for "profitable" investment' (p242). What this "overripeness" is and how it manifests itself, is something Lenin does not show.

The heart of the problem lies in showing why export of capital is necessary and under what conditions it comes about. Marx's achievement was that he did precisely this. Regulation of the movement of capital by the level of the rate of profit presupposes differences in the latter. Marx showed the circumstances which determine a tendential fall in the rate of profit in the course of accumulation. The question arises—how far can this fall go? Can the rate of profit fall to null point? Many writers believe that only in such a case can we speak of an absolute overaccumulation. As long as capital yields a profit, however small this is, we cannot speak of overaccumulation in an absolute sense, because the capitalist would rather be content with a small profit than have no profit at all, and therefore production will be continued. 'It follows...that there is...no limit to the employment of capital while it yields any profit' (Ricardo, Principles, chapter 21).

I shall show that this idea is completely false, that there is a limit to the accumulation of capital and this limit comes into force much earlier, therefore that there can be absolute overaccumulation even when capital yields a high interest. The crux of the matter is not the absolute level of this interest, but the ratio of the mass of surplus-value to the mass of accumulated capital.

What are the conditions on which this limit depends?

Here mere empiricism is quite useless. Eg, in the utilisation of fuel, the experience of almost one hundred years has shown that it was always possible to obtain a greater quantity of heat from a given quantity of coal. Thus experience based on the practice of several decades might easily suggest that there is no limit to the quantity of heat obtainable through such increases. But only theory can answer the question whether this is really true, or whether there is not a maximum limit here beyond which any further increases are precluded. This answer is possible because theory can calculate the absolute quantity of energy in a unit of coal. Increases in the rate of utilisation cannot exceed 100% of the available quantity of energy. Whether one can actually reach this maximum point in practice is of no concern to theory.

Starting from considerations of this sort, Marx asks, what is 'overaccumulation' of capital? His answer: 'To appreciate what this overaccumulation is, one only has to assume it to be absolute. When would overproduction of capital be absolute?' According to Marx, an absolute overproduction would start when an expanded capital could yield no more surplus-value than it did as a smaller capital. Therefore 'as soon as capital grows in such a ratio to the working population that neither the absolute working time supplied by this population can be extended any further, nor the relative surplus working time expanded any further (in any case, the latter would not be practicable if the demand for labour were so strong that there was a tendency for wages to rise); hence, as soon as the expanded capital produces about as much or even less surplus-value than it did prior to its expansion there would be absolute overproduction of capital', 'There would be absolute overproduction of capital as soon as the additional capital earmarked for capitalist production = O' (Cap 3, p246. Thus according to Marx's definition of 'absolute overaccumulation' it is not at all necessary that profit on the total capital disappears completely. Theoretically speaking, it disappears only for the additional capital which is accumulated. In practice the additional capital which is accumulated will displace a portion of the existing capital, so that for the total capital a lower rate of profit results. Yet whereas a falling rate of profit is generally bound up with a growing mass of profit, absolute overaccumulation is characterised by the fact that here the mass of profit of the expanded total capital remains the same.) 'The valorisation of the old capital declines absolutely' (Cap 3, p247).

To understand under what conditions this occurs, I shall first analyse the simplest case where population and the productivity of labour are constant.

(1) Absolute overaccumulation of capital with the size of population and technology held constant

'Take a certain working population of, say, two million. Assume, furthermore, that the length and intensity of the average working day, the level of wages and thus the proportion between necessary and surplus labour, are all given. In that case the total labour of these two million and their surplus labour which is represented in surplus-value, always produces the same magnitude of value' (Cap 3, p212). 'With this presupposition, the rate of surplus-value directly gives us the mass of surplus-value (Cap 1, p417). Under these presuppositions, capital accumulation runs up against a maximal limit which can be calculated exactly, because the maximum amount of surplus-value obtainable is exactly given. Therefore it would make no sense to continue accumulation beyond this limit, because any expanded capital would yield the same mass of surplus-value as before. If accumulation were continued, this would necessarily lead to a devaluation of capital and a sharp fall in the rate of profit. 'In practice things would be such that a portion of the capital would lie completely or partially idle (because it would have to displace some of the already functioning capital before it could be valorised), while the remainder would be valorised at a lower rate of profit due to the presssure of the unemployed capital....In this case the fall in the rate of profit would go together with an absolute decline in its mass...and this reduced mass of profit would have to be calculated on an expanded total capital' (Cap 3, p247). This would happen without any devaluation of the old capital occurring. This would be a case of overaccumulation of capital, 'because capital would be unable to exploit labour to a degree that would at least increase the mass of profit along with the expanding mass of the capital employed' (Cap 3, p250). According to Marx, this would be the case 'in

which more capital is accumulated than can be invested in production....This leads to loans abroad, etc, in short, to speculative investments' (TSV 2, p484.)

2) Absolute overaccumulation of capital with a growing population and changing technology

(Increases in the organic composition of capital.)

Yet it would be wrong to conclude that absolute overaccumulation is only possible when population and technology are held constant. Using Bauer's scheme I have shown that it can and must arise despite its assumptions (a) of a progressively rising organic composition of capital and (b) of annual increases in population. Under the conditions postulated by this model, absolute overaccumulation does not set in immediately, but only after a certain interval. I showed (in Table Two) that after year 21 the capitalists could have no interest in accumulating at the existing rate (10% for c, 5% for v), because a capital expanded at this rate would be too large to be valorised to the same degree, with the given population. The personal consumption of the capitalists would start declining. So instead of accumulating the surplus-value (of year 20), ie, incorporating it into the original capital, they will earmark it for capital export. This is the specific point at which, as Marx says, 'more capital is accumulated than can be invested in production....This leads to loans abroad, etc'. Since businessmen are not inclined to cut down their own consumption, there will be a shortage of the a-portion earmarked for accumulation. By year 36 there has to be a reserve army (of 11 509 workers) and simultaneously a superfluous capital (of 117 174). This is the situation that prevailed in England early in 1867: 'At this moment, while English workmen with their wives and children are dying of cold and hunger, there are millions of English gold...being invested in Russian, Spanish, Italian and other foreign countries' (Reynolds' Newspaper, 20 Jan. 1867, cited Cap 1, p823).

From this moment onwards accumulation, ie, re-conversion of a part of the profit into additional capital, runs into difficulties which obstruct it. The profit earmarked for accumulation 'is not directly investible in expanding business in the industry in which it was made'. And this is so, of course, 'because this industry is saturated with capital'. And Marx immediately adds, 'If this new accumulation runs into problems through a shortage of spheres of investment, ie, if there is too much capital in production and too much loan-capital in supply, this plethora of loanable money-capital only exposes the limits of capitalist production...a barrier that flows from its laws of valorisation, or from the limits within which capital can valorise itself as capital.' Obviously these are specifically capitalist limits, limits to valorisation, and not limits in general. Yet social needs remain massively unsatisfied, and 'the credit swindle that follows proves that no real barrier (positives Hindernis) stands in the way of this superfluous capital being employed' (Cap 3, p495). However, from the standpoint of capital, it is 'superfluous' because it cannot be valorised.

So it is absolutely false to argue, as Luxemburg does, that Marx's reproduction scheme 'directly excludes the formation of such surplus capital' (Accumulation of Capital, p342), or that 'the diagram contradicts the conception of the capitalist total process and its course as laid down by Marx in Vol.3' (Accumulation, p343). The fundamental idea underlying this conception is the immanent contradiction between the drive towards an unlimited expansion of the forces of production and the limited valorisation possibilities of overaccumulated capital. Precisely this is the necessary consequence of Marx's schema of reproduction and accumulation. Because Luxemburg transformed these limited valorisation possibilities into a limited capacity for consumption, obviously she could find no trace of that immanent contradiction in the scheme itself. As against which, Marx shows that 'valorisation founded on the antagonistic character of capitalist production allows for a really free development only up to a certain point, and so it actually constitutes an immanent fetter and barrier on production, which are continually broken through by the credit system' (Cap 3 pp431-432). The limit of over-accumulation, of imperfect valorisation, is broken through by the credit system, ie, by export of capital and by the additional surplus-value obtained by means of it. It is in this specific sense that the late stage of accumulation is characterised by the export of capital. The distinction that Lenin draws between the old capitalism and the latest capitalism does express something real, but it bears no necessary, causal connection with competition vs. monopoly capitalism, rather its roots lie in the distinction between the early and late stages of capital accumulation in any given country, at a given stage of technological development.

In which case, how does Luxemburg reconcile the fact of capital exports with her theory of the 'non-realisability' of surplus-value in capitalism? She devotes a special chapter, 'International Loans' (ch.30, Accumulation) to this question. Through some thirty pages she tells us how the capitalist countries of Europe export capital to the non-capitalist countries, build factories there, create a capitalist system and draw them by stages into their own 'sphere of influence'. But there is not a word about how the surplus-value produced in the former is 'realised' in the latter! Instead we are told how the masses of Egypt and elsewhere have to work for long hours at low wages, how they are drawn into the capitalist nexus. In short, Luxemburg shows us not how the surplus-value produced in capitalism is 'realised' in the backward countries, but how an additional surplus-value is produced in these countries, by means of capital exports, and brought back to the countries of advanced capitalism. The fact of capital exports is not only irreconcilable with Luxemburg's theory, it directly contradicts it. It bears no relation to the realisation of surplus-value, ie, it is not a problem of the sphere of circulation, but a problem of production, of the production of additional surplus-value abroad.

(c) An inductive verification (pp530-562)

I have proposed two sorts of argument. (1) That the valorisation of capital is the driving force of capitalism and governs all the movements of the capitalist mechanism, its expansions as well as its contractions. Initially production is expanded, because, in the early stages of accumulation,

profit grows, afterwards accumulation comes to a standstill, because, in a more advanced stage of accumulation, and due to the very process of accumulation, profit necessarily declines. (2) Apart from trying to explain the oscillations of the business cycle, I have tried to define the law of motion of capitalism, its secular trend, or, in Marx's words, the general tendency of capitalist accumulation. I have shown how the course of capital accumulation is punctuated by an absolute overaccumulation which is released, from time to time, in the form of periodic crises, and which is progressively intensified through the fluctuations of the economic cycle from one crisis to the next, until finally, at an advanced stage of accumulation, it reaches a state of 'capital-saturation', where the overaccumulated capital faces a shortage of investment possibilities and finds it always more difficult to surmount this 'saturation', so that the capitalist mechanism approaches its final catastrophe 'with the inexorability of a natural process'. The superfluous and idle capital can ward off a complete collapse of profitability only through export of capital or passing 'employment' on the stock-exchange.

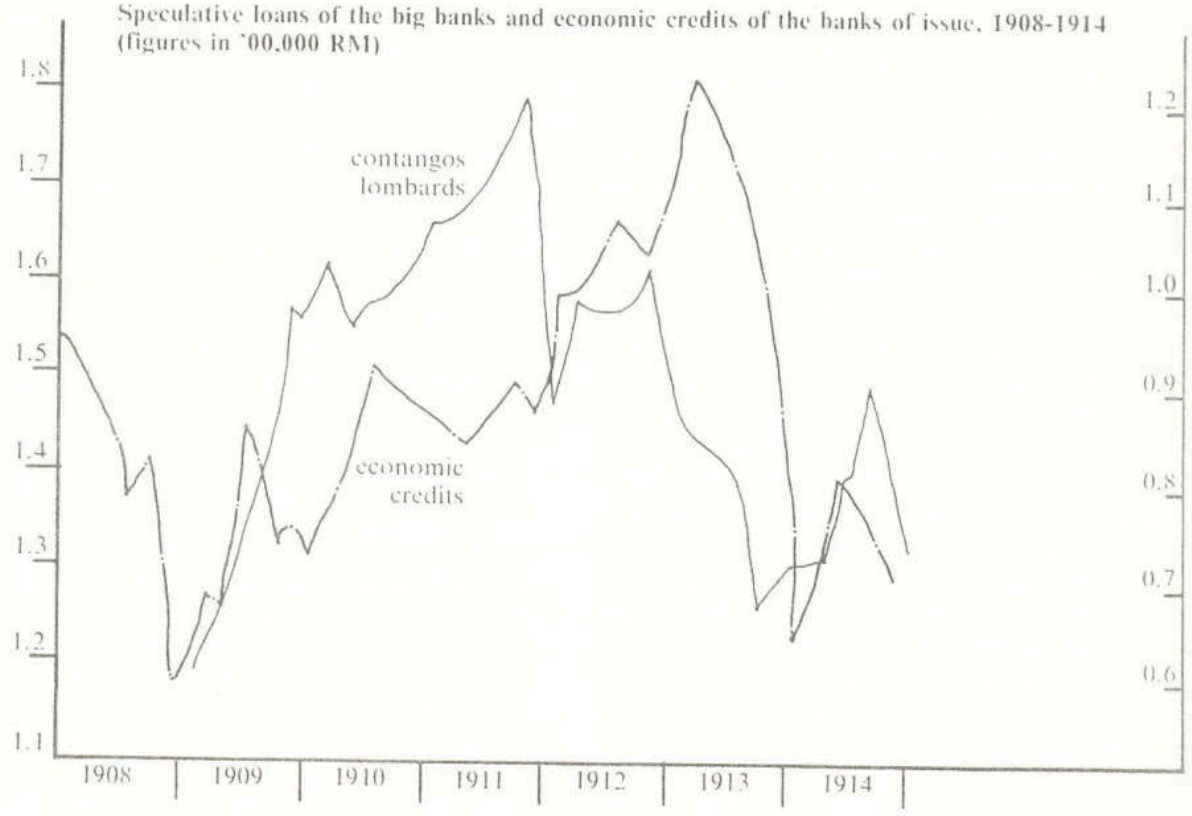
To take up this latter aspect, Hilferding devotes a whole chapter to speculation and the stock-exchange. All we learn from it is that speculation is unproductive, that it's a pure gamble, that the mood on the exchange is determined by the big speculators, and banalities of this sort. Because Hilferding denies the overaccumulation of capital, he removes any basis for understanding the essential function of speculation and the exchange. In his exposition the exchange is a market for the circulation of mere titles of ownership, divorced from and rendered independent of the circulation of actual goods. Its function is to mobilise capital. Through the conversion of industrial capital into fictitious capital on the exchange, the individual capitalist always has the option open to withdraw his capital in the form of money whenever he likes. Finally, the mobilisation of capital in the form of shares, or the creation of fictitious capital, opens the possibility of capitalising dividends. Acccording to Hilferding, speculation is necessary to capitalism for all these reasons. Yet he also refers to the 'declining importance of speculation' under capitalism (Finanzkapital, p282).

In all this there is no reference to the function of speculation in the movement of the business cycle! I have already pointed out that superfluous capital looks for spheres of profitable investment. With no chance in production, capital is either exported or switches to speculation. Export of capital and domestic speculation are parallel phenomena and stem from the same causes.

If we take the balances of the 9 largest Berlin banks over 1900-11 bills of exchange increased by around 121%, whereas the increase in contangos and lombards amounted to 524%. The following diagram, reproduced from the Institut f Konjunkturforschung for the period 1908-14 shows how in dull periods speculative loans increase more rapidly than industrial credits. The same pattern of shifts is discernible in the post-war period. In the depression of 1925-26 money poured into the stock-exchange; once the situation improved at the end of 1926 and the start of 1927 credits were displaced from the exchange into production.

FIGURE 5.

Speculative loans of the big banks and economic credits of the banks of issue, 1908-1914
(figures in '00,000 RM)



The relationship between the banks and speculation which is discernible in the specific phases of the business cycle is also reflected in minor fluctuations within any given year, so that in periods when the banks can employ their resources elsewhere, the exchange is subdued, and becomes brisk only when those resources are again released. Speculation is a means of balancing the shortage of valorisation in productive activity by gains that flow from the losses made on the exchange by the mass of smaller capitalists, and in this sense it is a power mechanism in the concentration of money-capital.

As an example of these movements one could take the present economic situation of the USA. Despite the optimism of many bourgeois writers who think that the Americans have succeeded in solving the problem of crises and creating economic stability, there are enough signs to suggest that America is fast approaching a 'state of overaccumulation'. One report of June 1926 says, 'Since the War the capital formation process has advanced with extreme rapidity. Capital is now looking for investment outlets, and due to its overflow, it can only find these at declining rates of interest. Naturally this has meant an increase of all...real estate values....Furious speculation in the real estate is one result' (Wirtschaftsdienst, 1926, I p792). The basic characteristic of the economic year 1927 is that industry and commerce have watched their production decreasing, their sales declining and their profits contracting. Reduced sales and lower production release a portion of the capital which flows into the banks in the form of deposits, savings, etc. The banks attract all industrial profits for which there are no new openings in industry and commerce. At the end of 1927, the holdings of the member banks of the Federal Reserve System were 1.7 billion dollars more than a year earlier. This makes an increase of 8%, as against the 5% which is considered normal. The retrogression in industry and commerce contrasts sharply with the overabundance of cheap credit-money. The discount policy of the Federal Reserve Board has to be seen in this context. It is not that capital flows into Europe because rates of interest are higher there; on the contrary, US rates of interest have been cut in order that there is an outflow of capital! The financial expert Dr. Halfeld reports, 'When banks of issue reduced the discount rate from 4% to 3.5% in Aug. 1927, there were two reasons for this—one, to create an outflow of gold to Europe, which is short of capital, and two, to revive domestic business'. Yet this discount policy failed. Despite the substantial outflow of gold, American interest rates continued to remain low in the open market, and vast sums of money were channelised into speculation, or at least into the overcapitalisation of many firms, due to the ease with which money could be procured. The depressed state of industry is reflected by an expansion of speculative loans and speculative driving up of share prices (Handelszeitg. d. Berl. Tageblt. 24/6/28). According to estimates of the Dept of Commerce, in 1927 the US invested $1648m of new capital abroad. True, this was partly matched by a reverse flow of $919m into the USA, yet the greater part of this money flowed straight into the New York stock-exchange for speculation. Advances by New York banks by way of brokers' loans on the stock-exchange totalled $4282m at the start of May, which is 46% higher than in the previous year. On the other side, disbursements to industry and commerce remained low down to the middle of February, and towards the end of March there was a 'massive outflow of capital from the country (including large-scale buying up of foreign securities)'. As a countervailing measure, the Federal Reserve banks decided on a discount policy which was the reverse of the one followed late in 1927. All 12 banks raised the discount rate from 3.5% to 4%. In April 1928 the Chicago and Boston bankers increased the rate a second time to 4.5%, and several banks followed suit, thus returning discounts to a level not seen by American money-markets since early 1924. The results of the new discount policy appear to have been a complete failure, if one goes by the staggering bout of speculation on the New York exchange in the last week of March 1928. In fact, despite the measures taken by the Clearing House Association against further extension of speculative credits, the flood of speculation reached a feverish pitch by August. The fever of speculation is only a measure of the shortage of productive investment outlets. Dr Flemming is therefore quite right in saying that loans to foreign countries offers one way of eliminating difficulties, since income from production cannot be redeployed on the domestic market. Not higher profits abroad, but a shortage of investment outlets at home is the basic underlying cause of capital exports.

Today America is doing its best to avert the coming crash—already foreshadowed in the panic selling on the exchange (Dec.1928)—by forcing the volume of exports. The recent Copper Exporters Inc. has been followed by the floating of the 'Steel Export Association of America', which is a joint export organisation of the two major American concerns, US Steel Corp. and Bethlehem Steel (Frankfurt Zeitg. 1/7/28). When these efforts are matched by a similar drive by the Germans and the English, the crisis will only be intensified.

(d) The result. Intensified international struggle for investment outlets. Transformations in the relationship of finance capital and industrial capital (pp562-579)

Lenin was quite correct in supposing that contemporary capitalism, 'based on the domination of monopoly, is typically characterised by the export of capital'. Holland had already evolved into a capital exporter by the close of the 17th century, England reached this stage early in the 19th century, France in the 1860s. Yet there is a big difference between the capital exports of today's monopoly capitalism and those of early capitalism. Export of capital was not 'typical' of the capitalism of that epoch, it was a transient, periodic phenomenon which was always sooner or later interrupted and replaced by a new boom. Today things are different. The most important capitalist countries (England, France, Belguim, Holland, Switzerland, and America) have already reached an advanced stage of accumulation at which the valorisation of the accumulated capital encounters increasingly worse obstacles. Overaccumulation, the over-

abundance of capital, ceases to be a merely passing phenomenon, and starts more and more to dominate the whole of economic life. This is the case with France, which, according to Mehrens (p230) 'has an almost chronic superfluity of money'. Of course, this superabundance of capital is interrupted by periods of boom. But these boom periods are becoming shorter and shorter. The revival which started in Germany in 1910 was already over by 1912. The boom was over so quickly that Feiler asked somewhat melancholically, 'Now was that a boom, or were we already in the purgatory of the depression?' (p109). Likewise, for the period after 1918, the Institut f. Konjunkturforschung has repeatedly established a shortening of the duration of the cycle. This is perfectly comprehensible in terms of the theory I have developed in this book. As rationalisation sustained its momentum after the war, the accumulation of capital lurched forward sharply. That a substantial part of plant-expansions was carried through with the help of foreign loans alters nothing, economically, in the fact that c expanded enormously and that, therefore, the valorisation of this expanded capital became more difficult. Apart from this, the problem of valorisation was further aggravated by the fact that America was now absorbing one part of the surplus-value in the form of interest on her loans. At the same time, at this advanced stage of accumulation, booms become less intensive. Feiler is sarcastic about the freedom with which the term 'boom' is usually bandied about. The boom has completely changed its earlier character. 'Today we no longer expect booms to bring increased prosperity to all sectors of the economy....We are generally quite content if industry as a whole tends to prosper, and especially if the main industries and firms show higher prosperity' (p106). Under these circumstances the overabundance of capital can be surmounted only through capital exports. These have therefore become a typical and indispensable move in all the advanced capitalist countries.

Export of capital has thus become a means of warding off the breakdown, of prolonging the life-span of capitalism. These effects are more or less obvious, whereas there is no conception of the actual underlying relationships. The bourgeois economist proclaims triumphantly that Marx's theory of breakdown and crises is false and contradicted by the actual development. He is generous enough to concede that it bore some correspondence to the formative period of capitalism in the 1840s—but when conditions changed later, the theory simply had the ground removed from under its feet. 'When Marx worked out his theory of crisis...one could actually suppose that the recessions following the booms would become progressively worse. It was always possible to extrapolate from the line 1825-1836-1847 and end up with the theory of catastrophe worked out by Marx. In fact, even the crisis of 1857 still fitted into the picture. We know from their correspondence how both Marx and Engels saw in the breakdown of the boom in 1857...a vindication of their theory of crisis' (Sombart, Der moderne Kapitalismus, III/2, 1927 p702). But now it was all over. According to Sombart the crisis of 1857 was the last catastrophe of the classic type that England would go through. Germany and Austria had still to go through their own crisis in 1873. After that 'Europe's economic life was underpinned by a conscious drive to neutralise, mitigate and abolish the tensions; this was a tendency that persisted down to the War and nothing in the War itself or the years that followed it at all weakened or transformed this tendency.' 'What emerged out of capitalism... was the very opposite of the prophesised sharpening of crises; it was their elimination, or, "cyclical stability" as people have been saying more recently' (ibid).

That this description contains a one-sided exaggeration is shown by the actual facts. Bourgeois economists prefer to convince themselves more than others that we are through with crises. Sombart assures us that we have not seen a serious crisis in Europe since 1873. But we know that the French crash of 1882 is reckoned among 'the most serious crises in French economic history' and that it precipitated a depression that was destined to persist for over one and a half decades (Mehrens, p197). According to Sombart, in England 'the full savagery of unbridled capitalism burst forth really for the last time in the 1840s....Already in the 1850s the drive for expansion was much weaker and therefore also the setback...' (p703). The facts prove the opposite. About the crisis of 1880 Marx himself could say, 'In terms of its duration, scope and intensity, the present crisis is the greatest England has gone through', even if he was quite conscious, on the other hand, of the elements of novelty contained in it, viz. the fact that there was no financial panic on the London markets (Letter to Nicolaion, 12/9/1880). Even more serious was the crisis of 1895, which was preceded by intense speculation chiefly in South African gold shares (at the start of September 1895 the market-value of mining scrips totalled 151.7 million pounds sterling, against a suscribed capital of 34.3 million pounds sterling). 'The real boom started only in 1895....Of all the attacks of pure speculative frenzy which the City has lived through, this was the worst, the wildest and the most pernicious. While it raged, more money was won and lost than in half a dozen earlier booms and panics. It ruined ten times as many people as the South Seas swindle and undoubtedly played its part in bringing forth the Boer War' (London Financial Times, cited Weber, Depositenbanken 2.A. 1915 p270).

People have tried to explain the novel character of crises by saying that the banks have succeeded in imposing a sort of regulation over economic life. 'They can systematically withhold credit and stop capital issues, where claims are economically unsound. And in this way they can ensure that the creation of capital takes a rational form....They can thereby prevent speculation on the exchange and moderate the over-optimism of industry itself'. 'More and more entire spheres of our economic life are being subordinated to centralised control....Thus in the major large-scale industries the formation of prices of final products...has been more or less completely withdrawn from speculation' (Feiler, p168). The fact that the character of crises has changed is traced back to increasing planning and conscious regulation of the economy. This is one way of seeing as one's own achievements changes that are rooted in a totally different complex of causes.

The worst orgies of speculation are possible in a period when, with the transition from individual forms of property to its social form in share-capital, enormous fortunes accumulated over several decades are thrown on to the

market and sacrificed on the exchange. These are the flotation periods (Grunderperioden) bound up with vast regroupments and concentration of wealth. They are therefore periods of wild speculation. But once this process of concentration of share-capital in the hands of a small number of powerful industrial and financial magnates has already reached an advanced level, with the general progress of accumulation and through the mediation of the stock-exchange, the exchange itself is left only with the residual stock-capital in the hands of the public. Under these conditions speculation is badly debilitated, not of course through the 'conscious intervention' of banks which supposedly centralise command over the economy into their own hands, but because there is not enough 'material' for the exchange to 'digest' (Helfferich, Verhandlungen des IV.Allgem. Deutschen Bankiertages zu Munchen, Berlin, 1912 p75). At an already advanced level of concentration of share-capital, speculation on the stock-exchange is bound to lose its impetus as its middle class base of small rentiers, workers, civil servants, etc dries up. Yet this only compels the idle money-capital to rush into other outlets, into export of capital, as the only investments promising greater returns. This alone is one reason why world market struggles for investment outlets become increasingly sharper.

This brings us to the second reason why the character of crises in England has temporarily changed. For as long as our attention is fixed on an isolated capitalism, then it follows that advanced stages of accumulation will necessarily generate crises in their sharpest and most savage forms, with a tendency to rampant speculation. During the first fifty years after 1825, when English relations with world economy were still only embryonic, and England could thus be regarded, to some extent, as an 'isolated capitalism', the crises of this early period of capital accumulation were enough to precipitate wild panics and collapses. But the more England succeeded in building her relations with world economy, expanding her foreign trade and discovering foreign outlets for her overaccumulated capital, the more the character of those crises changed. But with the progress of accumulation, the number of countries grows, in which accumulation approaches absolute limits. If England and France were the world's first bankers, today the list includes America as well as a whole series of smaller donor countries, like Belgium, Switzerland, Holland, Sweden. Germany's capital imports are a purely temporary phenomonon, anyway. Given the technologically advanced structure of German industry, high productivity of labour and very low wages, the rate of surplus-value is extremely high, and therefore the tempo of accumulation much faster, so that Germany will reimburse her foreign debts sooner than people imagine and emerge on the world market as an exporter of capital. Yet in proportion to the growth in the number of countries which export capital and in the mass of their capitals, their competition, their struggle for profitable outlets, is bound to intensify. Clearly, the repercussions of this will necessarily sharpen the crisis at home. If the early crises of capitalism could already lead to wild outbreaks, one can imagine what crises will be like under the growing weight of accumulation, when the capital-exporting countries are compelled to wage the sharpest struggles for investment outlets on the world market.

Eg. Harms clearly forecasts that the USA is already approaching the absolute limits of accumulation, so that 'the capital which flows into the USA by way of interest payments over the coming decade, must in some form again find its way back into the world markets'. This will only promote the further industrialisation of the newcomers. But this process of industrialisation, encouraged by American capital, can only revolutionise European exports. In future only means of production can be exported. Yet the development of American industry is driving the US in the same direction. 'In other words, one has to reckon with the fact that soon the USA itself will be emerging as one of the world's biggest suppliers of the means of production. The well-known enquiries of the Balfour Report and the proceedings of the last 'Imperial Conference' have produced instructive evidence for such an assumption'. Should the USA start exporting means of production, 'this must ultimately lead to a situation where the European debtor countries simply cannot sustain debt-servicing charges to the US' and cannot pay for their imports of raw materials and means of subsistence. In other words, Harms foresees the approach of one of the most terrible crises, in fact, of the bankruptcy of European capitalism, although he consoles himself with the illusion that the USA will voluntarily refrain from capital-goods exports so as not to smash completely the solvency of her European debtors. But Harms does not tell us what this assumption is based on (Bernard Harms, 'Wandlungen in der weltwirtschaftlichen Stellung Europas', Strukturwandlungen der Deutschen Volkswirtschaft, Berlin 1928 p8. Hilferding refuses to accept this. He reassured the Vienna meeting of the Verein f. Sozialpolitik, 1926, that what is taking place today is not the decline of Western capitalism, but only 'a prelude to its reconstruction'. Schriften Bd. 172 p115).

This makes it possible, finally, to form some more adequate picture of the relation of banking capital, or 'finance capital' as Hilferding calls it, to industrial capital ('By finance capital I mean banking capital, or capital in money-form, which is in this way really transformed into industrial capital', Hilferding, Finanzkapital, p283). It is well known that Hilferding sees the basic characteristsic of modern capitalism in the actual dominance of finance capital over industry, and argues that with the growing concentration of banking, the banks increasingly come to control capital invested in industry (Finanzkapital, p282). As capitalism develops, more and more money is mobilised from the unproductive classes and placed at the disposal of industrialists by the banks. Control over this money which is indispensable to industry is vested in the banks. So as capitalism develops and with it the credit system, industry becomes increasingly dependent on banking. This dependence is thus a result of property relations. An ever-increasing proportion of capital in industry is finance capital, ie, belongs to the banks and not to the industrialists who use it. With the growing concentration of money- and banking-capital, the power of the banks increases. 'They become the promoters and ultimately the rulers of industry' (p284). Moreover, as banking itself develops, competition among banks tends to be eliminated. 'Ultimately such a tendency will lead to a situation where one bank or group of banks obtains control over the entire mass of money-capital. Such a 'Central Bank' would thus exert controls over the whole of

social production' (p218).

Hilferding needed this construction of a 'Central Bank' to ensure some painless, peaceful road to socialism, to his 'regulated' economy. As we have seen already, the 'socialising function' of finance capital is supposed to 'enormously facilitate the overcoming of capitalism'—control over the six largest Berlin banks would mean control over all the most important spheres of large-scale industry, and so on.

Hilferding's exposition flatly contradicts the actual tendencies of development of capitalism. It is moreover quite incompatible with the fundamental ideas of Marx's theory. For if Hilferding were right in arguing that the banks dominate industry, this would only shatter Marx's theory of the crucial importance of production itself to the structure of capitalism. The crucial role would then be played not by the productive process, by industry, but by finance capital, or structures in the sphere of circulation!

That the dominant role of banking described by Hilferding is valid for a certain epoch of capitalism is indisputable. But it corresponds precisely only to a specific stage of capitalist development and is certainly not, as Hilferding supposes, a characteristic of the 'historical tendency' of capital (p285).

Given the law of accumulation developed above, it follows that the interrelations of banking and industrial capital are historically mutable. Here we have to distinguish three phases. At a low stage of capital accumulation, when prospects for expansion are unlimited, the capital formation of industry itself is not enough. Therefore industry relies on a flow of credits from the outside, ie, from non-industrial strata. The building of a credit system centralises the dispersed particles of capital and the banks acquire enormous power as mediators and donors of industrial credit. This was the phase France passed through after 1850, or Germany at the start of the present century. Mombert attempts to locate the causes of this, in the case of Germany, pointing to the growth of unproductive state expenditures, and the overpricing of raw material imports ('Zur Frage von Kapitalbuldung und Kapitalbedarf', p389). This is the period of 'finance capital' that Hilferding has in mind. Yet it is characteristic only of this nascent capitalism. The further progress of accumulation alters the interrelation of banks and industry. In France the initial capital shortage passed over into a chronic superfluity of money. In this phase industry establishes its independence. Obviously the specific configuration depends on the given country and the given sphere of industry. As far as German large-scale industry is concerned, Kirdorf could already say, in 1905, 'The power of the banks over us has never been as weak as it is today' (Weber, Depositenbanken, p81). Likewise, after a period of massive concentration within the industry, Riesser could say about chemicals, 'the industry has never been more independent in relation to banking credit' (Riesser, Zur Entwicklungsgeschichte der deutschen Grossbanken mit besonderer Rucksicht auf die Konzentrationsbestrebungen, Jena, 1905 p253). Bank balance sheets were no reflection of this independence of industry, for the simple reason that the more backward industries still depended on credit. A decade later, Weber could write, 'On the whole, there is no basis for the widespread fear that industry, and especially large-scale industry, is managed according to the wishes of bank directors: on the contrary, the movement of concentration and the formation of industry associations has made industry far more independent of the banks' (Depositenbanken, p343).

At more advanced stages of accumulation industry becomes increasingly more independent of credit flow because it shifts to 'self-financing' through depreciation and reserves. Eg, Feiler cites the example of the Bochumer Verein—by no means one of the industrial giants—which, with an initial share capital of 30 million Mk., within 9 years declared dividends equal to the entire nominal value of the share capital, and simultaneously earmarked 40 million Mk. for new investments (p112). Nachimson has shown that over the period 1907/8-1913/14, the share capital controlled by the German industrial finance corporations (Aktienbanken) declined from 29% of the total capital of all joint-stock companies, to 26.8% and that in the same period their foreign holdings declined from 90% of the total liabilities of all stock companies to almost half. He concludes, 'These figures strongly suggest that the role of banks has declined in importance' (Die Weltwirtschaft vor und nach dem Kriege, Bd. I, 1922 p85). True, Nachimson accepts Hilferding's theory of the domination of industry by the banks. But he says, 'However, it is important to point out compared with the start of the 20th century, there has been a distinct tendency for industry to become independent of the banks....Whereas the banks rely on external capital flows which are basically derived from industry, the equity funds of the industrial companies have been rising continuously...'. 'Industrialists like Thyssen, Siemens, Rathenau, Stinnes...do not come from banking circles, but from industrial circles and they are increasingly dominating the banks, just as the banks once dominated them' (p87).

Prion also states that as far as large concerns like I.G. Farbenindustrie go, there has been a complete change in their relations with the banks. 'The large-scale trusts of today can no longer afford to depend on the vagaries of bank credit or the good will of bankers; financial security demands that they stand on their own feet'. This is the purpose of long-term financial planning in modern companies. Farben estimates its capital-requirements only after assessing its future expansion plans or programmes of capacity-expansion. The same with the Stahlverein (Prion, 'Der deutsche Geld—und Kapitalmarkt seit der Stabilisierung', in Harms (hrg) Strukturwandlungen..II p342).

Finally, in a third phase, industry finds it progressively more difficult to secure a profitable investment, even of its own resources, in the original enterprise. The latter uses its profits to draw other industries into its sphere of influence. This is the case with Standard Oil Co., according to Liefmann's account (Kartelle u. Trusts, 1918 p172). But when the overaccumulated capital of a certain industry finds no such scope for expanding into other industries defined by a lower degree of accumulation, funds are channelled into 'the New York money market, where they play a crucial role' (ibid). In countries like England, France and especially the USA, it is simply not possible to speak of industry being dependent on the banks. On the contrary, recently it is industry which has been dominating the banks. Apart from its own assets in banks, industry sets up its own financial

institutions, precisely in order to secure a profitable investment for its surplus funds. Nothing is more characteristsic of America today than the publication of books like 'Investment, a New Profession' (by Henry Sturgis, New York 1924), and nothing so common as the various 'investment trusts'. In Germany firms like A.E.G. are not only independent of the banks, they stand in a 'solid position vis-a-vis financial circles' due to their own massive bank accounts. In a chapter on recent international trends in industrial financing, Vogelstein states that the typical balance sheet of modern large-scale companies shows a completely different picture from the past. There is a tendency for the share of equity funds to increase at the expense of borrowed funds, or for the company to acquire its own assets in the banks. According to Vogelstein, this is one of the reasons why banks have been turning to the stock-exchange by way of investments. 'The more industrial financing relies on equity and long-term debentures', the more the structure of bank capital shifts from industrial credits to speculative loans (Vogelstein, 'Die finanzielle Organisation d. kapitalistischen Industrie und die Monopolbildungen', Grundr. d. Sozialokonom. VI Abt., 1914 p200).

The historical tendency of capital is not the creation of a 'Central Bank' which dominates the whole economy through a general cartel, but industrial concentration and growing accumulation of capital leading to the final breakdown due to overaccumulation.

THE END