

...clearly indicates here that the cause of the upswing ... is the pattern of production built into the structure of ... which have been built up during the economic expansion and ... has become rigid; that is, it cannot adjust to the new production requirements at the end of an upswing. Partial and then general overproduction will result. However, Tugan-Baranovsky does emphasise the speculative nature which drives the expansion, particularly towards the end of an upswing, and which makes a capitalist economy especially prone to 'disproportionalities' and, consequently, to economic crises.

Arthur Spiethoff (1873–1957) was probably the most eminent German business cycle analyst at the beginning of the twentieth century. He was not only strongly influenced by Tugan-Baranovsky's seminal work, emphasising over-investment in the means of production as the dominant cause of modern fluctuations and rejecting Say's Law of markets as inappropriate to a monetary economy, but also by the German historical school. Together with Werner Sombart and Max Weber he stood out from the youngest generation. Spiethoff had been a student of Adolph Wagner and long-time research assistant to Gustav Schmoller, and was Professor at the University of Bonn from 1918 until his retirement in 1939. Joseph A. Schumpeter was his colleague from 1925 to 1932 until he moved from Bonn to Harvard. Schumpeter later attributed to Spiethoff's business cycle analysis the virtue that 'with the possible exception of Marx, Spiethoff was the first to recognize explicitly that cycles are not merely a non-essential concomitant of capitalist evolution but that they are the essential form of capitalist life' (Schumpeter 1954, p. 1127). Spiethoff had already published his first major paper on the theory of overproduction (Spiethoff 1902), published here for the first time in an English translation,¹ prior to writing a long review article on Tugan-Baranovsky's book (Spiethoff 1903) which formed the outline to his famous entry on 'Crises' in the *Handbook of State Sciences* (Spiethoff 1925). The shorter 1953 English version, 'Business Cycles', is also included in this collection. Spiethoff's life-long work on business cycle theory culminated in the two volumes *Die wirtschaftlichen Wechsellagen* (1955).

Spiethoff does not attempt to derive business fluctuations predominantly from a single cause or even from a tightly-knit analytical structure, but rather aims to synthesise the features of most of the prevalent business cycle theories of his time in order to arrive at a comprehensive picture of industrial fluctuations. This allows him to develop his explanatory framework in much closer contact with the historically specific instances of particular business cycle episodes. To a greater degree than most other business cycle theorists he embeds his analysis in a detailed study of historical material.² Spiethoff's typical cycle consists of two phases

1 Spiethoff again took up the issue of overproduction three decades later in his contribution to the *Encyclopedia of the Social Sciences* (Spiethoff 1933).

2 For a methodological justification of his approach, see Spiethoff (1952).

(*Wechsellagen*): an upswing, subdivided into the three stages of second revival, the boom and capital scarcity, and the downswing consisting of the two stages of recession and first revival, that is, the stage in which investment stops declining and begins a slow upward movement.

In his 1925 article Spiethoff develops what later became known as Schumpeterian themes, where industrial and interfirm differentiation as new technologies and new products are introduced become an essential part of the dynamic causing an economic upswing. An economic expansion starts – according to Spiethoff – from the success of a few firms in a particular industry (or group of industries) and then spreads as result of the confidence and successes experienced in these industries to related activities and industries where ‘new fields of application’ can be found. Spiethoff develops a ‘network’ idea of relationships between dynamic firms and industries which give each economic upswing its particular historical characteristic. The element of innovation and technological transition (*‘exogenous stimuli’*) gives the economic expansion, a feature of unpredictability with regard to its timing, duration and depth.

Spiethoff’s analysis also exhibits some *endogenous* elements in business cycle behaviour. For example he identifies ‘powerful self-annihilating forces’ in the downswing which are, ‘to a large degree, a cause for the subsequent upswing’ (1953, p. 150). Among the favourable conditions which develop in the course of a depression and which are conducive to the restart of an expansionary process are:

- low nominal rates of interest which support the opening of a gap between returns on interest-bearing financial assets and the (potential) returns on real investments as new investment opportunities become more apparent; such a gap also results from
- a fall in the construction costs of new investment goods due to low wages and low interest rates in the course of the depression; and, furthermore,
- the new investment opportunities result from the efforts which existing businesses have to make in the difficult conditions of the depression to lower production costs through technological modernisation and the search for new markets. Enterprises can also more easily respond to such new investment opportunities because of existing excess capacities, excess inventories and excess labour available in the course of a depression.

A very important component for an upswing to gain momentum – and for the possibility of overproduction to arise – is the availability of ‘credit’. Here Spiethoff emphasises that if each enterprise had to finance its activities from earnings (either its own or other firms’), the picking up of economic activity would be a much slower process. The extension of credit allows industry to bring unutilised capacities and unemployed labour into operation more quickly and also allows the process of new capital

transition to proceed on a larger scale. For Spiethoff 'credit is the indispensable means for an upswing' (p. 153). The availability of credit is especially important since an upswing usually starts in the investment goods industry where the need for capital to finance economic activity is especially strong.

The root of the possibility of overproduction for Spiethoff lies in the possibility that the production of investment goods and of produced flow inputs (iron, coal, bricks, cement, timber) could, in the course of an upswing, easily outstrip the volume of savings being generated. Spiethoff calls these inputs 'indirect consumption goods' because they cannot be consumed directly but satisfy needs only by way of other goods. In particular, Spiethoff believes that towards the end of an upswing, the production of investment goods and of indirect consumption goods might still continue at a relatively high rate while the volume of savings might come down; the latter is due to rising real wages and falling profits, rising raw material costs and, possibly, a fall in the expectation of returns on further investment. In certain periods of the upswing, savings temporarily cease to regulate the production and utilisation of investment goods, and this allows the possibility of *overproduction* (and overaccumulation) to arise. His investigation aims at showing 'the essential point to be overinvestment in the industries for indirect consumption. Explain this and you have the ultimate cause of the cyclical process' (p. 166).

Consequently, in his applied work on business cycles Spiethoff constructed an index, which almost exclusively concentrated on the consumption of pig iron, because he regarded it as the best indicator for the changing state of the economy. Problems of interpretation led to the fact that the German economic periodical *Magazin der Wirtschaft*, which had been the outlet of Spiethoff's barometer since 1926, ceased publication in summer 1927. Despite the great support of Schumpeter, Spiethoff was not able to find another publisher for his barometer.¹ Interestingly, in the famous Spiethoff festschrift on 'The Current State and the Nearest Future of Business Cycle Research' (Clausing 1933), which saw almost all leading international scholars in the field among the authors, empirical research is hardly discussed at all.

Spiethoff's business cycle theory is formulated in a way which does not require overproduction or even an upswing to occur by necessity, but he describes a number of endogenous mechanisms which could easily lead to overproduction, crisis, and then to a situation which is favourable for a new upswing. For the latter to actually occur, new ('exogenous') impulses are necessary, such as the emergence of new technologies, new industries and new markets. The theory is thus a mixture of an analysis of endogenous mechanisms – which could easily lead to business fluctuations,

1 See Kulla (1996, Chapter C) for a detailed study of Spiethoff's role during the beginnings of empirical business cycle research in Germany in the period 1925–33.

such as the credit mechanism in a developed capitalist economy, the importance of a self-feeding sector of intermediate input production, expectation formation and snowball effects, and exogenous impulses – such as new techniques of production and new areas of industrial activity. Both types of elements lead to a business cycle theory in which the timing and the strength of the different phases of a cycle remain indeterminate and give rise to irregular patterns of industrial fluctuation.

Knut Wicksell (1851–1926) was inspired by turn of the century literature on business cycle and crises theory, in particular the work of Tugan-Baranovsky (1901) and Spiethoff (1902, 1903). His article 'A New Theory of Crises', written in 1907, was first published in the German original only in 1998 (in Streissler, ed.). It was intended to convey reflections on the 'enigma' of business cycles, originally delivered at an Oslo lecture in May 1907 (see Wicksell 1907), to a German readership.¹ Furthermore, in the academic year 1907–8 Wicksell gave a lecture on economic crises at the University of Lund.² The worldwide recession during this period made his remarks particularly topical.

It is well known that Wicksell's fundamental distinction between the money and the natural rate of interest is an important building block in the Austrian business cycle theory as it was later developed by Mises and Hayek. Apart from the relatively unproblematic change in savings, due to a change in the individuals' intertemporal preferences, one has to distinguish between two major impulses which can cause a divergence between the two rates of interest:

- an improvement in profit perspectives due to technical advances which cause an increase in the natural rate of interest and investment demand, as long as the banks do not increase the money rate they charge in parallel;
- an intervention of the banking system which leads to a lowering of the money rate of interest and thus causes a disturbance of the initial equilibrium with the natural rate.

Whereas the first impulse is real and a 'natural' one, the second impulse is a monetary one and 'artificial'. With regard to the importance Hayek attributed to the first impulse there is a remarkable change between his explanations in *Monetary Theory and the Trade Cycle* (1933), published in the German original in 1929 and those in his later *Prices and Production* (1931).

1 This happened for the first time in 1922 when the second Swedish edition of volume II of his *Lectures* was translated into German. His note on cyclical fluctuations and crises reveals on the one hand the great importance Wicksell attributed to these 'enigmatic events' but on the other hand also the incomplete character of his treatment.

2 In fact he had already given lectures on economic crises before, only a few years after *Interest and Prices* had been published in the German original. See Boianovsky and Trautwein (2001).

In *Monetary Theory* Hayek ascribes a central role to technical progress and recognises explicitly that a process of credit expansion by no means exclusively emerges from a lowering of the money rate of interest below the level of the natural rate by the banks but also can result through an enlargement of profitable investment options leading to an increase of the natural rate. In *Prices and Production*, on the other hand, the first impulse, which always had been emphasised by Wicksell despite all his recognition of interest rate formation by banks, is fully eliminated in Hayek's considerations. As for Mises, the banks, causing the second impulse, are the real villains of the piece who disturb the initial equilibrium and finally are responsible for the overinvestment crisis.

Wicksell's ideas on business cycle theory remained fragmentary. Nevertheless, the 'new theory of crises' article, besides the major importance attributed to this topic, makes clear two central elements of his thought. First, with the identification of (the unsteady stream of) technical inventions and improvements as the *deepest* cause of cyclical fluctuations, Wicksell was a representative of a *real* business cycle theory. This fundamentally distinguishes him from Hayek for whom the cycle, although constituted by changes in the real structure of production, is ultimately caused by monetary factors. Furthermore, the cumulative processes caused by the divergence between the two rates of interest, although being central for an understanding of changes in the general level of prices, is not, however, an essential building block for his explanation of the business cycle phenomenon (see also Leijonhufvud 1997). Although Wicksell emphasises the importance of 'technology shocks' and regards real factors which lead to a change in the natural rate of interest as the decisive cause of business cycles, he cannot legitimately be seen as a precursor of modern equilibrium business cycle theorists (Caporale 1993), since he is not only light-years away from using the market-clearing hypothesis as a methodological principle but also because the emphasis on intertemporal coordination problems constitutes the very essence of his economic thought.

A much greater relationship and congeniality, however, exists with the ideas of John Hicks who in the years between 1931 and 1935 was a regular member of the London School of Economics seminar given by Hayek, who also encouraged him to look critically at the work of Wicksell. Although himself the author of important contributions to monetary theory, Hicks always remained sceptical about Hayek's claim that an economy must be in equilibrium without the existence of disturbing monetary factors. Hicks stressed the fundamentally real character of the business cycle phenomenon time and again. This becomes clear from his summing up of a particularly revealing arguing with Hayek in *Capital and Time* where Hicks conceives a neo-Austrian model of a barter economy. 'Where ... I do not go along with him [Hayek] is in the view that the disturbances in question have a monetary origin ... Monetary disorders may indeed be super-

imposed upon other disorders; but the other disorders are more fundamental' (Hicks 1973, p. 133f.).

Hicks's view is fully in line with Wicksell's, as becomes clear on reading the new theory of crises article. Although Wicksell criticised a specific Marxist version of the business cycle as it was outlined by Engels, Laidler is fully right when he stresses that Wicksell is 'far closer to the Marx-Schumpeter tradition in cycle theory than to any monetary tradition' (Laidler 1991, p. 145). The central role of technical progress emphasised by Marx – which can also be found in Schumpeter and Sombart's hypothesis, according to which technical progress is the essential determinant of the long-run trend but also the key factor causing the cycle – has influenced the debates in the German language area much more than those in the Anglo-Saxon world where monetary theories of the business cycle prevailed. Wicksell's ideas on crises and business cycles were decisively shaped by the debates in the German language area, even more so than suggested in Boianovsky's otherwise excellent analysis of Wicksell's business cycle theory (1995). Wicksell's 'new theory of crises', however, also makes clear his emphasis on the *discontinuous* character of technical progress which is ultimately responsible for cyclical fluctuations. Wicksell is far away from identifying in technical progress, besides population growth, the second component of the 'natural' rate of growth which may lead to the development of the economy along a steady state growth path as it was later outlined by Solow et al. in neoclassical growth theory. Malthusian ideas on population growth, as well as the shortage of natural resources, prevented Wicksell from exploring such optimistic scenarios.

Albert Aftalion (1874–1956), born in Bulgaria, was one of the leading French economists in the first half of the twentieth century and is probably best known as one of the founding fathers of the acceleration principle. The main ideas from his two-volume work *Les Crises Périodiques de Surproduction* (1913) are summarised in his article 'The Theory of Economic Cycles, based on the Capitalistic Technique of Production' (1927). Aftalion is a strict adherent to Juglar's methodological principles and uses time-series material systematically. In his detailed statistical investigation of the fluctuations of prices, incomes and costs respectively, Aftalion finds that the time series on aggregate production and the general price level do not coincide with the time series on production of fixed capital goods, but instead lag behind it by a period of from one to three years. A central role is thus played by the leads and lags which characterise production activity and which transmit themselves into price movements. Such price movements in turn lead to production decisions which give rise to continuous cyclical movements of economic activity. These cyclical fluctuations are much stronger for sectors producing fixed capital goods than for sectors producing consumption goods.

Hence, Aftalion's theory is built upon two main ideas:

- that the price and quantity systems are never in a state of equilibrium and that excess supply and excess demand situations succeed each other over the various phases of the cycle; the cycle is characterised by alternate optimism and pessimism, with depressions being generated by prosperity;
- that the 'objective' reason for such disequilibria is a technological one: the long gestation times and longer term effects of production decisions are due to 'capitalistic' techniques of production, that is, techniques which use a strong element of fixed capital equipment.

Thus Aftalion can be viewed as holding a 'lag theory' of the business cycle. The basic structure of his theory is supplemented by an analysis of 'secondary' factors, such as movements of income shares, as well as of credit and speculation, which are not the causes but the effects of cyclical variations of prices and expectations extending and deepening their various phases.

Altogether Aftalion comes close to a uni-causal explanation of industrial fluctuations. In his eyes, the root cause for the amplitude and the timing of the business cycle is a technological characteristic of a 'capitalistic' economy, that is, the long gestation lags of durable instruments of production. However, while being the fundamental cause, this characteristic alone would not lead to industrial fluctuations if there were perfect foresight. It is the long gestation period in the development of new productive capacities which leads entrepreneurs systematically to overestimate future demand at the beginning of an upswing when they face an excess demand situation which is associated with an increase of orders and a rise of prices. Similarly, it reduces further investment activity at the end of an upswing, when an excess supply situation is experienced, which pushes the economy into a recession. Finally, the over-retrenchment of production activity is realised and a new upswing starts.¹ The myopia of the expectations formation process is reflected in the intertemporal price system which guides firms to overexpand production in the course of an upswing and to sharply contract production activity when an excess supply situation is experienced. Aftalion can thus be credited with further developing and integrating the *acceleration principle* – namely the idea that a relatively small increase (decrease) in the demand for consumption goods can produce a much larger increase (decrease) in the demand for capital goods – into a theory of the business cycle.

Structural theories of the business cycle, which have as their distinguishing feature the analysis of the interrelationship between changes in

¹ The lifting of an economy out of a trough is a weak point in many business cycle theories, and Aftalion's theory is no exception. For a more recent assessment of Aftalion's business cycle theory see Dangel and Raybaut (1997), who criticise his inadequate treatment of aggregate demand.

the production structure of the economy and macroeconomic fluctuations, occupied the centre stage of business cycle theory in Continental Europe from Tugan-Baranovsky's pathbreaking study until the 1930s. However, in the English-speaking world these theories had only a small impact. A notable exception was Dennis H. Robertson (1890–1963), who was particularly influenced by Tugan-Baranovsky and Aftalion, as shown in his joint review article (1914) reproduced in this volume. Although Robertson shared Hayek's later concern with the integration of 'real' and 'monetary' aspects of the business cycle, he was the first British economist to emphasise the role of real factors in the cycle. Interestingly for a British author, Robertson was critical of Tugan-Baranovsky's putting too much weight on monetary factors.¹

Friedrich August von Hayek (1899–1992) was among the most prominent contributors to business cycle theory in the interwar period. In 1927 he became the first director of the Austrian Institute for Business Cycle Research in Vienna, which had been founded by Ludwig von Mises. His Austrian theory of the trade cycle essentially is a monetary one. But while *monetary* factors *cause* the cycle, *real* phenomena *constitute* it. Although cyclical fluctuations caused by monetary factors, in particular credit expansion, are a key feature in modern industrial economics, it is the impact on the real structure of production which is most important. Interestingly, in the English edition of *Monetary Theory and The Trade Cycle* Hayek (1933, p. 41) added a new footnote in which he made the qualifying statement that his own theory of cyclical fluctuations was much closer to certain structural theories of the business cycle than the latter are to other non-monetary explanations such as underconsumption theories or his own theory is to purely monetary explanations which superficially regard changes in the absolute level of prices as most important for determining cyclical fluctuations. Hayek names Spiethoff and Gustav Cassel, who himself was strongly influenced by Tugan-Baranovsky and Spiethoff in developing his own ideas of the cycle,² as those non-monetary theorists who come closest to his own thinking.

Hayek's modifying statement is not surprising since from the very beginning he had emphasised that an important task for monetary theory is to explain changes in the structure of relative prices caused by monetary 'injections' and the consequential disproportionalities in the structure of production which arise because the price system communicates false information about consumer preferences and resource availabilities. While in *Monetary Theory and the Trade Cycle* he concentrates on the monetary causes which start the cyclical fluctuations, in *Prices and Production* he elaborates the changes in the real structure of production over time which constitute

1 For careful analyses of Robertson's studies and alternative theories of industrial fluctuations (Robertson 1915, 1926) see Presley (1979, Part 1) and Laidler (1995).

2 See Cassel (1923, Book IV).

those fluctuations. This refers to two important building blocks of his business cycle theory: Wicksell's analysis of cumulative processes caused by discrepancies between the money and the natural rate of interest and Böhm-Bawerk's theory of capital with its emphasis on the time structure of production.¹ Hayek's 'vertical' treatment of economic structure in the Austrian tradition focuses on the relationship between the fund of productive resources and the production of final output, that is, consumption goods which are produced with the aid of capital goods in processes which for technological and economic reasons require time. Capital goods, however, are no original factors of production but appear only as intermediate goods on the different stages of production. The longer the process needed to produce a certain amount of consumer goods, the greater is the stock of capital involved and the more productive is the process itself. The 'horizontal' approach to economic structure, on the other hand, is characterised by a completely different treatment of the durable means of production in which emphasis is on the circular character of economic relationships.²

The changes in the real structure of production over time which constitute the business cycle were developed by Hayek in the second of his famous 1931 London School of Economics lectures, 'The conditions of equilibrium between the production of consumers' goods and the production of producers' goods', which is reproduced in this volume. Here Hayek uses his famous triangle analogy. While the ordinate represents the time dimension of the structure of production, that is, the degree of roundaboutness, the abscissa measures the money value of the output of consumption goods. Slices of the triangle perpendicular to the time axis indicate the different *stages* of production among which the resources are allocated. The supplies and demands for resources at the various stages differ in their sensitivity to changes in the interest rate because of their different temporal dimension. Changes in the rate of interest will therefore have a systematic effect on the structure of relative prices that allocate resources among the different stages of production. The lower the interest rate, the longer are the production processes that a rational capitalist would adopt, thus drawing more resources into the early stages of production. This case is represented by a relative lengthening of the time axis of the Hayekian triangle.

In this 'Austrian' representation of the structure of production, or 'stages approach', a sequence of original inputs is transformed into a single

1 Two other key building blocks of Hayek's business cycle theory are Cantillon effects of changes in the money supply on the price structure (non-neutrality of money), and Ricardo effects of a shortage of consumption goods on the production of investment goods (disproportionality of circulating and fixed capital). See Hagemann and Trautwein (1998) for a more detailed analysis.

2 For a thorough comparison of the 'vertical' and the 'horizontal' treatment of economic structure, or the stages and the sectoral approach, see the contributions in Baranzini and Scazzieri (1990) and Landesmann and Scazzieri (1996).

output of consumable commodities. No distinction is made between fixed and circulating capital; both types of capital are 'intermediate products' or 'working capital', that is, goods in process that sooner or later will be turned into consumers' goods. The production process is thought of as being unidirectional, that is, causal, rather than circular. This way of tracing back the production process to some original factor(s) – such as labour (and land) – leaves unexplained the reproduction and expansion requirements of the stock of fixed capital goods.

It was exactly this unsatisfactory treatment of fixed capital goods in the Austrian model of production which came under severe attack when Burchardt (1931–2) set out to compare, contrast and combine the two most important alternative ways of conceiving the production system, the schemes of the stationary circular flow in Böhm-Bawerk and Marx, and thus undertook the first synthesis of the vertical or stages model and the horizontal or sectoral (interindustry) model. Burchardt criticised Böhm-Bawerk for mixing up two entirely different problems, namely the historical conditions of the original building-up of a capital stock, and the present conditions of reproduction of the existing capital stock. Second and most important, in an industrial economy the physical self-reproduction of some fixed capital goods is an essential technological characteristic, that is, a particular group of fixed capital goods (which Lowe (1952) later called 'machine tools') can be maintained and increased only with the help of a circular process in which these machine tools act as inputs. The role which these capital goods play in industrial production is thus analogous to the role of seed corn in agricultural production. It is therefore not technically possible to trace all finished goods back to nothing but labour (and land) and to treat fixed capital goods as the output of some intermediate stages in the vertical model, as Böhm-Bawerk and his 'Austrian' followers like Hayek have suggested.

Hayek was not unimpressed by the critique of Burchardt, which he regarded 'not only as the first but also as the most fruitful of all the recent criticisms of the 'Austrian' theory of capital' (Hayek, 1939, p. 23). In the section 'The Structure of Capitalistic Production' in his *Profits, Interest and Investment*, Hayek even concedes that the stages concept, which he had used as the production-theoretic foundation for his theory of cyclical fluctuations in *Prices and Production*, 'gives the impression of a simple linearity of the dependency of the various stages of production which does not apply in a world where durable goods are the most important form of capital' (Hayek, 1939, pp. 21–2). The stages concept may give an undue impression of linearity, while in fact production relationships may in many respects be rather circular in character. On the other hand, Hayek views the 'crude dichotomy of industry into consumers' goods industries and capital goods industries' as 'certainly wholly insufficient to reproduce the essential features of the complicated interdependencies between industries in actual life' since the 'capital goods industries are ... further

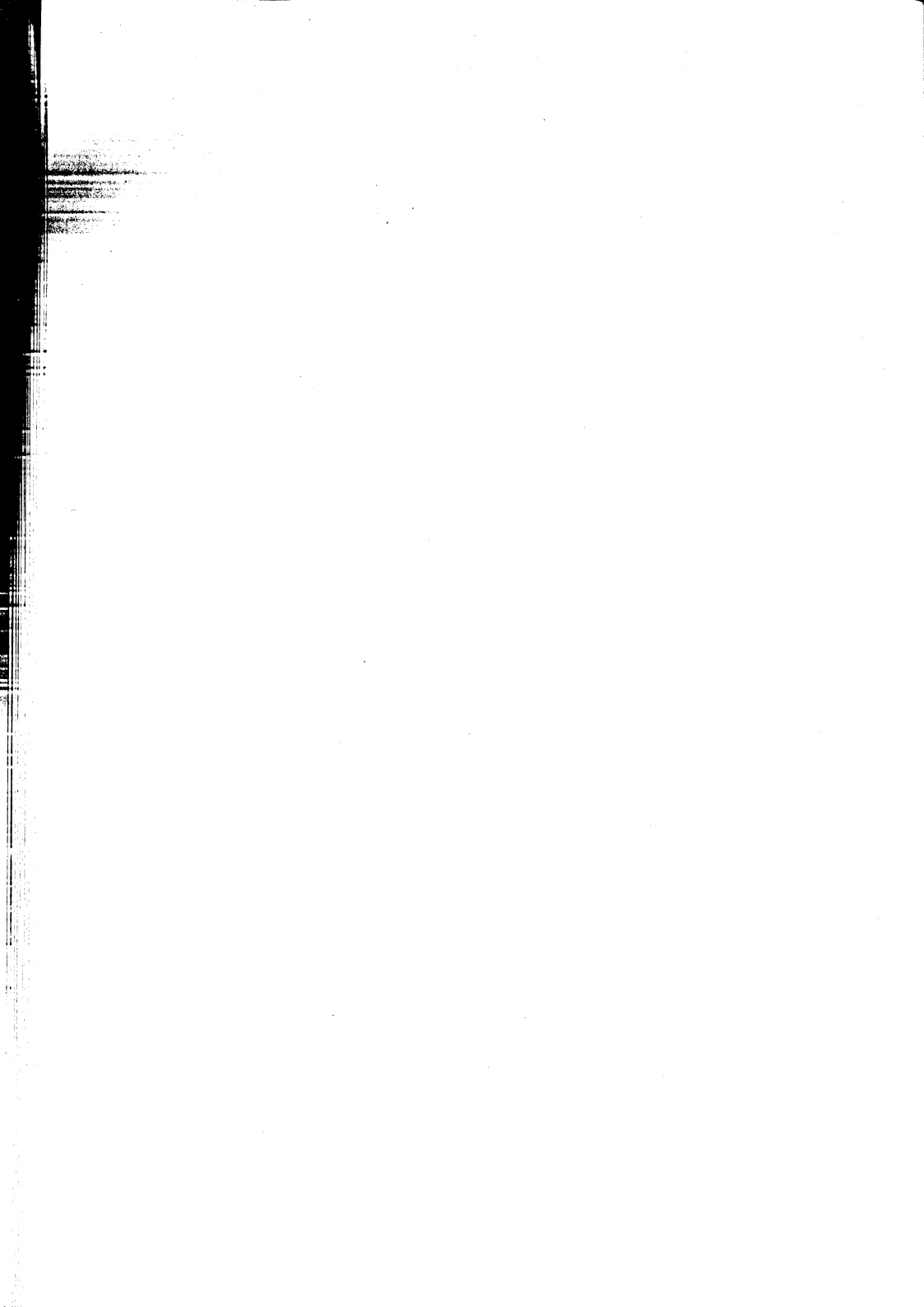
frequently induced by improvements in profit expectations and mentioned technical progress as a major factor behind such changes (Hayek 1933, pp. 191f.). Thus he recognised the importance of technical progress as part of the impulses and implicitly also part of the propagation mechanism for cyclical fluctuations. After the outbreak of the depression he paid little attention, if any, to technical progress and, like Mises, regarded the activities of the banks as ultimately being the cause of fluctuations. The basic function of his Ricardo effect, then, is to give a theoretical explanation for the upper turning point, that is, to show that, unless further injections of bank credit are prolonged and accentuated, an inflation-fed boom must sooner or later be reversed by a decline in investment. The Italian economists, on the other hand, emphasised social conflict, that is, the workers' reaction to 'forced savings' and their impact on firms' decisions, to explain the upper turning point of the cycle.

Howard S. Ellis (1898–1992) became well known with his *German Monetary Theory: 1905–1933* (1934) which gave the Anglo-Saxon world and a larger international audience a comprehensive survey on the literature in the German language. This book grew out of Ellis's 1929 Harvard dissertation which he had begun during his studies at the University of Heidelberg in 1924–5. The final section of the book, Part IV, deals with business cycle theory favouring a Schumpeter–Hahn approach of productive credit and innovative entrepreneurs and the theory by Mises and Hayek in which cyclical fluctuations are caused by unsustainable credit expansion leading to overinvestment. Ellis took his postdoctoral studies at the University of Vienna from 1933 to 1935. At the end of his stay the article 'The Significance of the Production Period for the Theory of Crises' was published in the Vienna-based *Zeitschrift für Nationalökonomie*, at that time the leading scholarly journal in the German language area, with Oskar Morgenstern as the key editor. The article which concludes this volume is based on a lecture Ellis gave to the Economics Society in Vienna in February 1935 and is translated into English. It shows Hayek and Schumpeter's influence on Ellis, and his attempts to reconcile their ideas. It was written in the middle of a period of heavy debate on capital theory, in particular on Böhm-Bawerk's concept of the period of production which played a key role in the business cycle theory developed by Hayek in *Prices and Production*, and was finally given up by Hayek in his *The Pure Theory of Capital* (1941) – not least so because of the fundamental critique raised by Morgenstern (1935).

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Volume II
Structural Theories of the Business Cycle



STUDIES IN THE THEORY AND HISTORY OF COMMERCIAL CRISES IN ENGLAND

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CHAPTER I

THE CAUSES OF CRISES IN THE CAPITALIST ECONOMY

The battle for the market constitutes the characteristic feature of contemporary economic life. A good market is virtually all that is needed by a present-day producer in a country where developed capitalism prevails, such as England. As soon as increased market demand for products of a particular kind appears, for whatever reason, such products are produced, not only in the required quantities, but in excess. There is almost never any danger of a shortage of capital or labour. Aside from rare moments of panic in the money markets, a profitable business will never lack for capital; the credit institutions are always at its disposal. Nor is the risk of the entrepreneur facing a shortage of workers any greater. Although the army of the unemployed does dwindle in prosperous times, it never completely disappears. Unemployment statistics show that there is always a market surplus of even the best and most skilful workers, those belonging to the labour guilds, the real aristocrats of labour. The percentage of unemployed in the labour guilds rises to very high levels in times of crisis and falls in prosperous times, but never sinks to zero.

But why is it that even in the best years, industry is not able to make use of all the productive forces at its disposal? Why does so much capital lie idle, why do so many workers remain unemployed?

Most entrepreneurs would reply, 'Because under today's economic conditions, the difficulty does not lie in producing a good but in selling it, finding a market for it.'

The importance of this latter task has relegated the former to the background. Just consider how complicated the organisation of selling is today, what efforts each entrepreneur must make to find a place for his product among the multitude of products of all sorts already overcrowding the market. As a rule, supply is always ahead of demand, overtaking it, and the producer must be prepared to try every possible means of stimulating demand. Everyone knows from personal experience the role that advertising plays in our times. What cunning, what tricks merchants have recourse to in order to snare the buyer! We must just be grateful that physical force

is not used. Advertisements thrust themselves before our eyes and we cannot brush them away like a bothersome fly. They are everywhere, gazing down on us from buildings in letters a metre high, blazing forth at us at night in brightly coloured lights, covering every free wall, every public transport vehicle with the most wondrous and fantastical images and finally thrusting their way into our homes. We are forced to turn our attention to the ingenious merchant's wares whether we want to or not. However, the organisation of selling is by no means confined to publications and advertisements. Today's entrepreneurs have created a complex and highly ramified network of commercial agencies, whose economic importance is hard to overestimate. This network has enmeshed the whole world like a spider's web. Every large company has numerous agents, some travelling and others settled in one place, occupied solely in finding customers. The replacement of wholesalers by these agents, which is characteristic of recent times, and the extension of direct contact between producers and retailers or consumers, have not reduced the army of those engaged in commerce but rather expanded it. Occupational statistics show that this army is growing everywhere at an enormous rate, far exceeding the growth in the number of those engaged in producing goods.

If to this network of agents of private industry we now add the many public and social institutions especially created to find markets for goods, such as consular agencies abroad, local, national and international exhibitions, museums of commerce, all sorts of associations for the promotion of commerce, exports, etc., then we can grasp what a large role the organisation of the selling of goods – of the market, in other words – plays in the modern economic order.

The market is the focal point where all the strands of today's economic life converge. It is the market that controls production, not production the market – such is the impression of every observer of modern life who does not engage in theorising. The historical experience of every capitalist country also appears to confirm this impression. Take England, for example. Throughout this whole century, England has swung periodically from prosperity to crisis. Trade expands, then a crisis ensues and trade and industry are laid low once more. When the depression has lasted several years, a new upswing begins. And why is an upswing followed by a decline? Why is the development of industry interrupted by crises? Is it because the productive forces diminish, because there is insufficient capital to provide employment for all available workers, or because there are not enough workers to set the dead capital in motion? The truth is just the opposite. It is precisely in times of depression that enormous capital sums accumulate in the banks, looking in vain for an investment outlet. Precisely at such times, even the most unobservant are struck by the colossal productive forces of modern industry lying motionless, dead and inert, as if the social organism had suffered a stroke. On the other hand, the great army of the unemployed clearly shows that there is no question of a short-

age of labour. The causes of the business slowdown are rooted exclusively in the domain of the market. The depression occurs because of a slackening in sales, or, more precisely, because the prices at which goods can be sold are not profitable for the entrepreneurs. An improvement in the market, an increase of a few percent in the price of goods, is all that is needed to transform the picture as if by magic, to set the machines turning, provide employment for the workers and fill the whole hive of industry with the hum of industrious work.

But what is the basis for the great power of the market in today's economy? This is what we shall try to elucidate in what follows.

In the market, supply and demand meet. The volume of supply assumes concrete form in the quantity of goods offered for exchange. There is nothing mysterious or incomprehensible about supply. Demand, on the other hand, does not have a similar tangible, material form. Demand contains a psychological component of desires and needs rooted deep within us. Demand appears as something intangible and indefinite, following laws quite different from those of supply.

Thus the whole difficulty in elucidating the role of the market in the modern economy lies in analysing the mechanism of demand.

But demand only acquires its peculiar pronounced mysteriousness in the later stages of development of the exchange economy. In direct exchange, so-called exchange in kind, the matter is quite simple. In this case, what is needed in order to acquire another's product? Clearly, the supply of one's own product. In other words, each person's demand is directly determined by his supply. The subjective element of desires and needs determines the *content*, the direction, of demand, but its *extent*, its size, is fixed by an objective factor, that of supply.

A good's price (its equivalent), in the general sense of the word, is the name given to the quantity of goods which one gives up in order to acquire that good. For example, if grain is exchanged for cloth, then the amount of grain given for the cloth is the price of the cloth, and the corresponding quantity of cloth is the price of the grain. The prices of the two goods exchanged, constituting, as they do, a relationship between the values of two goods, obviously cannot rise (or fall) simultaneously. The relative prices of the grain and the cloth cannot both rise (or fall) at the same time. Thus, when goods are exchanged directly, a general fall (or rise) in prices is quite inconceivable; in other words, a state of the market in which there is an excess of all goods exchanged relative to one another is inconceivable. If the quantity of cloth offered for exchange increases, while that of corn remains unchanged, then the price of cloth must fall; the producer of cloth will receive a smaller quantity of grain for each piece of cloth. And if the increase in the supply of cloth has not been caused by a fall in the cost of producing a given quantity of cloth, then we have a so-called overproduction of cloth. But since the relative fall in the price of cloth is synonymous with a relative rise in the price of grain, overproduction of cloth is at the

same time underproduction of grain. If the supply of grain had risen to the same degree as the supply of cloth, the price of cloth would have remained unchanged, since if two magnitudes are multiplied by the same number, their ratio remains unchanged. Thus the fall in the price of cloth arose from the disproportionate composition of social production; if some of the productive forces of society had been diverted from the production of cloth to that of grain, the prices of the two products would have remained unaltered and no partial overproduction would have occurred.

But is it not possible that sales of the increased quantities of both products may run up against the impossibility of any further increase in consumption? Suppose that the cloth producer does not need any more grain and the grain producer does not need any more cloth. In that case, will we not see an overproduction of both grain and cloth?

Such a situation is, however, quite impossible, for the following reason. Let us assume that only two products – grain and cloth – are exchanged, and that both are produced for purposes of exchange. If the producer of grain (cloth) does not need any more cloth (grain), what reason does he have to increase his own production? Why go to the trouble of turning out products if he has no need whatever for new products? Economic work presupposes a definite purpose, namely that of increasing the material means available to satisfy the needs of the individual performing the work. An individual who did not need any new products and nonetheless produced new products would deserve to be put in an insane asylum.

If the grain and cloth producers have no need for any additional amounts of each other's products, neither of them will increase his own output, and so no overproduction of products will occur. In the simple exchange economy we are considering, which has no money, only a need for some particular product can impel an individual to engage in production.

This will also remain true when more than two different products are being exchanged. Let us assume that it is not only cloth and grain that are being exchanged, but other products as well, say wine, hides and weapons. Cloth will be exchanged for grain, wine, hides and weapons; grain will be exchanged for cloth, wine, hides and weapons; wine for grain, weapons, hides and cloth, etc. It may be that the increase in production of grain and cloth is not accompanied by an increase in the demand for those particular goods. There will then be overproduction of cloth and grain, while, on the other hand, some of the other products (wine, hides, weapons) are being produced in insufficient quantities, since unsatisfied need for these products is the only possible motive for the increase in grain and cloth production. The overproduction of grain and cloth thus turns out to be underproduction of other goods, a lack of proportionateness in the composition of social production. If production of weapons, wine and hides had been increased instead of that of grain and cloth, then the equilibrium

between the supply of products and the demand for them would have remained undisturbed.

At this stage of the exchange economy, overproduction of products can only be partial. On the other hand, general overproduction – i.e. a general decline in the relative prices of products – is not only impossible, but positively unthinkable, just as it is unthinkable for two magnitudes to simultaneously rise (or fall) relative to one another.

Thus, when products are exchanged directly, the demand for each individual product is directly determined by the supply of the others. If the composition of social production is proportionate, then supply and demand must necessarily be in equilibrium. If one can speak of a market at all in the case of a simple exchange economy without money, then that market is not a unified whole, alike for all products. In such a market a general movement of prices in one direction or the other, whether a general rise or a general fall, is impossible, and consequently a general improvement or worsening of selling conditions is likewise impossible. On the contrary, an improvement in selling conditions for one of the goods being exchanged is synonymous with a worsening in selling conditions for some other product.

If the price of grain (in terms of cloth) rises, the price of cloth (in terms of grain) falls; if the market for grain is favourable, that for cloth is unfavourable. It is as if the whole market were divided into single rooms, separated from one another by walls; demand for each product is determined by particular, individual circumstances, and there is a complete absence of anything that could be termed the general mood of the market.

Let us now turn to analysis of the market in a money economy, starting with a simple goods economy. Goods are produced by small, independent producers working with their own means of production; work tools play a strictly subordinate role, both in the production process and in the market for goods. The great majority of the goods exchanged are for direct consumption. Under the system of exchange in kind, products are exchanged directly for other products. In the money economy, however, the exchange process falls into two parts: goods for money and money for goods, sale and purchase. Money, which plays the role of mediator in the exchange process, can by no means be placed on a par with other goods. While it is a good, it is a very peculiar one, which fulfils a very particular function in the process of the circulation of goods. There is one difference between the good 'money' and all other goods which requires particular emphasis, namely that money, as a general means of purchase and payment, is the object of general, unrestricted demand, while the demand for all other goods can, of necessity, only be limited. This gives rise to a radical difference between the two halves of the exchange process: the act of selling acquires an incomparably greater significance in the process of the metamorphosis of goods than that of buying. When a good is sold, the seller receives something for which demand is unrestricted and

unquestionable in exchange for something, demand for which is doubtful and limited. Under normal market conditions, a purchase takes place without any difficulties; the sale of a good, on the other hand, is always the riskiest element in the metamorphosis of goods.

Although the first act of this metamorphosis, namely the sale, presupposes the second, the purchase, nonetheless, as Marx aptly observes, the time and place of this second act are by no means predetermined by the first. The sale of the good may occur in one market, while the purchase takes place in another, and the purchase need not occur immediately after the sale, but can be postponed as long as desired. Indeed, it is possible for no purchase at all to follow on the sale; the seller can interrupt the process of the circulation of goods by retaining the money as a store. It is known that in the countries of the Far East, especially in India, vast amounts of silver money are constantly being withdrawn from circulation in this way.

Thus the transformation of the simple exchange process, in which goods are exchanged directly, into a complicated, two-sided process of sale and purchase is by no means simply a formal change which does not affect the nature of the exchange process. On the contrary, the introduction of money as a mediator of exchange positively revolutionises the exchange process. And this is true even quite apart from the possibility of interrupting the circulation of goods.

We have seen that when products are exchanged directly, a general fall (or rise) of the prices of goods is impossible. When exchange is mediated by money, the price of each good is expressed in terms of money. There is therefore nothing impossible in a general rise (or fall) in the money prices of goods.

Every change in the value of the good 'money' must affect the prices of the other goods. A rise (fall) in the value of money expresses itself in a general fall (rise) in the prices of goods. However, we shall not dwell on changes in the prices of goods caused by fluctuations in the value of the money substance. It is far more important to determine the influence on the prices of goods of the goods market itself.

Let us return to our earlier example, that of the exchange of grain for cloth. When exchange in kind occurs, a fall in the price of grain is synonymous with a rise in the price of cloth. But how are the prices of grain and corn related when exchange is mediated by money?

When goods were exchanged directly, the demand for cloth was determined by the supply of grain. When exchange is mediated by money, it is still true (leaving aside interruptions to the circulation of goods through the withdrawal of money from circulation) that each goods producer's demand for goods is determined by his supply.

In this respect there is no difference between exchange in kind and exchange mediated by money. And how does the producer of goods actually obtain money to purchase the goods he needs? Clearly, through the

sale of his own goods. Thus, the producer's purchases are determined by his sales, in other words, his demand is regulated by his supply.

Thus, in the case of money-mediated exchange (as also in that of exchange in kind), the grain producer's demand for cloth is determined by the supply of grain. If the supply of grain has risen and exceeded the cloth producer's normal demand, the result will be a fall in the money price of grain. Since grain is an absolute necessity of life, and the prices of such goods tend, in accordance with a well-known law, to fluctuate more than their supply, the fall in the price of grain will be greater than the growth in its supply, and the grain producer's total revenue will fall. But if he receives less revenue, he will pay less for cloth. Thus, the fall in the price of grain also leads to a fall in the price of cloth.

If the supply of one of the two goods, grain, exceeds demand, not only does the money price of grain fall as a result, but so does that of cloth. The prices of the two goods do not move in opposite directions, as happened under exchange in kind, but in the same direction.

Let us now examine this case somewhat more closely. There has been no change in the supply of cloth, cloth has not been produced in excess, and yet its price has fallen, just like that of the good – grain – that was produced in excess. The prices of both goods have fallen, and the producers of both grain and corn have been hurt, in that their money revenues have fallen.

Price is the main regulator of the production of goods. In the price, each producer has a sort of indicator of the mood of the market. A rise in the price causes production to expand, a fall in the price causes it to contract. In the case we have been considering, this indicator of the market – price – makes unfavourable statements about both of the goods being exchanged, grain and cloth.

If grain is being exchanged for other goods in addition to cloth, then a fall in the price of grain will lead to a fall in the prices of all these goods. The fall in goods prices will be general.

Thus, the introduction of money as a mediator of exchange completely revolutionises the market. The market comes to rule over production. An unfavourable market mood will adversely affect the prices of even those goods that have not been produced in excess. The price of each good becomes highly dependent on the prices of all other goods.

In the eyes of the producers, a general fall in the prices of goods appears as a sign of a general excess of the supply of goods over demand for them, i.e. a general overproduction of goods. And indeed, the general character of this overproduction is confirmed by the fact that a general contraction of production usually ensues, with every producer trying to push up the price of his good by the usual means, namely by reducing the supply.

Thus, when exchange is mediated by money we encounter a totally new phenomenon, that of general overproduction of goods, which is quite unknown when exchange in kind is practised. In the money economy, overproduction of one good is transformed into overproduction of all

goods, and the market combats this general overproduction by a general contraction in the production of goods.

This is a manifestation of that mysterious, paradoxical and characteristic phenomenon of today's economic order: abundance transformed into shortage, excessive wealth giving rise to the sufferings of poverty, the profusion of productive forces resulting in a restriction of production.

There can be no doubt of the possibility of a general overproduction of goods, i.e. a state of the market in which the money-backed demand for all goods is smaller than the supply, resulting in a general fall in prices, for every capitalist country is familiar with this state from its own experience. It is in *explaining* this phenomenon, determining its real causes, that the whole difficulty lies.

To point to the excess of the supply of goods over the demand for them as the cause of general overproduction of goods would be to content ourselves with noting the phenomenon rather than explaining it. The fall in the prices of goods is an unmistakable sign that equilibrium between demand and supply is disturbed. But how is it possible for total demand to fall below total supply? That is precisely the question.

It was established above that in a money economy, just as when products are exchanged directly, demand for products is ultimately determined by supply. Thus, total demand must correspond to total supply. If a disproportionate composition of social production has led to some products being produced in quantities that are excessive relative to demand, this means that production of other products falls short of demand. If there are too many of some products, that means that there are too few of others.

However, in the case we are considering, all goods are produced in excess, so that all their prices fall. Can this mean that the thesis of the dependence of demand for goods on their supply must be qualified?

By no means. We have seen how general overproduction of goods arises in the money economy. *The basis for general overproduction lies in a partial overproduction.* Some goods are produced in quantities that exceed normal demand. Their prices fall. The fall in money income reduces the purchasing power of the owners of these goods. There ensues a fall in the prices of all those goods in whose purchase this purchasing power is exercised, so that as a result of the excessive production of some goods, all goods turn out to be present in excess.

Aside from the effects of the composition of social production, the total supply of goods could only exceed total demand if for some reason money were being withdrawn from circulation. If this is not the case, then overproduction of goods can only arise from a disproportionate composition of social production. Every producer of goods who spends his money income gives rise to a demand for a quantity of goods of equal value. Therefore, if there is an excess of some goods, that means that there are insufficient quantities of some other goods. The material basis for the money-mediated exchange of goods is the same as that for direct exchange of products,

namely the manufacture of goods. If the composition of social production is proportionate, then the demand for products must be the same as their supply. For exchange in kind, this holds unconditionally, for money-mediated exchange, with the *one* qualification that a sale is always followed by a purchase, that the exchange of goods is not interrupted by the withdrawal of money from circulation.

So, the real basis for money-mediated exchange is precisely the same as that for exchange in kind. Selling and buying, the transformation of goods into money and of money into goods, is in the last analysis just a new form of the exchange of one product for another. But the change in the form of exchange also fundamentally alters its content. The market becomes a single whole, takes on a unified character, becoming not just the regulator of production but its ruler.

Phenomena quite unknown under exchange in kind now become possible: general overproduction of goods, poverty brought about by wealth.

Simple production of goods, while it involves the *possibility* of a general overproduction of goods, certainly does not make such overproduction *necessary*. On the contrary, the general economic circumstances of small, independent producers of goods are such that this possibility very seldom becomes reality. As observed earlier, when simple production of goods prevails, the bulk of goods exchanged are items for direct consumption. The immediate purpose of production is consumption. Almost all goods are produced directly for consumption, although the fact of exchange itself implies that the good is not being made to be consumed by the producer himself.

There is a close connection between production and consumption, even if it is more complicated than in a non-exchange economy where goods are produced for own consumption. The direction consumption takes is determined by the consumption needs of the population of a small area. These needs display considerable stability, and demand for products grows very slowly, at the same rate as the population. Since work implements play a subordinate role in production and machines are almost unknown, rapid growth of the population's productive forces, which consist mainly in the workers' own accumulated skill and dexterity, is impossible. Under such conditions, namely steadiness in the demand for and supply of goods, only quite exceptional circumstances could bring about a state of general overproduction in the goods market. Where small-scale production is the rule, the only goods subject to major price fluctuations are those whose production is closely dependent on atmospheric phenomena, as is the case, for example, with all agricultural products. Supply of these products is subject to enormous fluctuations, but the effect of these on the market is considerably weakened by the fact that these products only enter the market to a limited degree, since they are mostly consumed in the producer's own household. For example, agricultural products played a very small role in the goods market of medieval towns, which can be considered the

historical paradigm of the organisation of small-scale production. For this reason, fluctuations in the prices of agricultural goods do not lead to any major fluctuations in the prices of other goods in a simple goods economy.

Thus, while in the case of direct exchange of goods, general overproduction of goods is completely impossible, where a simple goods economy prevails, general overproduction, while possible, is by no means inevitable.

Let us now proceed to an analysis of the market in the present-day form of the goods economy, namely the capitalist economy.

The basic difference between the capitalist and the simple goods economy lies in the domain of production rather than that of exchange. The small-scale producer of goods does his work himself, his aim being to obtain provisions by exchanging his own products for those of other producers. The capitalist entrepreneur employs workers, and his aim is profit. Part of this profit is used for the capitalist entrepreneur's personal consumption, while another part is accumulated and transformed back into capital. The consumption of workers engaged in capitalist production has an economic significance quite different from that of the consumption of small-scale goods producers, a difference whose nature is as follows. The immediate purpose of production in the simple goods economy is to turn out items of consumption. In the simple goods economy, the perfecting of technique and work implements, increase in workers' skill and dexterity, and growth of productivity in general all lead to an increase in the stock of consumption goods in the hands of the population. There is no way in which the work implement of an independent producer can be his competitor. The producer uses these work implements only to the extent that they serve to increase his comfort and prosperity, enabling him to raise his consumption and improve its quality. In an economy of small-scale goods production no conflict can arise between the expansion of production and the growth of national consumption. Human beings remain the masters of production, while their work implements, the means they use to perform their work, remain their faithful servants.

In capitalist production, the relationship between human beings and their means of working undergoes a radical transformation. It is not the worker, working with his implements, who is the head of a capitalist enterprise, but the capitalist, who plays no part in the immediate work. From the standpoint of the capitalist entrepreneur, the worker is just as much a means of production as the implement in the worker's hands or the machine of which the worker is a living appendage. Both the worker and the machine are capital to an equal degree. Maintaining the worker's life is one of the necessary conditions of the production process, just as feeding the furnace with coal is necessary to keep the machine going. But, just as the acquisition of fuel for the machines is not the purpose of capitalist production, neither is the production of provisions for the working class.

One of Marx's greatest contributions was to point out the 'fetishistic character' of goods. The greatest difference between a goods economy and any other lies precisely in this fetishistic character of the world of goods. The goods economy is based on the social division of labour, and in it the linkage among individual producers is unbroken; in the goods economy, just as in the primitive community, people work for one another. But the bonds linking individual producers in the goods economy are goods, i.e. objects; relationships among people are masked by relationships among objects, or rather are expressed in objects, objectified. As a result, objects likewise become imbued with spirit and start to lead a conscious existence, as it were. The prices of goods rise and fall quite independently of the will of individual producers of whose labour they are the product, as though these goods were independent beings possessed of their own volition. The inanimate products of human beings become their own masters. The embodiment of this fetishism, this objectification of the social relationships that govern human beings, is the market. The power of the market is the power of human beings' social relationships, which have assumed the form of material relationships among goods.

The capitalist economy goes yet further in identifying objects with people. Exchange of goods has, as it were, transformed objects into living, and indeed higher, beings; capitalist production transforms people, as it were, into things. Peoples' labour power, in other words people themselves, become goods, bought and sold on the market just like any product of human labour. Workers become, so to speak, living means of production, tools endowed with the faculty of speech. This equivalence in kind and worth between people and machines in capitalist production appears in full clarity in the replacement of workers by machines. Every increase in wages is accompanied by increased use of machinery. Everywhere, workers encounter their strongest and most dangerous competition from the products of their own labour, namely machines. Capitalism transforms the human being from an end in himself into a mere means of production. This is, incidentally, something which capitalism has in common with other modes of production based on the appropriation of surplus product by social classes which do not participate in productive activity, such as the slave and feudal economies.

Marx aptly indicated this feature of capitalist production by subsuming living workers within the category of capital. And indeed, a wage worker is nothing but a subspecies of capital. In the capitalist economy, it is only part of the population's total consumption that constitutes the direct purpose of production rather than a means of production, namely the consumption of the classes that appropriate the surplus product.

Thus, in the capitalist economy the connection between national consumption and national production takes on quite a new character. In the capitalist production process, the wheat needed by workers, the oats used to feed horses and the coal required to drive machines are all things which

fall into one and the same category, things which are necessary for production and are produced for that reason alone.

If technical and economic considerations make machines more advantageous means of production than workers, then workers are replaced by machines, and instead of consumption goods for human beings, fuel for machines is produced. In the capitalist economy, consumption goods for workers are produced only to the extent that the worker is indispensable in his capacity as a subjective factor of production.

But does the utilisation of capital not require a market, and are sales of goods not therefore ultimately a function of the volume of national consumption in the capitalist economy as well? Is realisation of the social product, and thus the utilisation of capital, really possible if national production is growing faster than national consumption? In the capitalist economy, are the limits of social production not therefore set by social consumption, just as in every other economy? All these questions arise quite naturally, and would appear to imply a complete refutation of the above considerations. And yet the latter remain entirely correct. We therefore now proceed to an analysis of the entire process of the reproduction of social capital.

The exploitation of social capital is mediated by money. Goods have to be sold in order to transform them into new goods. But when conducting an abstract analysis of the reproduction of social capital, we can totally disregard the role of money in the process. By doing so, we in no way deny that interruptions to the circulation of money lead to disturbances in the process of reproduction of social capital. At the moment, however, it is not our concern to investigate these interruptions. Insofar as money only plays an intermediary role in exchange, products are bought with other products. That assumption will form the basis of the following analysis.

Social reproduction of capital consists in the technical reproduction of capital's various elements in their material form and in the replacement of some of them by the others in the act of exchange. As a result of this reproduction and exchange, social capital is utilised and the capitalist's profit (more precisely, all income not based on work – what Rodbertus terms 'rent' (*Rente*)) is generated.

The following schemata relate to the reproduction of social capital on a constant as well as on an expanding scale (accumulation of capital). The former case is described in the first schema.

Schema no. I

The simple reproduction of social capital

Section 1

Production of means of production

$$720_p + 360_a + 360_r = 1440$$

Section 2

Production of workers' consumer goods

$$360_p + 180_a + 180_r = 720$$

Section 3

Production of capitalists' consumer goods

$$360_p + 180_a + 180_r = 720$$

This schema (modelled on the well-known Marxian schema in volume II of *Capital*) is designed to illustrate how capitalist production is divided up when the entire surplus product goes to the capitalists' consumption. The first term in each of these three-term sums refers to the value of the means of production used in the production section in question (in millions of pounds, marks, francs, etc.); the second refers to the value of the wages of the workers in question, and the third to the value of the surplus product (the rent, in Rodbertus's sense, which for the sake of simplicity we identify with the capitalists' profit).¹ In all three sums the same relationship of the value of the means of production to wages and profits is assumed. The first section expresses the production of the means of production, the second that of the workers' consumer goods, and the third that of the consumer goods of the capitalists (more precisely, all those classes that share in the surplus product). The absolute numbers chosen are quite arbitrary and of no significance. In accordance with the Marxian procedure, the distinction between fixed capital and circulating capital has been disregarded for the sake of simplicity. Although in fact only a part of the means of production is consumed in a year and has to be replaced *in natura*, we have assumed that the means of production are completely used up and must be completely replaced in one production period, in other words, that the entire means of production turn over just like circulating capital.

The third section of our schema relates to the capitalists' consumer goods. How can goods of this kind (with a value of 720) be realised on the market? The schema provides a clear answer to this question. A quarter of these goods will be consumed by the capitalists of this section itself (180); the same quantity will be consumed by the capitalists of the second section (whose profit is also 180); the remainder will be consumed by the capitalists of the first section (whose profit amounts to 360). In exchange for the products they sell, the capitalists of the third section will receive means of

1 I do not use the usual Marxian terminology (constant capital, variable capital, surplus value), since I am not basing myself on Marx's theory of surplus value. In my view, in the creation of the surplus product (i.e. rent) there is no difference whatsoever between human labour and inanimate means of production. Machines can be designated as variable capital with as much justification as human labour, since both of them produce surplus products. On this issue, see my Russian articles, 'The fundamental error in Marx's abstract theory of capitalism' and 'The law of value and the rate of profit' (in the Russian journal *Scientific Review*, May 1889 and March 1900); also chapter VII below.

production worth 360 and the workers of the same section will receive consumption goods worth 180. In this way the realisation of all the third section's goods is carried out.

The second section's goods (workers' consumer goods, also to a value of 720) are realised in the following manner: a quarter of these goods (180) are consumed within the section itself by the workers employed in it; a further quarter (180) goes to the consumption of the third section's workers, and one half (360) to the consumption of the first section's workers. In exchange for these goods, the second section's capitalists receive goods for their own consumption worth 180 and means of production worth 360.

Of the first section's goods (means of production), whose value is 1440, half (720) are used within the section itself; a quarter (360) is needed for the second section's production and another quarter for the third section's production. In exchange, the first section's capitalists receive goods for their own consumption worth 360 and the same section's workers receive provisions worth 360.

Demand for all goods equals supply. The value of all the means of production created, 1440, equals the value of the means of production needed to continue total social production at the same level ($720 + 360 + 360$). The value of the workers' consumption goods, 720, equals the sum of all wages ($360 + 180 + 180$), and the value of the capitalists' consumption goods – likewise 720 – equals the sum of all profits ($360 + 180 + 180$). Each section's goods are partly exchanged and used within that section itself and partly exchanged for goods from the other two sections.

When considering this schema, it must be especially stressed that the means of production are produced and marketed alongside and simultaneously with the workers' and capitalists' consumer goods. This would seem completely obvious, but prior to Marx, the greatest error made in analysing the process of the social reproduction of capital was precisely to disregard the significance of the means of production as a necessary component of the social product. The whole classical school of economics, from Adam Smith to J. S. Mill, based their analysis of this process on the quite untenable assumption that the value of the annual output of goods went into wages, profits and rent only. Under this assumption, the value of the means of production is omitted altogether. Marx quite rightly called this doctrine 'astonishing'. This utterly mistaken assumption is the main source of all the obscurities and the irredeemable confusion in the controversy between Ricardo, the two Mills and J. B. Say, on the one hand, and Malthus, Chalmers and Sismondi, on the other, on the possibility of a general overproduction of goods. So, in analysing the social reproduction of capital it is imperative to take account of the fact that social capital is used to manufacture means of production as well as consumer goods.

The case of the simple reproduction of social capital which we have considered is very simple and poses no problems: if all profit is spent on the capitalists' consumption, then it is easy to see that, given a proportionate

composition of social production, demand for all goods must equal their supply. The other case, that of capital accumulation, is far more complicated. Let us assume that the capitalists no longer spend all their profits on consumption, perhaps because competitive conditions oblige them to capitalise some of them. In this case, will the social supply of goods not exceed the social demand?

We cannot assume that the capitalists hoard the portion of their profits that they do not spend on themselves, simply storing it away in their safes. We shall assume that the capitalists endeavour to capitalise that part of profits not spent on their own consumption, in order to obtain further profits. We shall aim to represent schematically a division of social production in which this endeavour is fully realised.

The following schema shows the accumulation of social capital on the assumption that half of all profit is always capitalised.

Schema no. II

Reproduction of social capital on an expanded scale (accumulation of capital)

First year

Section 1

Production of the means of production

$$840_p + 420_a + 420_r = 1680$$

Section 2

Production of workers' consumer goods

$$420_p + 210_a + 210_r = 840$$

Section 3

Production of capitalists' consumer goods

$$180_p + 90_a + 90_r = 360$$

Second year

Section 1

Production of the means of production

$$980_p + 490_a + 490_r = 1960$$

Section 2

Production of workers' consumer goods

$$490_p + 245_a + 245_r = 980$$

Section 3

Production of capitalists' consumer goods

$$210_p + 105_a + 105_r = 420$$

Third year*Section 1*

Production of the means of production

$$1143\frac{1}{3}_p + 571\frac{2}{3}_a + 571\frac{2}{3}_r = 2286\frac{2}{3}$$

Section 2

Production of workers' consumer goods

$$571\frac{2}{3}_p + 285\frac{5}{6}_a + 285\frac{5}{6}_r = 1143\frac{1}{3}$$

Section 3

Production of capitalists' consumer goods

$$245_p + 122\frac{1}{2}_a + 122\frac{1}{2}_r = 490$$

The first schema depicted the reproduction of capital under the assumption that the capitalists consume all their profits. Let us now assume that competitive conditions oblige the capitalists to spend only half of their profits on personal consumption, while capitalising the rest. If the part of capital which is saved lies unused, it will not generate any profit. In order to obtain a yield from his savings, the capitalist must put them to use, but not for his personal consumption, but productively, to expand production. But if all branches of social production expanded equally, the capitalists would not have all equally attained their goal of accumulating capital and increasing their profits, since a considerable portion of the goods produced would not be needed by anyone, namely the bulk of the goods for the capitalists' own consumption. Most of these goods would remain unsold, since under our assumption the demand for them has fallen. At the same time, those goods for which demand has increased (the means of production and workers' consumer goods) would appear on the market in insufficient quantities. So, there is only one way for the capitalists to capitalise profits, namely by altering the composition of social production. This is by no means a simple matter, but what interests us here is not the process by which this change occurs, but its results. Schema no. II depicts a composition of social production which makes possible the full realisation of the capitalists' endeavour to capitalise half their profits.

In this schema the total value of social output in the first year is assumed to be the same as in schema no. I (2880); the value of the total amount of capital advanced (i.e. of the means of production and the workers' consumer goods) likewise remains the same. The capital is the product of previous production, the quantity of which must be considered as given.

Likewise, in schema no. II the same relationship of the value of the means of production to that of wages and to profits is assumed as in schema no. I.

The only difference between schema no. II (first year) and the first schema lies in a different composition of social production. In schema no. I, the composition of social production was such that capital did not grow

and all surplus product was used for the capitalists' personal consumption. In schema no. II, the accumulation of capital is required by the social division of production itself.

The total amount of profit in the first year is the same in schema no. II as in schema no. I, namely $420 + 210 + 90 = 720$. But only 360 worth of capitalists' consumer goods are produced, i.e. half as much as in schema no. I. To make up for this, other goods are produced in greater quantities, namely 240 more of means of production and 120 more of consumer goods. Our task is to show how it is possible for the newly accumulated capital to be used productively, even though the capitalists' demand for consumer goods has halved.

This newly accumulated capital will be used in the second year to expand production. Demand for means of production in the second year exceeds that in the first year by 240 (the first year's production needed means of production to the value of $840 + 420 + 180 = 1440$, but the second year's production requires them to the value of $980 + 490 + 210 = 1680$); demand for workers' consumer goods is 120 greater in the second year than in the first (wages in the first year are $420 + 210 + 90 = 720$; those in the second year are $490 + 245 + 105 = 840$). Thus, the first year's surplus means of production and workers' consumer goods will be swallowed up by the second year's production. The products turned out in the first year will be disposed of as follows. 360 of capitalists' consumption goods (section 3) have been produced. In accordance with our assumption, the capitalists consume only half of their profits. Since the profits of section 1's capitalists in the first year are 420, their demand for consumer goods will be 210, the demand for consumer goods by section 2's capitalists will be 105 and that of section 3's capitalists will be 45. Total demand amounts to 360, i.e. it fully covers the supply of these goods. Workers' provisions have been produced in the first year to the value of 840. Goods of this kind are required for the expanded production of the second year to the value of 490 for the first section, 245 for the second section and 105 for the third section, so once more the total amount equals the supply. Demand for means of production for the second year's production (980 for production of section 1, 490 for that of section 2 and 210 for that of section 3) is likewise equal in value to the means of production turned out in the first year (1680). In this way, all of the first year's products are sold in the second year.

But what purpose is served by the second year's expanded production? Are we entitled to assume that demand for means of production and workers' provisions is greater in the second year than in the first? As before, we assume that in the second year, just as in the first, the capitalists turn half their profits into capital rather than using them for personal consumption. The composition of the second year's social production is such that, once more, half the profit is accumulated. Demand for the second year's products arises from the expanded production of the third year.

At the end of the second year, 1960 worth of means of production, 980 of workers' provisions and 420 of capitalists' consumption goods have been produced. Let us now see how these products can be sold.

Total profits in the second year come to 840 (490 + 245 + 105). According to our assumption, the capitalists spend half this profit on their own consumption. So we have a market to the value of 420 for capitalists' consumer goods produced in the second year. The means of production for the third year's expanded production ($1143\frac{1}{3} + 571\frac{2}{3} + 245$) are 1960, equal to the value of the means of production turned out in the second year; the third year's wages ($571\frac{2}{3} + 285\frac{5}{6} + 122\frac{1}{2}$) are 980, equal to the workers' provisions produced in the second year. Thus, all the second year's products are sold in the third year, the market for them having been created by the third year's expanded production.

It is not necessary, in my view, to continue this analysis of the composition of social production to the fourth, fifth and subsequent years. The above schemata should suffice to clearly demonstrate a principle that is very simple in itself, but can easily give rise to objections from those with insufficient understanding of the process of the reproduction of social capital, namely the principle that capitalist production creates its own market. If the productive forces suffice to expand social production, then, given proportionate composition of social production, demand will also expand correspondingly, because under these conditions every newly produced good represents new purchasing power for the purchase of other goods.

Comparison of the simple reproduction of social capital with its reproduction on an expanded scale enables us to draw the highly important conclusion that in the capitalist economy, demand for goods is, in a certain sense, independent of the total volume of social consumption: the total volume of social consumption can fall at the same time as total social demand for goods is rising, absurd as this may seem from the standpoint of 'common sense'. The accumulation of social capital leads to a reduction in the social demand for consumer goods and at the same time to an increase in the total social demand for goods. Thus, in the case of reproduction of capital on a constant scale, social demand for consumer goods in schema no. I amounted to 1440 (workers' consumption being 720 and capitalists' consumption 720) and demand for all goods to 2880. In the case of capital accumulation (schema no. II), in the second year, consumer goods to the value of 1400 were produced (workers' consumer goods to the value of 980 and those of the capitalists to the value of 420), but the value of all goods produced amounted to 3360. As we have seen, all these goods – consumption as well as production goods – were absorbed by the third year's social consumption and production. Thus, total social production of goods in schema no. II (second year) is considerably greater than that in schema no. I, but production of consumption goods is less, without this disturbing the equilibrium between supply and demand in the least.

In other words, the volume of demand for goods in the capitalist economy is by no means determined by the volume of consumption. It is not consumption but production that is the determining factor in the capitalist economy. The capitalist entrepreneur endeavours to achieve the greatest possible profit, but not to produce the greatest possible quantity of consumer goods. At the same time, the laws of capitalist competition demand that a significant part of this profit be capitalised and transformed to a greater or lesser extent into means of production, which form no part of human consumption. Therefore, in a certain sense one can say that the purpose of capitalist production does not lie in consumption but rather in the growth of capital itself.

Accumulation of capital takes place by means of the transformation of profit into means of production and workers' provisions. But nothing could be more erroneous than to suppose that by capitalising profit the capitalist is simply replacing his own consumption with that of the workers. Nonetheless, the classical school based its analysis of the capital accumulation process on this assumption. Thus, in his *Principles of Political Economy*, J. S. Mill proves that general overproduction of goods is impossible because if there is a reduction in the capitalists' consumption, the accumulation of capital will cause the workers' consumption to rise by the same amount, and the social demand for consumer goods will not change in the slightest; all that will happen will be that the workers' consumption will replace that of the capitalists.

Mill's mistake arose from the error mentioned above, which is common to the members of the classical school, who were unable to recognise that the means of production are just as necessary a component of social output as are consumer goods. It is true that the capitalists' abstention from consumption of part of their profits increases the workers' consumption, but not by an amount equal to the reduction in the capitalists' consumption; total social consumption falls in this process, but in compensation, output of the means of production increases. In our example (schema no. II, first year), the reduction of 360 in the capitalists' consumption (as a result of the capitalisation of half their profits) resulted in an increase of only 120 in the workers' consumption. The output of means of production expanded by the remaining amount.

Thus, accumulation of capital may be accompanied by an absolute fall in social consumption. A *relative* fall of social consumption (in relation to the overall total of social production) is inevitable in any case.

In the above schemata we have disregarded a factor of very great importance, namely technical progress. Technical progress expresses itself in a constant increase in the importance of the means of production, the machine, relative to living labour, the worker himself. The means of production play a progressively greater role in the production process and in the goods market. Workers take second place relative to machines, and at the same time, demand arising from workers' consumption takes second

place relative to demand arising from the productive consumption of the means of production. All the interlocking gears of the capitalist economy assume the character of a mechanism existing, as it were, in its own right, in which human consumption appears as merely one element in the process of the reproduction and circulation of capital.¹

The contradiction between production as a *means* of satisfying human needs, and production as a technical element in the creation of capital, i.e. as an *end in itself*, is the fundamental contradiction of the capitalist economic order. The social expression of this contradiction lies in the fact that those who direct production – the owners of the means of production – play no direct part in production, while those directly engaged in production do not own any means of production, and accordingly have no control over production. However, this latter contradiction is not specific to the capitalist mode of production, which shares it with all modes of production based on appropriation of the surplus product, such as the slave and feudal modes of production. The distinguishing feature of capitalist production, however, is that it is not only the workers who are degraded to the status of mere means of production, but that to a certain extent the capitalist himself also becomes a mere means to the accumulation of capital. The laws of capitalist competition imperiously demand of the capitalist an expansion of production and the capitalisation of a significant portion of his profit. In the slave and feudal economies, at least the immediate aim of production was consumption, namely consumption by the dominant social class. In the capitalist economy, even the capitalists' consumption is determined by the requirements of production, even those who direct production become, in a certain sense, its servants. And for this reason Marx was quite right in saying that in the capitalist economic order, 'capital and its self-utilisation appear as the beginning and the end, the motive and the purpose, of production'.

This contradiction is absent from the simple goods economy. The small-scale goods producers own the means of production and produce consumption goods for one another.

1 The theory of the sale of social output in the capitalist economy developed in the text is an attempt at a synthesis between the doctrines of classical economics on the relationship between production and consumption, and the Marxian analysis of the reproduction of social capital (in the second volume of *Capital*). Most recent economists regard the Say-James and John Mill-Ricardo doctrine of the necessary equality between total production and total demand as out of date. Thus, a theoretician as outstanding as W. Lexis, for example, attaches no great importance to this doctrine. For my part, I certainly do not maintain that all the details of the version of this doctrine advanced by the economists mentioned above are correct, far less their optimistic conclusions. Nonetheless, I consider the crux of this theory, its principal idea – namely, that given a proportionate composition of social production, the supply of goods must equal the demand – to be not merely correct, but indisputable. All the objections that have been made to this idea suffer, in my opinion, from a deficient understanding of it. On this, see chapters VI and VII below.

In an economy of small-scale goods producers, production always remains a *means* towards consumption and never becomes an *end in itself*. People are the masters of production and in no way its servants; at the same time, the means of production remain the servants of human beings and do not become their masters, as happens in the capitalist economy.

The second contradiction of the capitalist economy is directly linked to the first. This second contradiction consists in the 'opposition between the organisation of production in the single factory and the anarchy of production in the whole society' (Engels). In the slave and feudal economies, production within the framework of a single household can be highly organised – we need only recall the *familiae rusticae* and *urbanae* of the Roman household. But insofar as the basis of such a household lies in production for own use, it does not suffer from the anarchy of social production.

In the simple goods economy, social production may be unorganised, but at the same time organisation in accordance with a plan is also absent within individual businesses, insofar as small-scale enterprise does not permit a significant degree of division and pooling of labour within the framework of a single business. The planlessness of overall social production, combined with money-mediated exchange, gives rise to the *possibility* of overproduction in the simple goods economy. The contradictions of capitalist production that we have indicated make general overproduction *inevitable* as a factor in the development of the capitalist economy.

We have seen that the mediation of money elevates the market into a special economic power governing production. The market's influence rests on the interdependence of the prices of goods; it is precisely due to this interdependence that the market for all goods is an indivisible whole, a peculiar organism. The mutual dependency of prices increases in the capitalist economy as a result of credit. As long as money was the sole medium of exchange, the circulation of goods rested on a material basis. The medium of exchange in the simple money economy (as opposed to the credit economy) is a particular good, in its material form, which remains a good even though its economic function differs from that of all other goods. Every cash purchase and sale retains, in a sense, the character of a direct exchange of goods, since the coin is also a product. Consequently, where simple money-mediated exchange prevails, the prices of goods are distinguished by considerable stability. The prices rest, so to speak, on a material base. The capitalist economy creates a new medium of circulation – credit. Credit does not eliminate the dependency of the prices of goods on supply, but in the credit economy this dependency becomes extremely complex. Credit places demand, the other factor of price, in the foreground, while simultaneously altering its economic significance. As was established above, under both money-mediated exchange and exchange in kind, demand is based on supply. Supply determines purchasing power, and it is only the direction this power takes that depends on purchasers' wishes and needs. Credit frees demand from any direct link with current

supply. Thanks to credit, demand can rise or fall considerably quite independently of current supply. With the spread of purchase and sale on credit, the prices of goods acquire a curious mobility, becoming the expression of a purely psychological factor – the parties' calculations respecting the future as well as the present state of the market, the general mood of buyers and sellers, the greater or lesser inclination to speculate, etc.

True, the prices of goods still depend on their supply, but this dependency is greatly complicated by the fact that in addition to the present moment's real supply, the unknown, absent future supply, or, more precisely, interested individuals' views about this future supply, exercise an influence. In the simple money economy, the quantity of purchasing power present in the market at any given moment is a more or less definite magnitude. The basis of this purchasing power consists in goods and money in material form. Although an acceleration in the circulation of money can, to some extent, take the place of an increase in its quantity, this possibility only holds within rather narrow limits. In the credit economy, the market's purchasing power is a complex, elastic, immaterial, but at the same time fragile, structure resting on a real money base; the market's purchasing power can rise or fall in line with the greater or lesser inclination of buyers to make use of credit, without any change whatever in the real conditions of supply of goods and money.

In addition, credit greatly increases the interdependence of individual businesses. The linkage among them becomes closer and more intimate. Changes in the market acquire the character of an avalanche: minor events can have a disruptive effect on the market because the effect of the original impulse grows as it spreads. Fluctuations of the market in one direction or the other, the direction of a rise or a fall of goods prices – of the enrichment or the ruin of the owners of goods – acquire great strength and a powerful momentum.

Thus, the exchange mechanism peculiar to the capitalist economy, namely credit, itself very considerably reinforces the effect of fluctuations in the supply of goods. Nonetheless, the various disturbances of credit are ultimately based on disturbances in the domain of real production and the real supply of goods.

It was stated above that the fundamental contradiction of capitalism lies in social consumption's lack of any control over social production. Capitalist production is transformed from a means into an end in itself. This is also the source of the crises of the capitalist economy.

This economy lacks any unified regulator such as social consumption provides in the simple goods economy. The endeavour to achieve the greatest possible expansion of production is a characteristic feature of the capitalist mode of production. The productive forces at society's disposal set an absolute boundary to the expansion of production; capital is constantly trying to reach this boundary.

But in vain! Capital can never reach this boundary. As we have seen, if the composition of social production is proportionate, demand is created by the supply of goods itself. But the attainment of complete proportionateness poses insuperable difficulties. Any composition of social capital other than a proportionate one will lead to overproduction of some goods, but since all branches of production are closely interrelated, a partial overproduction of some goods can easily turn into general overproduction; the goods market becomes overfilled with unsold goods, and prices tumble.

In order to grasp in full the difficulty of investing new capital productively, it suffices to recall what was said above concerning the overfilling of the goods market under present-day competitive conditions. In the capitalist economy, demand for all goods is normally fully satisfied by supply. Under prevailing competitive conditions, supply acts aggressively on demand, taking the lead.

Only in exceptional cases can unsatisfied demand last for long. And now, with the supply of all goods already tending on the whole to outstrip rather than equal demand, a market must be found for new goods. If all the new capital is invested in a single branch of production, the result will be overproduction, since the goods of this kind produced hitherto already fully met the demand. In order for the newly produced goods to find a market, the capital which is seeking investment must be distributed in definite proportions among many different branches of production; if this is done successfully, the increase in demand will equal the increase in supply, and production will expand without any excess in the supply of goods over demand for them. But is such success always attainable? Obviously not.

Part of the capitalised social surplus product finds an investment outlet relatively easily in the same branch of production which generated that surplus product. In this case, the process of distributing the capitalised profit among the various branches of industry takes place automatically; production expands in many different branches of industry, especially in those that have generated the greatest profits, i.e. in those for whose products there has been the greatest demand. However, in addition to these new capital resources, which hardly appear on the money market, since they are invested on the spot, every wealthy capitalist country, such as England, for example, has at its disposal an enormous quantity of free capital, originating partly in the profits of industrialists and merchants, whose owners could not invest it themselves for one reason or another, and partly in the capitalised portion of the other classes' income, principally the class of the money capitalists. This free capital, not linked to any particular branch of production, greedily seeks advantageous investment outlets, and always flows into the money market. The productive investment of this capital is no easy matter. It is from the difficulties involved in the proportionate distribution of this newly created, free capital, not linked to industry or trade, that commercial crises arise.

In a certain sense, one can say that the fundamental cause of crises is the people's poverty, the underconsumption of the working classes. Indeed, it is the smallness of the working masses' share in the output they produce that is the direct cause of the formation of excess capital resources and, in general, of the capitalisation of a considerable portion of social income. If there were no need to find an investment outlet for new capital, if production were not stimulated as a result of the capitalisation of profit, then achieving a proportionate composition of social production would pose no great difficulty. In that case, social production would be regulated by social consumption, as occurs in the economy of small-scale goods producers. The accumulation of capital by capitalists is a consequence of the appropriation of the surplus product by people who play no part in production, a result of the fact that part of the output produced is taken away from the direct producers. The smaller the workers' share, the greater that of the capitalists, and the quicker the accumulation of capital, inevitably accompanied by slowdowns and crises.

Thus, one of the preconditions for commercial crises lies in the poverty of the masses, poverty in the relative rather than the absolute sense, in the sense of the smallness of the workers' share in the total social product. But the connection between poverty and crises must be clearly understood. The widespread view, also shared to some degree by Marx, that the penury of the workers, who constitute the great majority of the population, makes the sale of the output of ever-expanding capitalist production impossible due to insufficient demand, is false. We have seen that capitalist production creates its own market; consumption is only one of the elements of capitalist production. If social production were organised in a planned fashion, and those directing production had complete *knowledge* of demand and the *power* to shift labour and capital freely from one branch of production to another, then no matter how low social consumption might be, the supply of goods could never exceed demand. But when social production is completely unplanned and anarchy prevails in the goods market, the capital accumulation inevitably leads to crises.

The planned organisation of work in capitalist factories enormously raises the productivity of work. It was capitalism that first put technology on a scientific footing and that first made the perfection of technique a law of competition for producers. However, the technical forces of modern industry are unable to unfold fully, due to the social obstacles they encounter and the planlessness of overall social production. These factors also make crises inevitable, which are thus caused by the two contradictions of the capitalist economic order: 1) through the contradiction that the means of production belong to people who do not participate in production, while the direct producers lack them, and 2) through the disorganisation of overall social production, while production in individual businesses is organised. These two contradictions are equally necessary, and at the same time completely sufficient, to account for the development of crises.

Credit, the specific form of exchange peculiar to capitalism, intensifies the effect of crises. However, the deepest causes of crises are rooted in the domain of production. The history of each capitalist country's crises has its own particular features, in accordance with that country's concrete economic circumstances; but since the two contradictions we have pointed out, as well as credit, are characteristic of the capitalist economic order as such, the fundamental causes of crises are everywhere essentially the same, no matter how different the concrete environments in which their effects are manifested may be.

However, we must still deal with an economic factor whose significance we have not yet touched on, namely foreign trade. From our abstract analysis of the process of reproduction of social capital, the conclusion emerged that, given a proportionate composition of social production, there can be no surplus social product. In this analysis we completely disregarded foreign trade. We had every right to do so, since foreign trade is only foreign for individual countries; for the capitalist world as a whole, however, trade between various countries is internal, a trading exchange within the capitalist whole. However, if we turn to consideration of the economies of individual countries, we naturally have to adopt a different point of view. Every capitalist country engages in foreign trade, and for countries such as England the foreign market plays an even greater role for many branches of production than the domestic one. For England, the foreign market is absolutely essential. There is not the slightest doubt that, whatever the composition of England's national production may be, the domestic English market could not absorb all the cotton fabrics, cloth, machines and other manufactures produced in England. Does this not prove that capitalist production creates surplus output for which the domestic market has no place? Why does England need an external market at all?

The answer is not hard to find. The reason is that a considerable part of England's purchasing power is expended on the acquisition of foreign goods. The import of foreign goods for England's domestic market makes the export of English goods for the foreign market absolutely necessary. Since England cannot manage without imports from abroad, exports are essential to the country's survival, as otherwise it would have nothing with which to pay for its imports.

The desperate search for markets, so characteristic of the capitalist economy, is not limited to the narrow confines of the domestic market. Every branch of production strives to expand its sales area as much as possible. If foreign competitive conditions permit, the industry in question quickly spills over the borders of the domestic market and starts to work for the external market. Thus, capitalist industry's striving for unlimited expansion results in all countries becoming intertwined in a net, in one colossal whole. Each country is a market for the other countries and at the same time the other countries are a market for it.

The external market plays a very great role generally in the history of the capitalist mode of production. The original domain of capitalism lay in the production of luxury objects, which could only be absorbed by a very wide market, since the number of consumers of these objects in each country was limited. Fine fabrics, glass, porcelain, costly metal and leather products and various luxury goods generally – products such as these were the main output of capitalist manufacture in its earliest period in Italy, Flanders, England, France and other countries. A considerable portion of these products was intended from the outset for sale in other countries. Much later, capitalist industry took up the manufacture of items of mass consumption and began to produce primarily for the domestic market. Capitalist production's development along this path was closely linked to the development of trade. Foreign trade always had a more capitalistic character than domestic trade. This is readily comprehensible, since foreign trade requires greater capital resources, a more enterprising spirit and greater specialisation on the part of the trader than domestic trade. It was in the field of foreign trade that associations of capitalists first appeared. For a long time, trade within the country in domestically produced goods could not develop very greatly, due to the prevalence of production for own use and the similarity of the goods produced in various regions of the country. Being confined to an extremely limited area, this trade remained small-scale, and the trader involved was often also a small-scale producer. The foreign trade of Europe's coastal countries with the Levant, India and America, as well as that of European countries with one another, led to the formation of enormous commercial capital resources which gradually organised production, too, along capitalistic lines, especially the production of those goods which were the objects of this trade. Capitalist production in general mostly relied on the foreign market from the outset.

Furthermore, the international division of labour led to the development within each country of those branches of production for which the country was best suited by virtue of its natural, economic or social conditions, at the expense of the others. Countries of an agricultural or an industrial type arose, whose economic existence required the exchange of agricultural products for industrial ones. England provides the most extreme example of an industrial country with hypertrophic industry and an almost atrophied agriculture. England cannot exist without an external market for her industrial products, since exports of manufactures are necessary to pay for the import of foodstuffs and raw materials. Hence the enormous importance for English industry of external markets. England's whole foreign policy is determined by the quest for external markets for her industrial products. In foreign trade there also unfold the contradictions of the capitalist economic order, which are the deepest causes of capitalist crises, in England as in other countries.

CHAPTER VIII

THE INDUSTRIAL CYCLE AND THE CAUSES OF THE PERIODICITY OF CRISES

The history of English crises has proved to us the periodicity of capitalist industry's ebb and flow. True, this periodicity is not a mathematical one; the industrial cycle can be longer or shorter in accordance with the concrete economic circumstances of the particular historical moment. This makes it clear from the outset that any attempt to regard the recurrence of crises as something subject to a mathematical law is untenable. Such an attempt is to be found, for example, in Jevons's theory linking crises with the appearance of sunspots. The chronology of crises suffices to refute it. True, for several decades crises occurred at roughly equal intervals: the crisis years – 1825, 1836, 1847 – are separated by eleven-year intervals. However, the next crisis occurred after ten years, in 1857, and the following one nine years later, in 1866. The business slowdown of the '70s began in 1873 and ended in 1879; that of the '80s began in 1882 and ended in 1887, and that of the '90s began in 1891, ending in 1895. It would appear that in recent years the industrial cycle has grown shorter. The intervals between the culminating years of the slowdowns (1878–9, 1886–7, 1894–5) are no more than 8–9 years. The years of greatest boom – 1873, 1882, 1890 – are separated by roughly similar intervals. At the moment, however, some ten years have elapsed since the Baring crash without the crisis having occurred as yet. The business slowdown is to be expected in the immediate future, probably beginning this autumn. In Russia, the slowdown has already lasted for nearly a year, since the St. Petersburg stock market crashed at the beginning of October 1899. Without doubt, we are on the threshold of another protracted period of depression, which will encompass the whole capitalist world. However, the industrial cycle has lengthened once more, for if the reaction had set in after the same period as in 1890, the slowdown would have already occurred in 1898. At present, however, we must not expect the general business slowdown to begin until 1900.

Capitalist development is periodic in the sense that it consists of successive periods of upswing and decline, of prosperity and depression, following a cyclic course. The industrial cycle lasts for approximately (but only *approximately*) a decade. As the oft-quoted passage by Samuel Loyd puts it, every ten years we have 'a state of commercial calm, then an improvement, growing confidence, boom, excitement, overspeculation, convulsions, difficulties, business slowdown, misery – and then commercial calm once again'. This industrial cycle can be regarded as an inherent law of capitalist development. As the history of English crises shows, the industrial cycle covers a period of 8–11 years.

What causes this periodicity of crises? According to our account, crises arise from the two contradictions of the capitalist mode of production: 1) from the fact that the means of production belong to people who do not participate in production, while the direct producers lack them, and 2) from the planlessness of social production, while production in individual businesses is organised. These contradictions necessarily lead the capitalist economy into crises; but why do these crises recur periodically? That remains to be explained. The history of crises in the country where the industrial cycle appears most clearly and distinctly – England – will provide us with the opportunity to establish the causes of this periodicity by inductive means.

It is easy to see that the succession of boom periods stands in some relation to the creation in society of new fixed capital. Boom years are always characterised by such creation.

When considering the history of crises, we noted that the price of iron varies with great regularity; during each boom period, iron prices are high, and conversely, every business slowdown is accompanied by low iron prices. Not once did we find iron prices to be low prior to the advent of a commercial crisis, or high following the crisis. However, the same is by no means true of all goods prices. Thus, for example, fluctuations in the price of grain are not nearly as regular. It is impossible to say what state of grain prices – high or low prices – corresponds to any particular phase of the economic cycle. Thus, for example, during the upswing of 1823–5, grain prices were high, but during the upswing of the '30s (1833–6), they were very low. The crisis of 1847 occurred in a year when there was a poor harvest, that of 1857 in a year when there was a good harvest. The crisis of 1866 occurred following low grain prices, while the business slowdown of 1867–9 was accompanied by high grain prices. At the beginning of the '70s, grain prices were high – but that did not prevent English industry from attaining a hitherto unparalleled prosperity. After 1873, grain prices fell with minor fluctuations for several years, which did not check the slowdown. There was no relationship between grain prices and the boom periods at the beginning and end of the '80s or the depressions of the mid-'80s and mid-'90s. Iron prices, on the other hand, are the surest and most infallible indicator of the general mood of the goods market and the state of industry. The movement of iron prices perfectly mirrors the industrial cycle: during the upswing, iron prices also rise, while crisis and depression are expressed in a fall in those prices.

The explanation for this striking dependency is that iron is the most important material in the manufacture of machines, instruments, rails, ships, and means of production and transport generally. From the demand for iron and the prices of iron one can infer the quantity of new fixed capital being created. If iron prices are high, then many new factories, railways, ships, etc. are being constructed, and if they are low, then the production of fixed capital has slowed.

One of the most characteristic features of recent crises is their close connection with the construction of railways. As Nasse aptly remarks, 'It is to say that in most parts of the civilised world the existing railway network was created by fits and starts, not by steady, planned expansion, but by alternating periods of excessively excited activity and of stagnation.'¹ This relationship is particularly noticeable in the United States. All American crises of the last few decades have been preceded by an exceptionally vigorous expansion of the rail network. The same holds true of the most recent crises in Argentina and Australia.

In England, the connection between crises and railway construction is less direct. True, it can be easily established in the case of two crises – that of 1847 and, to a lesser degree, that of 1836. Subsequent crises, however, have definitely not been caused by railway construction in England itself. Moreover, that is easily comprehensible. England is so small in area that its need for railways was soon satisfied. There was, so to speak, no room for any further extension of the rail network. This made the connection between English crises and railway construction more complicated, but by no means eliminated it. From the history of English crises we can see what an important role in the causation of crises was played by the outflow of English capital from the country. However, in those countries to which English capital flowed, it was mainly invested in railway construction; in this way, English crises, too, were caused, even if indirectly, by periodic expansions of the rail network of the world as a whole.

Another characteristic feature of many crises is speculation in real property, especially urban real estate. Crises in the United States are almost always preceded by an extraordinary increase in purchases of public domain lands and a resultant very considerable rise in land prices; this characteristic of American crises is so striking that Henry George made it the basis of his theory of crises. His book *Progress and Poverty* states that 'the manner in which the speculative advance in land values cuts down the earnings of labour and capital and checks production is the main cause of those periodical industrial depressions to which all civilized countries seem increasingly liable.'² This assertion is a considerable exaggeration. To regard the periodic rise in land prices as the main cause of crises is to oversimplify the issue. Land speculation during boom periods is a highly characteristic symptom of the expansion of society's fixed capital, but is more a symptom of the disease than its cause.

For example, speculation in urban real estate and fraud in the construction industry attained enormous dimensions in Vienna on the eve of the famous crash of May 1873, as well as in Berlin at the same time, in Australia and Argentina towards the end of the '80s, etc. It is true that in England

1 E. Nasse, *Die Verhütung der Produktionskrisen durch staatliche Fürsorge* (Prevention of Production Crises by State Oversight), *Jahrbuch für Gesetzgebung im Deutschen Reiche* (Yearbook of Legislation in the German Reich), vol. III, p. 153.

2 Henry George, *Progress and Poverty*, London, 1885, p. 185.

itself, speculation of this type plays no great role in fomenting crises. However, here we must once more remind the reader that English capital has a share in speculations in almost all other countries. England is the heart of the capitalist world, and therefore whatever happens anywhere in the world economy immediately affects England.

Moreover, one can hardly deny that investment of social capital occurs during boom periods. The state of the economy preceding a crisis is usually referred to – and this holds for all historians of crises, from Tooke to Hyndman – as foundation fraud. At such times, everybody tries to invest their free funds in some enterprise or other, and the skilful stock market operators exploit this opportunity to enrich themselves at the expense of the gullible public.

Each crisis is invariably preceded by foundation fraud – the foundation of an enormous number of new enterprises. But this foundation fraud is, after all, simply the creation in society of new fixed capital.

A rough idea of the connection of crises with newly established enterprises can be obtained from the following statistics of the annual issue of stock market securities (bonds, debentures, shares, etc.) in England.¹

Year	£ (millions)	Year	£ (millions)	Year	£ (millions)	Year	£ (millions)
1871	92.3	1879	56.5	1887	111.2	1895	104.7
1872	151.6	1880	122.2	1888	160.3	1896	152.7
1873	154.7	1881	189.4	1889	207.0	1897	157.3
1874	114.2	1882	145.6	1890	142.6	1898	150.3
1875	62.7	1883	81.2	1891	104.6	1899	133.2
1876	43.2	1884	109.0	1892	81.1		
1877	51.5	1885	78.0	1893	49.1		
1878	59.2	1886	101.9	1894	91.8		

In this table we have entered the years according to the phases of the industrial cycle, so that a new industrial cycle begins at the top of each column. From the table it can easily be seen that the first years of the industrial cycle are always marked by increased investment of national capital; however, the founding of new enterprises reaches its peak after only a few years. The number of new enterprises established then falls, until the following cycle brings a renewed increase. Capital issues reached their maxima in England in 1873, 1881, 1889 and 1897; their minima occurred in 1876, 1885 and 1893. We note in passing that the decline in English issues in the last two years is a sure sign that the present industrial cycle is entering its adverse phase, that of depression. As the table shows, the depression usually does not immediately follow the high point of new issues; rather, several years may pass between that high point and the

¹ According to the annual Supplements of *The Economist*.

beginning of the business slowdown. Therefore, we must expect the slowdown to occur this year (1900).

The connection between crises and the establishment of new businesses appears just as clearly in the annual fluctuations in the number of newly established joint-stock companies to which we referred earlier, in our account of the history of crises. Lastly, unemployment statistics, which we will discuss in the second part of this book, show that it is precisely those branches of production that manufacture fixed capital that experience the greatest periodic fluctuations. The statement made by Llewellyn Smith, head of the English Board of Trade's department of labour statistics, to a parliamentary commission in 1895 is highly instructive in this connection. He said: '... cyclical fluctuations affect in a special degree industries connected with shipbuilding, machine-making, and allied industries; the trades which Mr. Walter Bagehot used to call the "instrumental" trades. The total volume of production in the country appears to vary slightly from year to year, but even these slight changes are sufficient to throw into violent oscillations the trades connected with the manufacture of the instruments of production.'¹

Why is intensive creation of new fixed capital always accompanied by a general upswing of industry, while every decline in the establishment of new enterprises is accompanied by a general business slowdown? The cause of this linkage lies in the interdependency of all branches of production in the capitalist economy.

Every productive process creates new demand for other goods. From nothing, nothing can be produced. In order to produce new goods, raw materials, means of production and workers' consumer goods must be bought. Thus, increasing output in any one branch of production raises the demand for goods manufactured by other industries. In this way the impetus towards increased production is passed from one branch of industry to another, so that *the expansion of production is contagious and always tends to embrace the whole economy*. For this reason, in periods when new fixed capital is created, demand for all goods grows.

In order to build a factory or a railway, building materials (wood, bricks, iron, etc.), machines and instruments must be purchased, and workers hired in exchange for wages. Building materials, machines and consumer goods for workers do not appear out of nowhere, but are manufactured by other branches of industry. Thus, every increase in the founding of new businesses must increase the demand for means of production and workers' consumer goods. At the same time, however, demand for the goods consumed by the higher social classes also grows, since the general upswing of industry increases entrepreneurs' incomes. In this way, all of national industry is stimulated thanks to the creation of

1 Third Report from the Select Committee on Distress from Want of Employment, 1895, statement by Llewellyn Smith.

new fixed capital – the construction of new railway lines, factories, houses, ships, etc.¹

But why does the creation of new fixed capital happen by fits and starts, in great leaps, rather than little by little, gradually? The explanation lies in the conditions of capital accumulation in the capitalist economic order.

Under present-day economic conditions, as we observed earlier, we witness the rapid accumulation in every rich capitalist country of free capital resources, not bound to any particular branch of industry. This capital appears on the money market as free loan capital. It is made up of the capitalised portions of the incomes of the most various social classes, as well as the free cash balances available to every entrepreneur, indeed to every rich man. Thanks to the banks, the repositories that receive and invest this free loan capital, everybody is able to transform into loan capital that portion of his cash balances that he does not immediately need for current expenditure (and with the increased use of cheques, even his entire cash balances). To do this, he need only deposit his free funds in an account at the bank. However, the main part of the free loan capital available on the market is not made up of private individuals' cash balances, but of capitalised income which, for one reason or another, could not be invested where it arose. However, this amassing of loan capital must by no means be confused with the growth of productive capital. 'Not every increase of loanable money capital indicates genuine capital accumulation or expansion of the process of reproduction.'² The difference between productive capital and loanable money capital is most evident in government bonds. The state takes out a particular loan for unproductive purposes; the state's creditors are capitalists who advance the money capital required. After this sum has been spent by the state, there is no reduction whatever in the capital of the state's creditors, although if the sums received are spent unproductively, the country's real productive capital dwindles. In reality, the owner of a government bond has the naked right to take part of the country's surplus product for himself. 'The accumulation of the capital of government debt simply means the growth of a class of creditors of the state who have the right to claim certain sums derived from tax revenues' (Marx). The growth of government debt in no way indicates growth of the country's real capital. Despite this, government securities are regarded as capital in the money market in exactly the same way as the bonds or shares of an industrial enterprise which actually represent real capital.

Thus, accumulation of loan capital is something quite different from real growth of production and of productive capital. Accumulation of loanable money capital may be accompanied by expansion of production,

1 Cf. Marx, *Capital*, vol. II, pp. 287, 288.

2 Marx, *Capital*, vol. III, part 2, p. 22.

but may also go hand in hand with a slowdown and a fall in production – and not only can it occur under such circumstances, it actually does.

In capitalist society there are many incomes whose size is completely or largely independent of the state of national production. Of all the categories of national income, that which varies most from year to year, in accordance with the state of trade and industry, is business profit, followed by workers' incomes. These two types of income rise during favourable phases of the industrial cycle and fall during unfavourable ones. But other incomes which only depend on ownership are far less dependent on these phases. Thus, for example, interest on government securities, mortgages, bonds, etc., is generally paid just as punctually during years of business slowdown as during years of upswing. Ground rent can change greatly over long periods; thus in England, for example, it has fallen considerably over the last twenty years. However, it is virtually unaffected by the phases of the industrial cycle.

Incomes of this kind make up a very considerable proportion of national income; statistics on national income tax in England show that incomes from land, houses, government securities and foreign and colonial loans together make up almost one half of England's total taxed national income.

Thus, in England – and the same holds true for every other capitalist country – many incomes are influenced very little, if at all, by the phases of the industrial cycle. The different varieties of men of private means have no motive for accumulating a smaller proportion of their income during a business slowdown than during an upswing. On the contrary, since during a slowdown the prices of goods and hence the cost of living, as well as other expenses, fall, the savings of people of private means and of those on fixed incomes (the military, civil servants, pensioners, senior employees, various professionals, etc.) may rise. On the other hand, the savings of other sectors of society, in particular entrepreneurs and workers, must fall sharply during unfavourable phases of the industrial cycle. However, the accumulation of loanable money capital must be steadier than its transformation into productive capital; loan capital is accumulated continuously, while its transformation into productive capital occurs by fits and starts.

When describing individual crises, we have repeatedly referred to the considerable growth in bank reserves during a business slowdown, immediately following a crisis. Simultaneously, private individuals' bank deposits likewise increase. This indicates an accumulation of the free loan capital that is not invested in industry. The low discount rate which always follows upon the liquidation of a commercial crisis and stubbornly persists for quite a few years, testifies to an abundance of uninvested capital resources. In general, just as the favourable phases of the industrial cycle are marked by increased investment of capital resources, by a transformation of free into tied capital, so the unfavourable phase is characterised by an accumulation of free, untied loanable money capital.

This is so evident that many economists (J. S. Mill in particular) regarded the fall in the discount rate as the direct cause of crises, believing it to lead to speculation in the money market and an ensuing collapse.¹

J. S. Mill argues in his *Principles of Political Economy* that 'Crises occur almost periodically because profit has a tendency to fall. If a few years have elapsed without such a crisis, so much new capital is added to that already present that it becomes impossible to invest it in a manner which will yield the usual profit; the prices of all government securities rise very high, the discount rate for first-class bills of exchange falls considerably, and all businessmen complain of the disappearance of advantageous opportunities ... Since it becomes impossible to make a profit without taking a risk, people become inclined to take up every project that holds out any hope of significant profit, even if it involves the risk of loss; thus arise those speculations which, together with the ensuing reactions, destroy considerable amounts of capital or lead to it moving abroad, leading to a temporary rise in the interest rate and in profits, and making place for new accumulation; then the same cycle occurs anew.'

Mill is quite right in pointing to the rapid accumulation of loanable capital following the crisis, leading to a fall in the discount rate and favouring the development of speculation. However, the fluctuations in the discount rate are manifestations on the surface of the money market of deeper changes in the capitalist economy of which Mill has no idea.

True, it must be acknowledged that there is a connection between speculation and a low rate of interest. Many witnesses who testified before the parliamentary commission of 1833, which investigated the crisis of 1825, attributed the crisis to the fall in the interest rate resulting from the conversions of the English national debt. Likewise, some witnesses questioned by the parliamentary commission of 1848 linked the crisis of 1847 to the exceptionally low discount rate of the years 1843-4. In general, the discount rate is usually low in the phase of the industrial cycle immediately preceding an upturn.

Thus, accumulation of loanable money capital occurs continuously; however, its transformation into productive capital, the investment of loan capital in industry, encounters resistance. There can be no doubt of the presence of this resistance. During the years of a business slowdown, the market is swamped with loan capital. For this loan capital to be transformed into productive capital, a certain proportionality in the distribution of free capital among various branches of production is necessary. To avoid any surplus of goods, the new capital must be distributed proportionately among all the branches of production. However, under present-day economic conditions, namely those of unplanned national production,

1 As remarked above, the fall in the rate of profit also plays a major role in Marx's theory of crises. However, Marx views the causes of this fall differently from Mill; furthermore, Marx's and Mill's theories of crises have nothing in common.

maintaining such proportionality, as was explained in the first chapter of this book, involves considerable difficulties. The following situation arises. Free loanable capital is constantly being accumulated, it energetically seeks an investment outlet, but can find none. The uninvested capital yields no interest, it does not function as capital at all, it has no utility value for its owner. The more such non-functioning capital there is, the stronger must be the drive towards productive investment of the free capital. Thus, on the one hand industry does not want to take up any new capital, but on the other hand this capital strives ever more forcefully to force its way into industry. A moment must come when industry's resistance is overcome and the accumulated loan capital finds an investment outlet in industry and is transformed into productive capital. A period of upswing begins.

In the transformation of loan capital into productive capital, which is synonymous with expansion of national production, only the first step is difficult; due to the interdependence of all branches of production, any expansion of production tends to spread from one branch of production to the others, until it encompasses the whole economy. Free loanable capital (held, for example, in a bank deposit which the bank itself does not expend on discounting bills of exchange) represents latent purchasing power. This purchasing power, which accumulates in bad years, exerts no influence on the goods market so long as the loan capital remains uninvested. However, as soon as this capital is invested in one way or another, its latent purchasing power is immediately transformed into effective purchasing power. The capital is spent, i.e. it is used to purchase some goods or other. New productive capital is created, producing increased demand for producer and consumer goods. Industry opens a new market, so to speak; this market is created by the expansion of production itself, by the expenditure of enormous sums of loan capital, which previously were lying idle in the vaults of the banks. For industry, it is all the same where the sudden increase in demand comes from. All that matters for industry is that demand has indeed increased by the whole amount of the accumulated loan capital which has now been spent. The prices of goods rise, and social production expands all along the line.

Several years pass. The loan capital accumulated earlier is gradually used up. True, the expanded social production creates significant new capital resources, but these are quickly absorbed by the market, since all entrepreneurs are trying to take advantage of the favourable economic situation. Goods are selling, and every businessman is trying to invest all the capital resources he can lay his hands on in his own business. All capital reserves are made use of. The extraordinary expansion of credit so characteristic of this phase of the industrial cycle is indicative of intensive investment of capital. While previously there was strong competition among owners of loan capital, and the supply of loan capital exceeded demand for it, now the demand for loan capital considerably outstrips its supply.

The rise in the discount rate frequently to be observed towards the end of this phase is a sure sign that there is no free loan capital. In this period, to general astonishment, it turns out that money has suddenly become 'expensive'; in fact, however, it is not money but loan capital that becomes expensive, and it does so because little free, idle capital remains in the money market.

It is highly characteristic that crises on the stock exchange often precede business slowdowns by many months, even several years.

Thus, for example, prior to the commercial crisis of 1836, a stock market crisis had occurred in 1835; before the commercial crisis of 1847, a stock market crisis had already broken out in 1845; and the commercial crises of 1857 and 1873 were preceded by stock market crises in 1856 and May 1873. The business slowdown of 1892-5 was preceded by the collapse of the Baring company in 1890. This phenomenon is intimately connected with the course of the industrial cycle. A stock market crisis develops in that phase of the industrial cycle in which a lack of loan capital starts to be felt. A crash on the stock exchange never occurs when there is a surplus of loan capital. A surplus of loan capital fosters speculation on the stock exchange, and the prices of stock market securities are high. However, the exhaustion of free loan capital must inevitably result in a fall in stock market prices. This is the signal for panic, and the stock market crash follows. It is certainly a sure sign that free loan capital is almost exhausted. Nonetheless, industry may continue in a vigorous state for some time following the stock market crash, since the upswing of industry is maintained by the creation of productive capital, which does not take place suddenly, but slowly, over the course of considerable periods of time. Thus in England, for example, speculation in railway shares already ended in 1845, when their prices fell, and the flow of new capital into railway construction slowed considerably from 1846 onwards, but it was only in that year that expenditure of the capital on railway construction began on a large scale, lasting for several years.

In the same way as a stock market crisis is caused by the exhaustion of free loan capital, so a commercial crisis results from an end to the creation of new productive capital. That is why the commercial crisis of 1847 occurred two years later than the stock market crisis. Similarly, the Viennese crash of May 1873 immediately led to a fall in stock market prices throughout Europe. The volume of capital issues fell sharply, yet even in 1875 English industry was not in a very depressed state. The creation of new productive capital had not yet ceased. Not until several years after the crisis began was it fully felt by English industry as well.

The collapse of the Baring company only had an immediate effect on the stock market: capital issues fell, the market being unfavourable for the establishment of new enterprises. Depression in industry only occurred much later – not until there was a fall in the creation of productive capital.

The figures on capital issues in England cited above ([p. 32])* can be taken as statistical proof of the point just made. Issues in the '70s reached their peak in 1873, but the business slowdown only occurred much later. In the industrial cycle of the first half of the '80s, new issues reached a maximum in 1881, two or three years before the business slowdown began; towards the end of the '80s, the same peak occurred in 1889, one year before the collapse of Baring's and several years before the business slowdown of the '90s. The coming slowdown will also have to come several years after the peak of 1897.

Why is it that every industrial upswing ends in a reaction, a business slowdown? There are many causes. First of all, the expansion of production absorbs the free loan capital, the free, untied purchasing power whose accumulation in the money market was the direct cause of the upswing. For example, as long as the railway is being built, its construction creates a demand for vast quantities of goods. However, railway construction cannot continue indefinitely on the same scale as during the upswing; there is simply not enough capital for that. When examining the American crisis of 1873, we saw that the immediate cause of the outbreak of the crisis was the impossibility of selling new railway bonds on the European and American money markets. Loan capital had been exhausted, and railway construction had to be cut back. Furthermore, the high goods prices and high profits brought about by the upswing inevitably entail a tightening of credit and incite speculation. Of necessity, the favourable state of the world market must produce speculative excitement. High profits are like an intoxicating beverage which, taken in large quantities, destroys the judgment of even the strongest and most rational individual. And if at present we do not see in the English goods market anything comparable to the speculative fever of earlier times, then the explanation is simply that the golden days of English industry are over.

Tightening of credit and speculative fever in turn lead inevitably to the collapse of credit and to panic. An apt description of the credit cycle is to be found in John Mills's penetrating article 'On Credit Cycles and the Origin of Commercial Panics' (Transactions of the Manchester Statistical Society, 1867-8).

Mills explains that although panic in the money market does not destroy capital, its effect on the whole economy is highly pernicious. What is it, then, that is destroyed during a panic, leaving behind a void? 'It is that subtle agency by which inert Capital is mobilised and tempted forward into new channels. That agency is Credit.' Panic is the death of credit. However, credit has the ability to return to life, and its life cycle is the modern industrial cycle. The first period of a credit cycle (the post-panic period) immediately follows the end of a panic. At this time, the discount

* Translator's note: page number has been changed to correspond with this volume.

rate becomes low and the supply of loan capital on the money market exceeds demand. This sort of situation in the money market is caused by: 1) the mood of the owners of capital, who, while calmer following the end of the panic, nonetheless are afraid to part with capital, and therefore put it in a safe place, namely in banks, which is why the bank deposits of private individuals grow at this time, and 2) the mood of debtors, who have no wish to take out new loans and expand their businesses.

The first period usually lasts 2–3 years. Throughout this time the interest rate is low, but bank reserves remain high. Gradually, a restoration of credit becomes noticeable, and the middle period, that of revival, begins. Goods prices and profits rise, business activity expands rapidly. Young people start to take part in business who have not experienced the preceding panic and are naturally inclined to look to the future with greater optimism. The general public is always inclined to envisage the future as being just like the present; confidence grows, and large sectors of the population become convinced that the improvement in the market will last. Capital resources circulate rapidly and yield good profits, which immediately re-enter circulation. Capital resources gradually swamp the usual channels of circulation, and capitalists begin to look for new outlets.

The third period begins, that of speculation. Credit becomes tighter and tighter, prices rise abnormally high; in the end, the whole structure collapses. Credit dies, to be resurrected. Such is the course of the credit cycle.

This whole exposition is subtle and penetrating. Its only fault is that Mills only depicts one side of the matter, namely the psychological factors entailed by the industrial cycle; he neglects objective causes of the cycle. (He does make an attempt to establish the objective causes of crises, but fails completely.) It is certainly true that the psychology of entrepreneurs undergoes systematic changes in connection with the phases of the industrial cycle. The psychology of the slowdown phase has nothing in common with that of the upswing phase. The upswing phase forces speculators to overstep the boundary separating a rational spirit of enterprise from a reckless daring ready for any risk or danger. We must bear in mind that speculation only considers the anticipated difference in prices, but is indifferent to the absolute level of prices. A speculator may be convinced that a collapse of prices is inevitable sooner or later, but that does not concern him at all; he is only interested in what the price of a particular good will be tomorrow or in a week or a month. If high prices have become established in the market, then even if it is generally recognised that they will have to fall in future, speculation can daringly gamble on a further rise, hoping to realise the profits before a reaction sets in. 'Now or never' – such is the motto of every entrepreneur, and particularly of the speculator, when the economic situation is favourable. Everybody knows how brief such moments are, and this impels everybody still more to take advantage of the favourable situation and join the general upward movement as quickly as possible.

It is no wonder that this eagerness to expand business activity and to buy goods or stock market securities at high prices in the hope of reselling them at still higher prices, leads to an extreme tightness of credit, a stock market swindle, a mania for setting up new enterprises, and finally to a crash. Everything must end sometime; credit can be expanded, but when expanded excessively must eventually burst. The sanguine mood of the market may keep prices abnormally high for a long time, but sooner or later they have to fall into line with the real conditions of supply and demand. Overinflated businesses, financially unsound factories for whose products there is no demand and railways with nothing to transport may survive for a while by means of the stock market game, but sooner or later the day of reckoning must come. The upswing ends in a decline, the speculative frenzy ends in a panic, and the more violent the frenzy has been, the greater will be the panic.

As Juglar rightly observes, the periodic fluctuations of industry are directly connected with the periodic fluctuations in the prices of goods. Years of upswing are years of high prices, years of slowdown are years of low prices. A commercial crisis or business slowdown is expressed in, and directly caused by, a fall in goods prices. An explanation of the periodic changes in goods prices will simultaneously explain the periodicity of crises.

In the light of all we have said, this explanation poses no more problems. The upswing of industry is caused by the new demand for goods created when loan capital amassed during the preceding years, which represents society's latent purchasing power, is spent. The result is rising prices. If the market situation is favourable, the rise in prices soon transcends normal limits and degenerates into speculation, which is followed by a crash; but even if the rise in prices is not so great as to lead to a crash, a reaction is still inevitable.

After all, the capital accumulated earlier will eventually be used up. Society's new fixed capital is created during the upswing phases. All of society's industry takes a curious direction: manufacture of the means of production takes pride of place. Iron, machines, instruments, ships and construction materials are demanded and manufactured in much greater quantities. In the end, the new fixed capital is ready: new factories, new ships and new houses have been built, new railway lines completed. Then, however, the number of new businesses being established diminishes. The demand for all those materials used in producing fixed capital falls. The composition of production ceases to be proportional; demand for machines, instruments, iron, bricks and timber declines, because fewer new businesses are being set up. But since the producers of the means of production cannot withdraw their capital from their businesses, and since, furthermore, the size of the capital invested in the form of machines, buildings, etc., requires that production must continue (as otherwise the idle capital will not yield any return), overproduction of the means of production ensues. Due to the interdependence of all branches of production, the

partial overproduction becomes general overproduction. The prices of all goods fall, and a general business slowdown occurs.

Moreover, it is clear that any fall in the number of new businesses being established will disturb the proportionality of the composition of social production. Social demand changes, and equilibrium between supply and demand can no longer continue. However, since the setting up of new businesses not only creates demand for the means of production, but also for workers' consumer goods, overproduction will arise likewise in those branches of production making consumer goods, as well as in the industries producing means of production.¹

Overproduction becomes general; nonetheless, it is by no means synonymous with an absolute excess of society's productive powers over its capacity for consumption. This is evident from the fact that a few years after the crisis, far greater quantities of goods are sold; the slowdown in sales is not a chronic phenomenon. Thus, the cause of this general overproduction (which can, and indeed does, last for years) lies in the lack of proportionality among the various branches of production. Disturbances in the domain of money and credit transactions are merely secondary phenomena arising from this lack of proportionality.

But even apart from the effect on the demand for goods of the fall in the number of new businesses being established, social production becomes increasingly disproportional as a result of the upswing, due to the uneven growth of various branches of production. At such times, production in various industries expands almost independently of real demand conditions, due simply to speculative considerations and the influence of stock market manoeuvres. The strongest expansion occurs in those industries which constitute the best objects of stock market speculation. In this way, by the end of the ascending phase of the industrial cycle the composition of social production lacks all proportionality, which can only be restored by the destruction of some of the capital of those branches of production which have grown excessively.

Thus, a general upswing in business is succeeded by a general downturn, and the industrial cycle shifts from the favourable to the adverse phase. During the adverse phase, free loan capital is accumulated; there follows a new upswing period, in which that capital is spent, ending in a crisis, and the whole sequence starts over again.

The effect of this whole mechanism can be compared to the operation of a steam engine. The role of steam in the cylinder is played by the accumulation of free loan capital; when the pressure of the steam on the pump piston reaches a certain level, the piston's resistance is overcome and it moves to the end of the cylinder, an outlet opens for the steam, and the pis-

1 My theory of crises has something in common with Hobson's discussion in his *The Problem of the Unemployed*, although its theoretical basis is quite different. On this point, note that my theory was already set out in the first Russian edition of this book in 1894 (i.e. before Hobson).

ton returns to its initial position. In the same way, once accumulating free loan capital reaches a certain size, it forces its way into industry, setting it in motion; the capital is spent, and industry returns to its initial state. Capitalist industry has to traverse the same circuit over and over again.

The presence of foreign trade renders this process yet more complicated. For a country such as England, which receives enormous quantities of goods from abroad, the foreign market is an absolute necessity. In England, free loan capital is accumulated very quickly, but its transformation into productive capital in England itself is impossible without a corresponding increase in the demand for English manufactures abroad. This obstacle, already pointed out by Sismondi in his *Nouveaux Principes d'Economie Politique*, is overcome in the following way. When the accumulation of English loan capital has reached a certain size, that capital is invested in the following manner: one part of it remains in the country and is transformed into productive capital, while another part moves abroad in the form of loans for productive or unproductive purposes, the acquisition of interests in various enterprises, etc. In England, this emigration of capital to the foreign market is a regular symptom of industrial upswings. But the emigrating capital is not lost to English industry. It creates demand abroad for English goods, so that the portion of national capital that has remained at home can be invested productively. However, after free loan capital in England has been exhausted and ceased flowing abroad, the foreign countries lose the means to purchase English goods. A slowdown in sales ensues, and a commercial crisis sets in.

Foreign trade obscured the true causes of earlier English crises. In the early decades of this century it was the cotton industry that suffered most during crises, an industry that produced consumer goods rather than means of production. Nonetheless, in earlier times the upswing phase was caused by the creation of new fixed capital, just as it is now. However, England had a monopoly on industry, and in addition, the export of means of production encountered enormous difficulties due to their weight in conjunction with the very limited use of steam power for transport (on top of this, until 1842, the export of machines from England was forbidden). Under these circumstances, it was natural that the increased foreign demand for goods, stemming from the new businesses established with the help of English capital, resulted in the export from England of manufactures other than means of production, principally fabrics. Thus, the crisis of 1825 was preceded by a considerable expansion in the export of English cotton fabrics to Central and South America. But why had the demand for English fabrics increased in America? Because an inflow of English capital resources had led to the establishment of many new businesses in that country, causing increased demand for all goods, including fabrics. Today, England no longer has an industrial monopoly, and at the same time the transport of means of production no longer poses the same problems as previously, and, as we know, the greatest fluctuations in

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recent times have been precisely in the production and export of means of production.

The capitalist world is subject to its own laws, which operate with elemental power. So-called common sense is a poor guide to understanding these laws. From the standpoint of common sense, social production is a means to social consumption. In fact, in the capitalist world the relationship between social production and consumption is precisely the opposite. In the capitalist economy, it is not consumption that governs production, but production that governs consumption. The phases of the industrial cycle are not ruled by the laws of consumption but by those of production. The reason that production expands in the upswing phase is not that consumption is growing; on the contrary, consumption grows in this phase precisely because production is expanding. The capitalist world is an extraordinarily complex evolving system, whose atoms are individual human beings. In his economic activity, every single individual is guided by his personal interest; for every participant in production, consumption is the end and production the means. But out of the joint action of these individual, mutually independent wills, there emerges something qualitatively new, the organic complex of the capitalist economy, an unconscious whole, guided by no will, imbued with no thought, yet coherent and subject to its own law. The laws of motion of this complex are not determined by the wills of the individual human beings of which it is composed, on the contrary, every single individual is subject to those laws. It is on the basis of the contradiction between the aims and endeavours of living human personalities and the laws of the capitalist complex (which are independent of those aims, taking no account of the interests of individuals) that the contradictions of the capitalist economic order arise. As we have already shown, the most fundamental of these contradictions is that between capitalist production as a simple means to the utilisation and growth of capital, and production as a means to the satisfaction of human needs. However, the existence of this contradiction clearly shows the limited historical role of capitalism: capitalist society is a class society, and the capitalist organisation of the economy is not economic organisation in the interests of the whole population, but only of a tiny minority, namely the owners of the means of production. Therefore, the further development of the capitalist economy must lead to its transformation into a higher form which is free of this contradiction. The organisation of the economy must be constructed in a way which is planned, imbued with a single idea, and in the interest of its subject, i.e. society, to the very same degree as the construction of today's private industry is planned, purposeful and in the interest of its subject, the individual. However, economic organisation of that sort is called socialism.

Spiethoff

'Preliminary Remarks to a Theory of Overproduction'

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PRELIMINARY REMARKS TO A THEORY OF OVERPRODUCTION

Lecture held on 17 December 1901 at the Association for Political
Science in Berlin

Arthur Spiethoff

It is, no doubt, impossible, strictly speaking, to deal with the theory of overproduction within the confines of a short lecture. If I am attempting it nonetheless, I can do so only because I have the honour of addressing experts who are familiar with the trains of thought involved, so that I can frequently confine myself to brief indications. My task is to speak quite generally about the theory of overproduction, but since the phenomenon is not a unified one, I must begin with a breakdown of the problem. Firstly, there is the overproduction that concludes a period of boom and is often part of the phenomenon described as a general economic crisis; on the other hand, there is that overproduction which constitutes the content of a chronic, creeping depression. In other words, since both usually run into one another, what matters is, firstly, to explain how overproduction comes about, and secondly, the causes of its duration, which often extends over several years. Thus, all considerations relating to the first task must start from the phenomena of the boom, while everything relating to the second task must take the depression as its point of departure. The first type of overproduction is one of the causes of the general economic crisis, while the second is a consequence. This division should prove a useful heuristic aid in discussing the theory of overproduction, since from the contrast between boom and depression and the corresponding overproductions it immediately follows that all attempts at explanation that fit the *one* must fail for the *other*, and that a theory that fails to *differentiate* the two can at best explain *one* of them. With the aid of this distinction we shall also find that some overproduction theories and arguments which must be rejected out of hand if one is only considering one of the two phenomena will, on the other hand, prove very useful if applied to explaining the other overproduction.

As far as the expression 'overproduction' is concerned, it simply means that production and consumption of goods are not in equilibrium, with

consumption falling short of production and an accumulation of stocks of goods; the term is a general name, not linked to any definite causative mechanism, but used to designate conditions which differ significantly from one another in nature and only resemble each other in external appearance. The reason may be that there is no current need for available stocks, and these are effectively unconsumable; Lexis calls this *objective overproduction*. However, if it is only economically useful employment of the goods, in accordance with the principle of economic efficiency, that is impossible, then that can be called *absolute economic overproduction*. On the other hand, the phenomenon may be due to the fact that, although need does exist, it cannot manifest itself in effective demand; the reason for this may lie in prices or in the income of the specific buyers. In the latter case, the term *underconsumption* is often used, while in the former case, where the disparity between consumption and production is due to sellers demanding excessively high prices, it may be appropriate to speak of *overcharging*. Another situation arises when too many category A goods are produced, but too few category B goods, so that a minus corresponds to the plus; in that case there is a partial overproduction combined with a partial underproduction, something one could call *disproportional production*. In view of the fact that overproduction does not as a rule prevail in all branches of production simultaneously, but only in some of them, and that strict general overproduction actually ought not to occur, the question arises as to the scale of overproduction at which such general overproduction should be assumed. The degree of influence exercised by the phenomenon on the course of the whole economy should be a usable criterion. If the overproduction is unable, whether because of its small spread or its low intensity, to depress the whole operation of the economy, then one can speak of *partial overproduction*; however, if it causes a general downturn, a depression of the entire economy, then it will, in contrast, be appropriate to call the phenomenon *general overproduction*.

In order to find the link to the more comprehensive problem of the 'general economic crisis', which includes overproduction, it should be briefly noted that here, too, different situations must be distinguished. The crisis can perhaps be defined as the span of time during which, to the accompaniment of exceptional phenomena, the transformation of a morbid economic situation into a normal one is decided. This includes two distinctions, one factual, the other temporal. A mishap striking an otherwise healthy economy out of the blue is not a crisis, even if some external symptoms, e.g. numerous bankruptcies, may be very similar; a crisis is a consequence of an antecedent sickness of the economy itself, and must have its causes there. In temporal terms, the word, in accordance with Clement Juglar's suggestion, only refers to the brief reversal of direction, whose arrival is usually accompanied by violent symptoms, and from which we must distinguish the run-up (boom and over-speculation), on the one hand, and the process of completion and recovery (slump and depression), on the other.

I shall omit any detailed consideration of the overproduction theories of particular individual authors, and will, rather, briefly attempt to discuss some principal categories in summary fashion.

I.

I shall begin with the view which Eugen von Bergmann calls the *simple overproduction theory*. This is the belief that unrestricted development of economic forces, in particular, an increase in the number of machines and the growing division of labour, lead to a faster increase in production than in demand. I think that this view, if thought through fully and rigorously, leads to the underconsumption theory, and can therefore be discussed together with the latter. However, we should already make the general observation here that growing productivity as a cause of overproduction is hardly relevant to the type of overproduction which precedes crises, but rather to the type which follows them.

The doctrine which derives overproduction from a *wrong allocation of the productive forces* is extremely widespread; this view brings together adherents of both liberal individualism and socialism. Where they diverge is in the grounds they give for it. According to Say, James Mill and numerous authors of similar outlook, the free operation of the economy does not involve any crises or overproductions, but only, as a result of the misallocation of productive forces, partial overproductions, to which a partial underproduction corresponds, and which quickly balance themselves out. If general overproduction nonetheless arises, it is the result of forcible intervention in the natural mechanism. This view is founded on the theory of the necessary conformity between production and consumption and between supply and demand, based on the idea that production necessarily leads to consumption, because producers only manufacture goods for the market if they want to exchange them for other goods. This theory is not entirely correct even for pure barter, because it assumes that one half of the population produces precisely what the other half wants to consume, and vice versa; far less, as Marx in particular has argued, is it valid for a money economy, since it may well be that some producers wish to sell but not to buy, preferring to accumulate the money as capital. Lastly, as far as explanations of crises and overproduction based on forcible intervention in the natural mechanism are concerned, it is of course impossible to do anything with so general a catchword.

The doctrine of the misallocation of productive forces is given a different foundation when it is linked to the distribution of income, and an excessive increase in the means of production is regarded as a forced measure for recipients of surplus value if they want to realise the surplus value. It may well be that as a rule the main focus of overproduction is on goods for reproductive consumption, but I do not believe that it is correct to see

excessive reproductive consumption and occasional overinvestment in production facilities as forced measures of the present system of ownership for the realisation of surplus value. Any impartial observation of the boom and overspeculation in which these overinvestments occur shows that not only do they not arise from any predicament but, on the contrary, they take place with all of credit's tricks and exaggerations. This whole line of argument appears to take account only of that part of production which produces consumer goods and whose sales can indeed be reduced by capital formation. However, it is precisely from a lack of investment-seeking capital that the other part of production, which produces means of production, suffers towards the end of the boom; it is true that its sales can also stagnate because there is no need for new production facilities, but overproduction in this area may well arise equally frequently from a lack of investment-seeking capital to enable the means of production to be used to create new production facilities. Tugan-Baranovsky, the most recent advocate of this line of thought, has indeed abandoned the view that disproportionality is a *necessary* consequence of private property and the present distribution of income. He says: 'If social production were organised in a planned manner, if those directing production had complete *knowledge* of production and the *power* to shift labour and capital freely from one branch of production to another, then, no matter how low society's consumption might be, the supply of goods could not exceed the demand. But the accumulation of capital in conjunction with a complete planlessness of social production and the anarchy prevailing in the goods market, inevitably leads to crises.' Here, the incorrect system of ownership and income distribution, which must necessarily lead to overproduction, has thus been replaced by the absolute inability of the present social order to allocate the productive forces proportionally. Whether the socialist state will possess this ability is a matter of faith; it is certain, however, that even its leaders will not have 'the power to shift labour and capital freely from one branch of production to another'. This achievement only occurs in logical deductions; in the real world, it will always be impossible.

The fundamental view of the numerous proponents of the *underconsumption theory* is that overproduction and crises arise because a considerable portion of output must remain unsold, since the purchasing power of the workforce does not grow in step with rising productivity, but is weakened by the accumulation of surplus value, which accrues in the form of business profits, ground rent and interest on capital to too small a number of people for them to be able to consume it. If one runs through the individual possible ways in which surplus value might conceivably be used, then the following can be dismissed immediately:

- 1) that the recipients of rents, etc. wish to consume their entire income and succeed in finding the types of products they desire, for this means harmony between production and consumption.

But it is also out of the question

- 2) that the recipients of rents, etc. wish to consume their entire income, but fail to find the products they desire.

In that case it is a matter of wrongly directed production, of partial underproduction to which a partial overproduction corresponds, to establish which it would be necessary that corresponding to the excess supply at one point there be demand in excess of supply at some other point, a state of affairs at odds with the situation to be explained, in which excess demand corresponding to the excess supply cannot be demonstrated. The only case that can be considered a possibility is

- 3) that the recipients of rents, etc., even if living in the greatest luxury, cannot or do not wish to consume all their income.

Here the following sub-cases are possible:

- a) the income is hoarded, causing corresponding quantities of output to be absolutely unsaleable.

To this case we shall return. The following sub-case is also possible:

- b) the income is transformed into earning capital and either used directly for reproductive consumption or else lent out.

In the event of the capital being lent out, it would be hard to demonstrate any possibility in which it was not eventually used to purchase some products or other, thus being consumed either directly or reproductively. For otherwise it could only be used for hoarding, which will, however, not involve borrowing by anybody. Thus, the transformation of income into earning capital cannot result in an absolute unsaleability of products, but only in a temporary or partial one.

- α) A temporary unsaleability if the capital lent has to traverse a long path, requiring considerable time, before being used to purchase products.

We shall consider this case later.

- β) A partial unsaleability if the borrowers fail to find the particular products they are seeking at the moment.

This case, like no. 2 above, forms no part of the picture to be explained, and must be ruled out.

Thus, only two cases can conceivably be considered, namely case 3 a, involving absolute unsaleability due to income hoarding (underconsumption), and case 3 b α, involving occasional partial overproduction caused by the loss of time during the transit of loan capital to the purchase of goods.

As far as absolute unsaleability (underconsumption) is concerned, during the run-up to the crisis, when stocks are, after all, being accumulated, hoarding on any sizeable scale is unlikely because it is precisely during this period that the utilisation of capital yields the greatest returns. Above all, there is no reason to assume *increased* hoarding during this period, which is the only thing that could cause *greater* underconsumption or overproduction and the expansion of stocks, since not even the banks, whose *ex officio* mission it is to accumulate capital, are not doing so, but, on the contrary, are letting their cash balances dwindle more and more. If one takes account of the reduced purchasing power of money during the boom, hoarding during this period would even have to increase considerably just to maintain stocks of goods, whose value has increased, at their old level. Attracting and retaining money at the outbreak of the crisis, during the panic, is not relevant here, because at that point overproduction already exists.

As far as occasional partial overproduction (3 b α) is concerned, there would seem to be no reason why just during the boom the transformation of income into earning capital should take any longer than at other times. Thus, even if under certain circumstances, whose presence and strength would have to be determined in each particular case, the prevailing type of income distribution might be capable of causing underconsumption and partial overproduction, it is unlikely that this will occur to any great extent.

In response to all those authors who explain overproduction and the ensuing crisis by a deep gulf separating production on the one hand and purchasing power and consumption on the other, and inherent in the present economic and ownership system as such, it must be stressed that experience provides no evidence for it. Great as are the errors of detail perpetrated by J. B. Say and James Mill in arguing for their doctrine that the total volume of production and that of demand *necessarily* coincide, it is certainly true that on the whole the two do in fact tally. As a rule, they largely correspond, while disharmony on any great scale is the exception. The line of argument of the two authors mentioned assumes that every purchase is a sale and that products are exchanged for other products, with money only serving to facilitate the finding of buyers, just as advertisements do, for example, because it is not money, they say, that makes sales possible, but the abundance of other goods. When Marx argues, rightly, that the exchange of goods for money does not necessarily entail the other exchange of money for goods, that doubtless refutes the idea that a sale *must* be followed by a purchase, but does not prove that it does not nonetheless *follow* in the majority of cases. In the money economy and the credit economy, just as in the barter economy, products, in the last analysis, are exchanged for products, and even if it is not inherently inevitable that they tally against each other down to the last hundred-weight and metre, experience shows that, by and large, that is what actually happens. The capitalists' addiction to profit, which socialism usually emphasises so

strongly, does not permit that the exchange of goods for money should fail to be followed by the exchange of money for goods, i.e. that money capital should lie idle, something especially true for boom periods, when it can yield the greatest returns. However, it is only with behaviour during such periods that we are concerned in the present section, since here we are only discussing the overproduction which ends the boom.

The main proponents of the theories here under consideration assume that overproduction arises through a substantial portion of output remaining unsold because the ability of the workforce to consume does not grow along with increased production, but is weakened by the accumulation of surplus value. If this latter point is granted as a premise, the following conclusion ensues. If, to start with, a part of output (and initially, perhaps, a small part) remained unsold due to the appropriation of surplus value, the immediate consequence would be a fall in prices, later followed by a decrease in production and in job opportunities. The more this process intensified and was repeated, the lower prices would have to sink, the smaller output would become and the greater the scarcity of work. General immiseration would necessarily occur, as would indeed be entirely in accord with the rest of socialist thinking, and there is no predicting how the situation might end, since the masses would hardly calmly resign themselves to dying of hunger. The facts, however, reveal the opposite course of events, since the overproduction which acts as the cause of the crisis is generally preceded by a boom and not a slump. In other words, the collapse would have to be the opposite of the kind that is observed. Accordingly, the uneven distribution of income and the accumulation of surplus value cannot cause any of the overproductions here under consideration.

II.

All things considered, it seems right not to seek the cause of overproduction in a wide gulf between supply and demand inherent in the present economic and ownership system, but rather to attempt to derive it from special causes arising from the mechanism of the boom. The boom starts in particularly promising branches of production, from which capital expects a degree of profitability contrasting with the otherwise depressed rate of return, and from there a general upswing develops. The boom's first effect on goods production is that existing production facilities are fully utilised. There follows a second stage, in which new production facilities are created; this is the period in which there is a real shortage of goods. The new facilities absorb considerable investment and involve high reproductive consumption, without the products of the expanded reproduction process initially appearing as a counterweight. This occurs in a third stage, in which new businesses not only appear as demanders, but also as suppliers;

a time begins in which high prices are already at risk. The final period is a reversal of the second, with feverishly increased production flinging its products onto the market in the absence of corresponding equivalent consumption. It is the derivation of this situation that is crucial.

The boom and the subsequent overproduction do not culminate in products of basic, direct consumption, but rather in those of the big industries, which serve *reproductive consumption*. A number of tasks had accumulated for these products; after these have been accomplished, the frenzied demand must end. In every boom, the impetus stems from particular causes, perhaps the equipping of one's own country with new inventions, or perhaps the opening up of foreign markets which are then developed economically with the capital of the old civilised nations. The essential thing is that at the start of every sizeable boom, production is confronted with a vacuum in two respects. Regions just opening up must initially be provided with equipment up to a certain saturation point, and in the old regions, new inventions have to be delivered to a large number of economies on a sizeable scale for the first time. However, due to a lack of entrepreneurial spirit, the depression has also left much that was necessary undone with respect to old needs. Here it is not only a matter of highways and new enterprises of the most various kinds; in a thousand existing enterprises, too, completions were really necessary, old, worn steam engines, machine tools and other machines ought to have been replaced with new ones, but since times were bad, people made do with repairs. All of this demand largely consists of needs that are satisfied for many years to come, once a certain satiation process has taken place. The state of the economy at any given time corresponds to a certain stock of mines, iron and steel works, means of transport, railways, factories, etc.; the use that exists for coal, locomotives, steam engines and dynamos is more restricted than that for meat, boots, clothes, etc., for which, given the present average standard of living, latent needs in fact always exist, and whose market conditions lie far more in prices, on the one hand, and income levels, on the other. After a few years of boom, the needs for goods for reproductive consumption that had remained unsatisfied during the depression years or which had newly arisen underwent a satiation process, so that it was no longer a question of filling an empty vessel, but only of replacing the outflow and topping up in accordance with the progressive expansion of the economy. The special tasks that appear at the beginning of the boom can be accomplished sooner or later; if people rush ahead and create new production facilities as big as if they were dealing with lasting demand rather than the filling of a vacuum, then the considerably increased production will fail to meet with any equivalent demand.

The circumstances of *investment-seeking capital* move in parallel with existing needs for reproductive consumption. Every act of reproductive consumption requires a capital investment, and in the long run the scale of reproductive consumption is therefore dependent on the quantity of avail-

able free capital. At the beginning of the boom, large supplies of investment-seeking capital, accumulated during the depression, are available, which, though constantly replenished, are nonetheless gradually absorbed, so that from a particular moment onwards reproduction can no longer call on the accumulations of the depression to any great extent, but has to depend on newly formed capital. Thus, just as on the one hand there exists a sizeable need for reproductive capital that must be satisfied just once, on the other there is available a sizeable supply of capital that must be immobilised just once. Thus, reproductive consumption, which has grown rapidly during the boom, runs up against a limit not only as regards needs, but also as regards available capital, and even if needs were to create a desire for a further expansion of reproductive consumption, that expansion would have to rely exclusively on newly formed capital and could not continue to also fall back on supplies handed down from the past.

For both of the reasons given, it is impossible for the upward movement of reproductive consumption to advance in the same proportion as hitherto, indeed even the expansion to date may be impossible to maintain, but there can also be no doubt that demand and consumption are to some extent artificially squeezed, and could be kept far larger and more effective than in fact they are. The reason lies in overspeculation and in the kind of *price formation*; it lies in the fact that with increased production and the decline of urgent needs, the natural basis and justification for the high prices prevailing hitherto disappears, and the attempt to retain them nonetheless artificially impedes consumption. Once the basis for the former strong demand disappears because accumulated needs have been met and accumulated supplies of capital have been absorbed, an effort should be made to compensate for this in some way at least, by sharp price reductions.

Although up to now it has perhaps been permissible to speak without qualification of production which serves reproductive consumption, it will now be necessary to make further distinctions. The big investments of capital goods and labour power in the development of new mines and the construction of new iron and steelworks, brickworks, etc., i.e. of production facilities for *raw materials*, for goods of the last order, must cease under all circumstances, for both of the reasons first given. They could not be continued in the same way as during the boom, even if prices were lowered, since a further *rise* in the consumption of raw materials is out of the question; all that is possible is to limit the fall as much as possible. New investments in raw materials industries, which are economically undesirable in view of existing needs and free capital resources, would also be counteracted purely from the standpoint of private industry by the fall in prices.

Someone who buys a machine today, or even builds a factory or a house, does not, unlike somebody who purchases a loaf of bread, need

another one tomorrow and the day after, but only in ten years time or more, and therefore the output of raw materials and other means of production, once increased, can only be sold if new circles of buyers are opened up for them. What is required is a considerable reduction in the prices of goods of the last order, so that the industries which depend on them can strengthen their own sales by drawing in new circles. After raw materials, it is appropriate to next consider first-order goods, in other words finished *consumer goods*, and then the series of those lying in between. Among objects of immediate consumption and use (first-order goods), there are many which can achieve higher sales through price reductions; this is least true of the basic ones and most true of the higher ones, because the latter are made accessible to circles hitherto deprived of them. The bicycle provides a particularly striking example; as its price fell from 400 to 150 marks, a wider and broader demand for it opened up. Whenever the prices of any goods satisfying immediate needs are reduced, the demand for goods of *second, third, etc., order* (raw materials and other means of production) immediately rises, without there initially being any need to contemplate an expansion in the production of any of these goods categories, but only the maintenance, as far as possible, of the old scale of production. Amidst the price rises of the boom, many antiquated means of production remained profitable and therefore did not have to vanish immediately when better ones appeared; however, if the prices of first-order goods now fall in order to produce greater effective demand, production must be generally equipped with the most advantageous aids, whose sales, in turn, will be facilitated if their prices are reduced, rather than being held at artificially high levels. A sharp reduction in the building of railways, the construction of new power stations, engineering works and the like will inevitably have to occur at this stage of the boom, but here, too, it may become evident that some projects that were unprofitable or very risky with the old, high and excessive manufacturing costs, become promising, especially if new needs are awakened. There can be no doubt that at this stage it is precisely sound and perceptive entrepreneurs who refrain from many investments because the high production costs cut profits permanently. It thus becomes clear for all classes of goods, from the first order to the last, that abandoning high prices would bring relief, while, conversely, failure to adapt prices to the changed situation will necessarily promote overproduction. Customers, too, are all positively counting on sharp price reductions, and if these do not occur, they hold back their demand deliberately and to an excessive degree, divesting themselves of all their stocks, thus further increasing the producers' misery.

In no boom is it possible to keep prices at their highest level to the very end, but the mania for keeping them rigid is always universally present, and regularly aggravates overproduction. If people go so far as to hold prices artificially with the aid of credit and by holding goods back from the market, then that is the surest means of producing a severe crash and, via

bankruptcies, forced sales and all sorts of other predicaments, a sudden plunge in prices, thus throwing all production into disorder.

So far, we have been discussing how reproductive consumption, mainly, stagnates by performing particular new tasks or accumulated old ones, by using up the stock of idle capital and by failing to adapt its prices and thus failing to win new circles of buyers for either reproductive or *direct consumption*. Insofar as the latter is in question, this is a matter of a failure, in the fourth stage of the boom, to accommodate a given level of purchasing power, assumed for the moment to be unchanged, a failure to clear away obstacles and provide relief. A few additional factors now enter the picture, which make even this standard of purchasing power appear diminished, thus playing into the hands of 'overproduction', especially of goods for *direct consumption*, from the other side.

While on the one hand the boom and the rise in prices have a stimulating effect on production, they can, on the other hand, have a crippling effect on the consumption of certain circles. The question arises as to whether, parallel with the rise in prices during the boom period, an increase in income occurs among all social strata sufficient to at least maintain the former standard of living. We cannot go into this issue in detail here, but shall just briefly remark that various outcomes are possible. During the boom of the forties, for example, there was a marked deterioration in the standard of living of the broad masses in Germany, while in the second half of the century this probably did not happen, except perhaps just once more in the fifties. As far as the more wealthy sectors of the population are concerned, on the other hand, the pay of whole sectors, especially the liberal professions and civil servants, commonly rises very little if at all, so that here a diminution in purchasing power occurs. Those capitalists who depend on returns from fixed-interest securities will also see no rise in their income, and the profit rate in agriculture may remain unaffected, or even fall as a result of increases in wages. The same effect of reduced purchasing and consumption power may result from rising productivity, especially if due to labour-saving machines. This might seriously damage certain groups of entrepreneurs and thrust skilled workers down into the masses of the unskilled. That such an effect is possible cannot be denied, but probability considerations make it unlikely that it will exercise a noticeable influence precisely during boom periods. During such a development, and with prices rising, all production facilities are usually profitable, and it should therefore not be assumed that the purchasing power of the entrepreneurs and workers in the affected branches of industry will be reduced. But even should this occur in some sectors, it could not set the overall operation of the economy on a downward path, given the preponderance of other tendencies working in the opposite direction. All of these changes, even when they can actually be established with certainty, only mean suffering for the individuals affected, which, while it may be very painful for them, has no immediate impact on the overall state

of the economy, for even if the purchasing and consumption power of some has been reduced thereby, somewhere else the profits and hence the consumption capacity of others have inevitably been increased. A tacit precondition for this during the first three stages of the boom is that the profits and price rises in question are realised, i.e. that the circulation of goods proceeds undisturbed. So long as this is the case, the only thing that might happen is that the favoured groups fail to consume those goods which are being less used by those whose income has fallen, but turn rather to other categories. A crucial factor here is whether the income shifts only occur among members of the same class, or if the classes themselves, each considered as a unit distinct from the others, receive altered shares. Where changed distribution within the same class occurs, the possibility that the changes will balance out is quite generally a plausible one. The greatest effect will inevitably occur if the shift occurs between very different classes, e.g. between entrepreneurs and workers, thus altering capital formation and reproductive consumption on the one hand and direct consumption by the lower classes on the other. Even if, by good fortune, all the changes we have mentioned balance out and so do not cause any decline in total consumption, it is nonetheless important that even during the most splendid boom, a number of factors exist which depress the income of certain groups and tend to reduce consumption; if they have no effect during the first three stages, that is simply because of the other, far stronger, influences of the boom, which cancel them out. As these latter factors become weaker and finally no longer suffice to neutralise the former, the situation is bound to change. Two different aspects are principally involved here, namely, firstly, the dependence of direct consumption on the maintenance of production which serves reproductive consumption, on the purchasing power of the workers employed in such production and on the profitability of the capital resources employed there, and secondly, the difference which is bound to arise when the profits from high goods prices are no longer effective and immediately realisable, i.e. cannot contribute to consumption in the form of direct or reproductive consumption, but become fictitious profits, which will only become available through sales which it is hoped will occur later.

First of all, as far as the latter circumstance is concerned, it triggers at a single stroke the depressing effect of all the factors just discussed. If goods must be partially held back so as to maintain prices as far as possible, and the profits which depend on them can no longer be realised, then the reduction in consumption which has occurred among some groups as a result of the price rise can no longer be cancelled out by increased use caused elsewhere by the same factor. If the necessary restriction of direct consumption is nevertheless avoided for the moment with the aid of credit, that can only last as long as the credit lasts, and makes more severe collapses in the future inevitable. As regards the other point, that of the dependency of direct consumption on production which serves reproduc-

tive consumption, its effect is as follows. As shown earlier, reproductive consumption must inevitably decrease in the fourth stage of the boom, resulting in unavoidable pressure on income and direct consumption, since entrepreneurs' profits and workers' earnings both fall. However, there is an additional reduction in income and consumption which can be avoided. Cutting production unnecessarily in order to keep prices high artificially reduces earned income and gratuitously adds a new cause of overproduction to the previous ones.

As established earlier, at the beginning of the boom's fourth stage, production for reproductive consumption outstripped both needs existing over the long term and investment-seeking capital resources available in the long term. The situation might be the same in the industries producing for direct consumption; it could be that here, too, more is produced than can be consumed within the limits set by needs or bought within the limits set by income, but even if this is indubitably established for one branch of industry or another, the situation here is nonetheless a considerably different one. In the first place, goods for direct consumption do not usually satisfy the needs corresponding to them for as long as is the case with reproductive consumption. Here too, it is true, use can extend over long periods, which for some goods, such as furniture, may last for decades, but that is not the rule; in particular, it does not hold for the main branches of industry, such as textiles. Thus the industries producing for direct consumption, even if at some point they, too, have brought about a state of satiation, can generally reckon on a shorter period of satiation and can thus start breathing again sooner. Furthermore, by means of quality differentiation in upward and downward directions (both improvements for the wealthiest and reductions for the less wealthy) and of price cuts, they are able to awaken new needs to an almost unlimited degree. Thus, if all were well in the industries of reproductive consumption and, in particular, the earned and unearned incomes they generated remained undiminished, it would hardly be possible for such great overproduction to arise in the industries of direct consumption as to be able, on its own, to cause the boom to collapse, unless one or more very big export industries were to suddenly lose their markets. However, that is a rare occurrence and one, moreover, independent of the typical course of the boom, being more in the nature of an accident, so that we can omit it from our discussion here. Thus, for overproduction in the branches of industry serving direct consumption, too, overproduction in the industries producing means of production is of the very greatest, not to say decisive, importance. Only in colonial countries are matters significantly different.

Let me now briefly summarise the reasons why demand lags behind and overproduction occurs in the fourth stage of the boom. They are: 1) the filling of the vacuum that has arisen through accumulated needs, and 2) the absorption of the stock of investment-seeking capital handed down from the depression, which inevitably considerably reduce reproductive

consumption. This inevitable event is exacerbated by 3) a policy of price rigidity. Once these causes have undermined reproductive consumption, the resulting deterioration in income automatically disturbs direct consumption. When the whole boom has thus been mortally wounded, there are added 4) the falls in income which had already partially developed during the boom and whose depressive tendency has hitherto been suppressed, but is now triggered off.

Thus, referring back to the different types of overproduction which we outlined at the start, we are dealing partially with an *absolute economic overproduction*, firstly, in relation to raw materials production facilities, which must under no circumstances be increased, since they already exist in excess, and secondly, in relation to the industrial raw materials themselves, insofar as they serve the manufacture of goods whose sales no price reductions can force beyond a certain limit. The same holds true for production facilities for intermediate products and consumer goods and for those goods themselves, provided they are subject to similar conditions. For another portion of raw materials, as well as for intermediate products and consumer goods, *overpricing* prevails, and the 'overproduction' could be eliminated or considerably reduced if prices were cut. *Underconsumption* occurs when, during the fourth stage, certain parts of production are shut down and income levels fall. Even if initially only partial overproduction occurred, in that only some branches of production suffered, henceforth so many others are affected, and those so severely, that the boom tendency turns into a depression and slump and *general overproduction* manifests itself.

III.

The second category of overproduction, which constitutes the content of the slump and depression, is in the first instance a rebound of the antecedent boom and overspeculation, both psychologically and economically. It is of importance for the extent of this reaction (though we shall not argue this here in greater detail) whether the boom ended with overspeculation and a subsequent crisis, or whether the latter was avoided. Another significant consideration is the country's position within world economic exchange; if capital is supplied to it during the boom, this cessation might be felt less by it than by the supplying country. In the latter, production had to a considerable extent prepared itself for sales abroad, and when these cease, it suffers from distressing overproduction, whereas the receiving country is equipped up to a certain degree of saturation, and does not necessarily have to suffer a painful rebound, but can, rather, rejoice in the supply of capital received. If this is in fact frequently not the case, the reason lies in insane overspeculation and a forced increase of prices and in inappropriate or half-finished production facilities. However, this is not an

inevitable state of affairs, whereas the industry of the investing country is bound under all circumstances to feel the cessation or marked diminution of its exports in the form of overproduction.

The *psychological* reaction is expressed in the fact that the exuberant spirit of enterprise is followed by complete depression. A widespread distrust of new enterprises develops, and owners of capital frequently prefer to let their resources lie idle or to content themselves with lending at low interest rather than undertaking any investments. This is a stage of the acquisitive drive that must be regarded as the successor state to surfeit. While the boom stage can perhaps be described as that in which the drive is already somewhat more active than is necessary for the satisfaction of basic needs, overspeculation represents the overstimulation and overloading which is necessarily followed by a state of dullness. More than that, however, the losses and damage suffered create feelings of positive aversion which cause reluctance to engage in new activity. This state, overcoming which requires a period whose length depends on the extent of the excesses and losses, may be further drawn out and prolonged due to fresh damage being constantly inflicted by the depression. This damage consists, on the one hand, of capital losses resulting from the numerous bankruptcies which occur during the depression and the lower valuation of most capital goods, and, on the other hand, of falls in income which result from the unemployment of overproduction and the falling capital rate of interest and which affect workers' earnings, entrepreneurs' profits and the capital rate of interest. In the first instance, this constellation of factors certainly fosters psychological despondency, especially insofar as memories of the great collapse are still alive; this is the period in which even promising undertakings must remain unrealised, because the trusting, confident, entrepreneurial spirit is absent. But in the long run, the more the former gross excesses and their immediate consequences recede into the past, the more does the situation generate psychological correctives, just as are produced by depression in the economic sphere. The generally unfavourable situation awakens the wish to escape from and put an end to it, and this necessarily produces, after a certain time, a desire for new undertakings, thus paving the way for the beginning of an upswing. The latter, however, is not thereby guaranteed even in purely psychological terms, quite apart from economic requirements, for that would demand, in addition, certain ideas which act as a stimulus to the acquisitive drive; discussion of these, however, already falls within the theory of booms.

Economically, matters are very similar. The boom and overspeculation gave rise to production facilities far exceeding long-term requirements, for which there will now be no adequate use for a long time to come, until particular new tasks arise or regular economic requirements increase. However, it was not only production facilities that expanded more than was necessary for completion. Many facilities for continual direct use, e.g.

means of transport, residential buildings, etc., were also created in advance for the immediate, and in some cases even the quite distant, future; in many cases, they expanded to a level into which the economy would still have to grow, quite apart from those totally inappropriate facilities which would always be out of place. Thus, in some cases even completion of facilities for consumer use is unnecessary for a considerable time, due to the provision made by overspeculation. Therefore, if production declines during the depression, that is partially a natural reaction to the boom and overspeculation, during which output was in some respects positively excessive, but quite generally went to the limits of current requirements.

These circumstances, which also caused the boom to end, whether suddenly, through a crisis, or via a gentler transition, have led to a break with the preceding situation in all areas of the economy. Prices have fallen, many production facilities cannot operate competitively at the low prices, so that there are constant bankruptcies, the losses suffered by capitalists force cutbacks, large sections of the population lack adequate work opportunities; in short, income and the rate of profit fall, and consequently the ability to consume does too. This plunge from the previous height, brought about by the crisis, now turns into a slow, steady downwards movement, taking place via the mutual interaction of the various spheres of the economy. The fall in the rate of profit and in workers' earnings depresses consumption, shrinking consumption reduces prices, and in the long run the fall in prices diminishes production, the cutbacks in production once again reduce workers' earnings and the rate of profit, etc., etc. A real vicious circle develops, and the mutual interaction of the various areas of the economy sustains and intensifies the tendency towards depression.

This tendency, arising simply from the reaction against the exaggerations of overspeculation and the mutual interaction of the individual spheres of the economy, is now reinforced by several other circumstances. During the depression, the problem for entrepreneurs consists (aside from the awakening of new needs, which will not be discussed here, since its place is in the theory of booms) in *raising productivity*, improving working methods and the division of labour, and acquiring labour-saving machines. However, the effect of this increasing productivity is quite different during the depression than during the boom. The new technology devalues many productive facilities, and the labour-saving machines may either deprive certain portions of the labour force of employment or push skilled workers down into the masses of the unskilled. It is one of the fictions of liberal individualism that it is possible to shift capital and workers easily and quickly from one branch of production to another. In elegant deductions, this process certainly occurs smoothly, but in the real world it can only be accomplished at the cost of heavy losses and much time. Some capital assets are completely lost and cannot be transferred at all, and the situation with respect to the workers is similar. The older skilled workers,

in particular, will generally be less likely to be able to switch to a new skilled trade, and even for the younger ones, doing so involves sacrifices. The destruction of machinery and the storming of factories which frequently accompanied such radical changes give some idea of the hardships entailed by this intervention in the circumstances of the workforce. It is true that the whole operation contains the corrective within itself, inasmuch as in the long run, growing productivity reduces the prices of consumer goods, bringing rising consumption, but this effect is not immediate, especially if the process occurs during the depression, when very strong stimuli are necessary if the downward tendency is to be overcome. Thus, the incomes and purchasing power of groups of entrepreneurs, capitalists and workers will be depressed for some time at least. During the boom, such an occurrence cannot influence the overall operation of the economy, since its effect is outweighed by the opposing tendency of upswing and prosperity which pervades the whole economy. During the depression, however, such paralysing forces are absent. On the contrary, in all or most other areas, reinforcing downward tendencies prevail, and therefore during the depression the effect of rising productivity and of labour-saving machines is not only to increase overproduction immediately, and often for some time to come, in the particular branch of industry in question, but also, by reducing incomes, to promote the same tendency quite generally. The enrichment which, on the other hand, arises from inventors' profits or accrues to the favoured entrepreneurs who own the new or improved production facilities, and which ought to be capable of offsetting, or at least mitigating, these effects, has far less impact during the depression, as we are about to show. In the main, it only has any effect insofar as it is devoted to direct consumption; where it is converted into capital and added to the stock of loan capital, it remains largely sterile.

Earlier, when discussing the overproduction which ends the boom, we said that the prevailing type of income distribution has no influence on total consumption of output, because even if part of total income were to accrue to people who did not want to consume their share directly, but rather transform part of it into capital, that part would not be lost to consumption, because it would go into reproductive consumption, even if not direct consumption. This does not hold true of the depression, when the uneven distribution of income makes, rather, for overproduction. Here, a part of total income, by being capitalised, is lost to consumption, because during the depression the capital being formed is not all used reproductively; rather, large quantities of it are accumulated and left idle, augmenting disposable funds. Thus, because, during the depression, the reproductive consumption needed to make good some portion, large or small, of that part of total income not spent on direct consumption, is lacking, some output must remain unconsumed. During the depression, the exchange of goods for money is in many cases not followed by the exchange of money for goods, which fails to occur, the money ending up

in the large pools of funds instead. All income that is transformed into idle loan capital, whatever the causes that led to its accumulation, exercises this influence on the general tendency towards overproduction or, as we can put it here, underconsumption. The capital formation resulting from the rising productivity also belongs here. This store of idle loan capital, which grows during the depression, constitutes the counterpart to the absorption occurring during the boom, just as the predominance of the supply of goods during the depression corresponds to the predominance of the demand for goods during the boom, even if, due to increased prices, the quantity of goods corresponding to the accumulated investment-seeking capital is smaller during the upswing than during the downturn.

A brief word must be said on the matter of *entrepreneurial policy*. When discussing the overproduction which ends the boom, we mentioned price cuts and their effect in mitigating overproduction. Each price reduction, if it is not an effect of rising productivity, but occurs *ceteris paribus*, has two different effects. It stimulates the consumption, on the one hand, and reduces the incomes, on the other, of those taking part in production, thus possibly squeezing consumption of other goods. Thus, on the one hand, the measure does not appear entirely harmless, while on the other hand the question arises as to why it was recommended towards the end of the boom without any stress on its other side, reduction of income, although this is the reason that during the depression, when price cuts occur, after all, on a large scale, they fail to surmount overproduction. The contrast between boom and depression helps us out of these difficulties. During the boom, it is initially a matter of goods for reproductive consumption, sales and consumption of which price cuts are intended to facilitate and support, whereas initially there is not as yet any reduction whatever in consumption of goods for direct consumption, for which, on the contrary, demand is frequently still predominant. If at this stage of the boom, price cuts occur at the right moment, then, given the general expansionary energy still animating the economy, they strongly affect the demand for the goods in question on the one hand, whereas the other aspect, that of the fall in producers' incomes, is felt little if at all, since it may only consist in an abatement of the frenzied demand for particular goods, such as stocks and shares, and of further rises in their prices, without affecting consumption itself. In any case, during the boom, stimulation of the consumption of those goods whose prices have been cut occurs immediately, whereas the influence of the corresponding fall in income, even if it manifests itself in a fall in consumption, appears far more slowly, via long, roundabout channels, and subsequent to the previous absorption of all possible saved-up subsidies; above all, it is spread, in a greatly weakened form, over many categories. During the depression, on the other hand, matters stand differently. Here, too, price reductions stimulate consumption, for in this period, too, there is in fact still considerable reproductive consumption, even though in many branches of production the preceding boom greatly over-

estimated current needs and already made provision for the future with forms of expansion into which the economy still has to grow. This consumption is certainly a consequence of the fall in prices, and the latter is therefore not without effect, even if it is unable by itself to transform overproduction into an upswing without the additional presence of other causes of booms. During the depression, the economy's expansionary energy is often nearly destroyed, or at any rate greatly reduced; instead of a spirit of enterprise, mistrust prevails, so that, as remarked earlier, even necessary tasks are left undone, and it is obvious that under such conditions a price reduction cannot have as stimulating an effect as during the boom. During the depression, this reduced positive influence is accompanied by a stronger effect from the other side of the coin, since when all subsidies have been exhausted, the fall in income is bound to affect consumption directly.

Despite all this, price reductions are just as essential during the depression as during the boom, for without them, consumption, especially reproductive consumption, would fall off even more strongly; they are a corrective which may entail severe pain, especially during the downswing, but whose effect is nonetheless predominantly beneficial. The question of whether price reductions should be avoided at the cost of cuts in production particularly requires special discussion. Every restriction of output means a fresh fall in purchasing and consumption power, and is thus a cause of the spread of overproduction to new areas; it is therefore of the greatest importance that production should be maintained as far as possible and not reduced without pressing cause. Such cause only exists if, even when prices are reduced as far as possible, the ability to consume remains inadequate, and is impervious to stimulation by the means available. It is from this perspective that one must gauge the effect which the cartels' production cuts will frequently have. It may be more advantageous to entrepreneurs' profits to sell a smaller quantity at a higher price than a greater quantity at a lower price, but to do so promotes general overproduction. This is one of the cases where the interests of entrepreneurs in particular branches of production are opposed to the general interest and where the cartels turn out to be inflicting economic damage. From the standpoint of the general interest and with a view to strengthening purchasing and consumption power as much as possible, it may not always be undesirable, but may on the contrary have a useful effect, if entrepreneurs actually expand production, in order to produce more cheaply and to be able to reduce prices. This, like undercutting generally, has damaging consequences if the battle becomes so intense that firms fail and cease production, although these are losses (from the standpoint of the general situation, as well) which are unavoidable in any depression. However, undercutting and the expansion of production, as long as they only occur at the expense of entrepreneurs' profits, and even if also accompanied by direct capital depletion on the part of efficient forces, have no generally

harmful effects, for, as already mentioned, during the depression there is no shortage of capital, but, on the contrary, a surplus.

While a decline in prices is thus indispensable, the most economically appropriate way to distribute the price reductions among the three participants, namely entrepreneurs' profits, the capital rate of interest, and wages, remains to be discussed. In the real world, this is of course a matter of the power of the various classes, who are not influenced in pursuing their pecuniary interests by theoretical considerations on the best manner of managing overproduction. However, theoretical clarity on this issue is not useless, even in purely practical terms, because, given the increasing importance of minimum wages in trade union policy and of government taxes on wages, such as exist in Australia, for example, the general population can occasionally find itself, after all, in the position of being required to express a view on this distribution. The question can only be settled casuistically. According as the burden of price reductions falls either entirely, or at any rate largely, on wages or on entrepreneurs' profits and the capital rate of interest, it will, in the first case, mainly depress direct consumption, and in the other two cases, reproductive consumption and the formation of investment-seeking capital. The answer will therefore depend on which of these three factors primarily needs to be strengthened and relieved, given the specific prevailing type of overproduction. During the boom, the situation may be such that reproductive consumption, and its maintenance, as far as possible, depend on vigorous capital formation; this will be the case when there is capital weakness but the state of needs is such that additional investment appears not merely permissible, but desirable. In particular, this case can arise in capital-poor countries, as at times in Australia, for example. This was the situation in Germany during the upswing of the forties, when the large investments would probably have been impossible without restriction of direct consumption. In such a situation it is right, when overproduction threatens, to shift the cut in prices onto immediate consumption and thus also onto wages, in order to strengthen the capital fund. Although this may appear harsh, it is better than the alternative; the workforce would also suffer if reproductive consumption stopped, as the burden would be even less equally distributed, and some workers would simply become unemployed.

Capital conditions will be more or less a cause for worry at the end of every boom, but in all the wealthier countries, after a boom lasting several years, satiation of needs in the area of reproductive consumption will generally be so far advanced that it too causes difficulties for the maintenance of the former level of consumption, and capital formation is therefore not of decisive importance by itself. In that case, attention will also have to be given to protecting wage income in order to maintain direct consumption.

The situation during the depression differs from both these cases. In a depression, the accumulation of investment-seeking capital is so great that

stocks of it swell to the point of plethora, and capital conditions present no difficulties whatever; nor, in this stage, does reproductive consumption depend in the slightest on vigorous capital formation, so that in this situation it is quite right to maintain earned income and direct consumption as far as possible. True, it is undeniable that the plethora of capital facilitates reproductive consumption, but this circumstance is not sufficient to warrant favouring capital formation to the detriment of earned income.

Despite the mutual effects on one another of the depressive tendencies in the various spheres of the economy, as well as the particular additional causes of slumps, the situation generates over time economic correctives from within itself, which join the psychological correctives already discussed. The peculiar situation of depression gives rise to a convergence and adaptation of consumption and output because, on the one hand, the improvement of productive facilities maintains and possibly raises reproductive consumption, while, on the other hand, downward pressure on prices, by weeding out defective technological facilities, leads to a reduction in output. An adaptation also occurs inasmuch as various facilities for consumer use, which had been in excess of current needs at the beginning of the boom, bring about both the emergence of new needs and further development towards themselves, as well as contriving that the satisfaction of old needs passes increasingly into their hands, so that and other businesses die off. As long as this process prevails fully, it will, like that of the decline of certain production facilities, just mentioned, initially have a predominantly unfavourable effect on the general situation, intensifying the depression through losses in income and wealth; however, when, after several years, it reaches a sort of conclusion, this part of its influence is eclipsed by the opposite tendency, which boosts other businesses, thus easing the situation.

Similarly, the slump in prices has a different effect after several years than it did initially; in particular, the stimulus it provides is better able to assert itself. This is due to influences from several quarters. Increased productivity tends to lead production costs to adapt to prices; in addition, a number of enterprises, mainly, no doubt, those that were overcapitalised, are now in other hands, or, if owned in the form of shares, have undergone capital reduction through consolidation. This process certainly has a depressing effect at first; but does not last forever, and once it has been weathered, the prices become bearable for an increasing number of businesses. All this makes it understandable that the low prices are now able to stimulate consumption more strongly, since their other aspect, the decline in income, has been weakened or eliminated altogether.

After some time, the accumulation of idle capital, by making capital easier to obtain, also generates a corrective which counteracts the depression. The rush of mobile loan capital drives the rate of profit ever lower, and if this trend coincides with a recovery of the rate of profit on immobile

capital, and a difference develops in favour of the latter, then this constitutes a factor that will at least stem any increase in the plethora of idle capital.

This development, which arises out of the depression after a few years, and in many different areas weakens or neutralises the tendency for the slump to advance, may produce a certain state of equilibrium, but only at a diminished level of general consumption and of the general standard of living. This can only be ended by a new boom, whose causes and preconditions, however, must be discussed in the theory of booms.

IV.

In conclusion, to complete the picture, I need only state the causes which make these states of overproduction possible. They arise from the difficulty of keeping track of events and correctly foreseeing future demand amidst all the complex turmoil, interlinked as it is with all parts of the economy, and now with part of the world economy as well; they are the natural concomitant of a free, private-sector system of production and consumption, mainly guided by prices and the rate of profit. If these circumstances, complex in themselves, are further complicated by human passions, if prices are driven up excessively by wild speculation and ill-considered and mistaken undertakings, then this criterion is bound to become wrong as well, and to lead production along incorrect paths. A people that supplies all its requirements from self-sufficient households never experiences overproduction, because each individual only has to act in accordance with his own needs, which he can easily gauge, rather than confronting a large market, organised in accordance with the division of labour and subject to a thousand and one influences. If, thanks to freedom of occupation, freedom of movement and the modern system of stocks and shares, the system of goods production can easily mobilise large quantities of capital and labour, then overspeculation is naturally greatly facilitated. Nonetheless, the slogans found in many authors' writings about the disorderliness and disproportionality of production are gross exaggerations, and if a socialist system is then prescribed without further ado as a simple and absolutely infallible remedy, the problem has merely been transferred to another area. Even if technical organisational power over production could be achieved by means of all sorts of restrictions on freedom, the difficulty of correctly predicting future demand and of allocating the productive forces correctly would still remain.

By way of introduction to a brief discussion of the *problem of periodicity*, let us take a glance at the development of crises. For reasons into which I cannot enter in detail here, I believe that all truly 'general economic crises' are essentially uniform phenomena, but this is quite compatible with the other view, that in individual historical crises sometimes one feature and

sometimes another is especially prominent, thus lending the phenomenon a distinctive character. Regarding this latter point, it seems to me that we can now distinguish particular forms which constitute a historical progression, not in the strict sense of economic history, but in that of economic theory. The most prominent features of the very first modern crises to occur in Western Europe (tulipomania, the enterprises launched by Law, the South Sea Bubble), as well as of the first crises seen in countries when they first enter on the capitalist economic path based on the division of labour, are speculation, the wild forcing up of prices and frenzied agitation. The uniformity of the crisis phenomenon is evident from the fact that these symptoms are also invariably present in the later forms, where they are, however, not so totally predominant as to render all other characteristics virtually invisible. The speculation revolves around one or more objects, the Mississippi Scheme, the South Sea shares, the tulip bulbs, or, as in the commercial crises involving specific goods suffered by trading centres such as Lübeck and Hamburg, around a few staples, especially colonial products and export goods; the expectation of profit, the confidence that prices will continue rising forever, are boundless. It seems to me that the following stage of development is characterised by the fact that the founding of new enterprises, occurring in the most primitive conceivable manner, but now assuming greater proportions, stamps its mark on the phenomenon. We are dealing here with an already advanced stage of a manner of conducting economic affairs that is specifically nationwide and based on the production of goods, and in which enterprises producing for a large-scale market play a major role, so that the external preconditions exist for a larger number of such business launches. An extensive, usually decentralised, banking system develops, which extends the various forms of credit to wide sections of the population and attracts considerable capital resources which had previously lain fallow and which it must put to use. During the boom, numerous business launches now appear on the market which frequently lack any realistic basis, are often aimed at speculative gains rather than permanent economic operation, and in aggregate show no consideration for the country's capital strength. In the end, the situation is that hundreds and thousands of business launches which have not been fully financed are swimming about in the market, with paid-in money amounting to 10–50% and promises of investment to 50–90%; and the state of the physical facilities corresponds to that of the financing. Preliminary work of all kinds is abandoned, foundations lie in the ground, factories stand empty of any machines, etc., etc. The conflict here lies in the fact that the facilities which have been planned and started require far greater free capital resources than are available. In a third stage of development, this is avoided on any large scale; here too, it is true, investment-seeking capital becomes scarce towards the end of the boom, but thanks to the way business launches are organised, which forms the successful side of the centralisation of the investment banks, the reason for the boom's

collapse is not that the enterprises and facilities which have been started are not financed, or that capital contributions cannot be paid, but that reproductive consumption has outstripped current requirements. Here, it is 'overproduction' which is absolutely predominant and provides the direct impetus for the collapse of the boom. While continuing to adhere to the uniformity of the crisis phenomenon, we can say that it is the direct cause of the boom's collapse, the preponderance of one factor or another, that is the *tertium comparationis* of these developmental stages.

The money and credit crises which are often said to represent a particular type of crisis constitute the truly economic content of the panic, of the climax of the 'general economic crisis', a moment intensified to the highest degree by a universal lack of confidence; thus, they are not a special type of crisis, but a component of the general phenomenon, one which may be lacking, but is usually present. It can also arise independently of the other crisis phenomena, but in that case its cause comes from without and is not rooted in the operation of the economy; there is then no crisis, but an accident, appropriately referred to as a squeeze.

Alongside this progression of the specific forms of crisis runs another, which is linked to the general development of the national and world economies. With the extensive expansion of the spheres of individual enterprises and national economies, which enter into increasingly intensive contact and growing interdependence based on the division of labour, ever more numerous sectors are interlinked by crises, so that the latter cover considerably greater areas and the economic conditions of the widest circles come to depend ever more intensely on the general market situation, the state of the economy.

Crises of the first type may be confined to more or less tightly delimited objects and circles of individuals, without all spheres of the economy being drawn in; the latter may only be affected by repercussions of private economic losses suffered by the persons directly involved. For example, if tulip bulbs are the only object of speculation, then productive capital remains uninvolved, at least directly, and could only be adversely affected indirectly. Strictly speaking, such crises ought not to be regarded as 'general economic crises' affecting the whole economy and all its spheres. But since at this stage of the economy, a dependency of all sectors on the market is still absent or only very partial, and the links between them are far looser, general crises of the modern type are not seen, so that this kind of special crisis stands at the head of the overall phenomenon in terms of developmental history. Occurrences of this kind are still seen today, whether as an isolated phenomenon or as a component of a general economic crisis, and they always retain a certain independence. This type, which under present conditions generally takes the form of a stock market crisis or a crisis in trade in goods, can still occur on its own, only affecting the general operation of the economy via repercussions, but even when it occurs as part of quite general crises, the other spheres of the economy

have proven relatively independent of it, for the general crisis has often only followed it months later. Indeed, the first historical crises appear to have been of a kind that had no far-reaching impact on the population at large or on economic life, in particular production, unless Wirth is really correct when he reports that during the Dutch speculation in tulips wide sections of the population took part in it, and 'money and goods, house and home, cattle, tools and clothes were exchanged or given up for tulip bulbs'. Things are different in the modern age, when the influence of the market extends to all spheres and it has come to embrace countless objects; here, 'general crises' really do occur, and their outbreak adversely affects the widest circles. The area of the crisis' sway and influence is bound to be almost limitless, one in which nearly all prices are determined by changes in economic conditions, so that almost no one is left entirely untouched, and in which the great majority of enterprises depend largely on the state of the market, so that the very livelihood of all those involved in them as workers or investors is affected. Accordingly, the general economic and social significance of crises has doubtless grown, and when the catastrophe comes, their consequences, calamitous in the most various ways, will be felt all the more generally, the further specifically national and global economic development advances. Despite this danger which modern development entails, nobody will want to forego the latter, for the only question is whether it does not, in spite of everything, represent an advance for the broad masses when compared with a state of feudality and restriction.

We now come to the question of how things stand with respect to the future recurrence of crises, and here I would like to make a division, distinguishing acute crisis catastrophes from the alternation of boom and depression. As mentioned briefly earlier, in a broader context the crisis phenomenon consists of 1) the boom and overspeculation, 2) an acute catastrophe, namely the crisis, which ends this state of affairs, and 3) the slump and depression. Brief consideration of the degree to which the preconditions and causes of the whole phenomenon are unchanging or variable seems to lead me to the conclusion that while the constant factors cause the alternation of boom and depression, the variable factors determine whether the transition occurs via an acute crisis, or takes place more gradually and gently.

As set forth above, *the essential difference between boom and depression consists in growing or falling reproductive consumption and in the growing or falling stock of investment-seeking capital*; anything else can only be a concomitant or a consequence. In order to avoid booms and depressions, it would be necessary that reproductive consumption take place completely evenly on an expanded scale, that future needs invariably be correctly discerned qualitatively and accurately calculated quantitatively, and that no mistaken dispositions be made which lead to long lasting, painful setbacks. This is an insoluble technical organisational task for a private-enterprise

economy. In addition, avoiding setbacks would require a largely stable technology or else productivity that only rose very evenly. In quiet times, great advances in this area always bring a danger of temporary overproduction, unemployment, and falls in capital values – in short, disturbances to the state of equilibrium in itself; during a depression, they will always initially intensify overproduction, and only if they occur during a pronounced, brisk boom accompanied by price rises will their depressive influence be overcome by the upward tendencies, as shown earlier. While these two complexes of causes by themselves make it impossible for the economy to advance smoothly, there is in addition the capitalists' and entrepreneurs' motivation, which is not steady, but subject to varying influence by the first two factors, as well as to the periodicity of human impulses. The world of entrepreneurs and capitalists will only undertake big investments and high reproductive consumption in response to special stimuli, in whose absence they will not occur; on the other hand, there will always be a tendency to overdo things if exceptional opportunities for profit arise, and a fear of doing so if sizeable losses have occurred. Consequently, reproductive consumption will never proceed evenly, but always take place in fits and starts, with setbacks and interruptions. Lastly, we must consider unevenness in the distribution of income; during the depression, this increases the accumulation of idle capital, which, as has been shown, promotes overproduction, while during the boom, it supports the tendency towards an excessive increase in reproductive consumption and the excessive creation of new production facilities. Of course, these effects merely reinforce, more or less strongly according to circumstances, a tendency which is already present and which would result from 'saving' even if income were absolutely evenly distributed. Although at the start we had to reject the theory (the underconsumption theory) which attributes the collapse of the boom and the acute crisis to the uneven distribution of income, nonetheless this factor does have an influence on the periodicity of boom and depression. Depressions and painful transition stages will always be unavoidable in the system of free, capitalist goods production based on the division of labour; every misestimation of future needs, every major technological upheaval or sizeable rise in productivity, is bound to disturb the equilibrium state of prices and the harmony between consumption and production at least temporarily, even when overspeculation and gross excesses of the acquisitive drive are avoided. In such a difficult transitional situation, the task of central economic management consists in appropriating enough to itself from the common manufacturing yield to permit even those directly affected a tolerable standard of living. Under the present economic system this can be done by means of relief work, whose essence consists precisely in disregarding the private economy's profit principle and imposing the resultant sacrifices on the population as a whole.

In their critique of the capitalist economy, Marx and Tugan-Baranovsky, as indeed socialism generally, are doubtless right on the crucial point for the question we are considering when they say that absolute proportionality of production, the only thing which can prevent all overproduction, is unattainable in the system of free production of goods and is only conceivable in a socialist state. Leaving aside all psychological and technical organisational reservations regarding the possibility of such a system, socialism forgets to add that the order it created would be a *tabula rasa*; it always speaks only of regulating production, whereas it would doubtless have to make at least equal use of the forcible regulation of consumption in trying to achieve equality of consumption and output.

While the unavoidability of alternating periods of rise and decline thus follows from the nature of our system of ownership, our economic system and the way in which the acquisitive drive must, regardless, operate within them, that does not mean that crisis catastrophes need recur for all eternity with equal inevitability. *Whether the boom ends in a crisis, or changes into depression more gently, depends on whether those exaggerations known as overspeculation, in conjunction with excessively tight credit, are absent.* In my view, there is no reason to give up hope that people will increasingly grow into the new economic forms of capitalist goods production based on the division of labour, that they will accumulate experience of how to prevent and meet this economic system's great dangers, that it will prove possible to constantly perfect our entrepreneurs' knowledge and training and that organisations will let themselves be increasingly adapted to the specific demands of the capitalist manner of pursuing economic affairs.

It is true that real difficulties are growing steadily due to the expansion of the market, but the number of technological and organisational aids is expanding at the same time. Modern communications, the growing publicity given to matters of all sorts, means of transport, increasingly unified currency conditions – these facilitate an overview and understanding of circumstances on the one hand, while on the other, for individual economies that venture too far forward and become embroiled in exaggerations, they create powerful correctives in the form of other economies' reactions. The weightiness of the masses who must be moved is growing considerably, and while, on the one hand, the market's expansion is increasing its complexity, on the other, the masses which speculation must sweep along are growing. In organisational terms, too, the development of protective forces is noticeable in the nationalisation of suitable branches of industry and in increasing centralisation.

Many believe that in cartels, in particular, the means for regulating production correctly have been found; these organisations can doubtless have a favourable effect if they pursue the right policies, but it is precisely at this point that I am somewhat sceptical. During the boom, what is needed is to prevent the establishment of unwanted production facilities, in particular ones for reproductive consumption, not to withhold goods from the

market for speculative reasons, and not to raise prices prohibitively, but, on the contrary, to cut them substantially at the right moment; during the depression, what matters is to stimulate consumption through an appropriate pricing policy and to preserve purchasing power by maintaining production and earned income as far as possible. The cartels will often lack the strength to prevent an excess of new production facilities during the boom, and their pricing policy is usually the opposite of what is economically desirable. A more favourable view may perhaps be taken of the kind of centralisation which embraces goods production from the raw materials to as near as possible to the final product, possibly with links to big co-operative retail societies – in other words, ideally, from goods of the first to those of the last order – because here the right sort of price formation, which starts with consumer goods, is facilitated, instead of being made more difficult, as occurs when the cartelised raw materials industries paralyse the production and sales of the industries producing finished products by prohibitive prices. It is true that this sort of industrial centralisation is only partially possible, and even then its implementation is much more difficult and can only proceed slowly. With specific regard to the significance of the cartels for avoiding phases of acute crisis, this depends especially on how they attempt to hold prices when overproduction first appears. As has been shown, cutting production, by reducing earned income, exacerbates overproduction, especially in industries producing for direct consumption, and to that extent has a harmful effect, but it wipes the slate clean and does not accumulate any explosive materials. That is done by another method of holding prices, namely storing up goods. This requires large capital resources, which are usually obtained through a sharp tightening of credit, bringing with it the danger of an acute and violent collapse. It is by no means certain that the cartels will not choose this path; on the contrary, it has been observed to happen. It is true that the cartels' leaders will generally incline more towards production cuts, but they may be forced into stockpiling if the cartel's cohesion is weak and its continued existence in doubt.

The centralisation of banking already seems to me more effective. The central banks' importance in the prevention of panics has been proven in countless instances and is generally acknowledged. The big investment banks now have a similar effect, and in addition are able to prevent the emergence of overspeculation and excessive new industrial production facilities and extensions to a considerable degree. The influence of the big institutions on the establishment of new enterprises gives them the power to call a halt, and since their leaders have a loftier vantage point and are more familiar with the general state of the economy than the individual industrialists, they would also seem better able to find the right moment and the correct balance. If the investment banks are allocated this mission as regulators of the establishment and extension of production facilities, then they must be enabled to perform it and not made virtually dependent

on company promotion business by depriving them of the right to accept deposits and thus to conduct ordinary banking business. The cultivation of ordinary banking business is the best means of making banks' earnings independent of flotations and enabling them to take account of national economic interests in connection with the latter. Although I cannot discuss this difficult question any further here, I would like to briefly point out a fundamental point regarding the significance of the cartels and the central banks, namely that whereas the national economic interest coincides with the well-understood private economic interests of the banks, it is at least questionable whether the same holds true in every respect of the cartels.

It is true that crises will be unavoidable for the foreseeable future, but even a cursory glance at the history of crises shows that their character has changed considerably, and that people have already overcome some of the initial problems of the capitalist mode of production; the days of the South Sea Bubble and the enterprises launched by Law are doubtless gone for good, and it can definitely be said that with each successive crisis, naïve faith in profits, out and out fraud and the orgies of new company formation have progressively diminished. For how much longer crises continue to occur depends, aside from the development of the protective bodies just touched upon, on quite general factors. If the distribution of income were to move in the direction of an immiseration of the masses, then our future would not merely be one of overproduction, but most likely of murder and mayhem as well. If we are only at the beginning of a new age of revolutionary inventions providing a constant stream of economico-technological and psychological impetuses, then there can be no way of predicting when crises will come to an end. Those territories which have yet to be linked to West European economic culture present similar impetuses and dangers, because the linking of each new area brings with it a tendency towards exaggeration and overspeculation. If the acquisitive drive is advancing both in its extension and spread to sections of the population which have hitherto been less subject to it, as well as intensively vis-à-vis other psychological and moral factors, then the prospects for avoiding overspeculation are very slight. It is true that given our present historical stage of development with respect to all these factors, our incomplete understanding of the connections among the relevant phenomena and the small spread and depth of this knowledge among our entrepreneurs, there is no hope for the immediate future of avoiding crises and overproduction; however, we can expect that if social reform progresses and the lower classes receive a greater share of production yields and greater security of their standard of living, the consequences will be less serious, and that if our organisations are perfected, there is increasing adaptation to the new forms of the capitalist mode of production based on the division of labour, and the major general factors we have mentioned develop favourably, then economic catastrophes will assume ever more civilised forms and finally subside into milder transitions between boom and depression, between rising and

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declining economic conditions. This course of events is not a necessary and inevitable one, but requires active collaboration and effort; it is, however, possible. The arguments we have presented are not intended to show that crises are about to come to an end, but rather that against the theories which declare the periodicity of crises and their ever more severe recurrence to be inherent in the present social system, considerations can be advanced which make the opposite tendencies probable and possible.

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