

## XX. INTEREST, CREDIT EXPANSION, AND THE TRADE CYCLE

### 1. The Problems

**I**N the market economy in which all acts of interpersonal exchange are performed by the intermediary of money, the category of originary interest manifests itself primarily in the interest on money loans.

It has been pointed out already that in the imaginary construction of the evenly rotating economy the rate of originary interest is uniform. There prevails in the whole system only one rate of interest. The rate of interest on loans coincides with the rate of originary interest as manifested in the ration between prices of present and of future goods. We may call this rate the neutral rate of interest.

The evenly rotating economy presupposes neutral money. As money can never be neutral, special problems arise.

If the money relation—i.e., the ratio between the demand for and the supply of money for cash holding—changes, all prices of goods and services are affected. These changes, however, do not affect the prices of various goods and services at the same time and to the same extent. The resulting modifications in the wealth and income of various individuals can also alter the data determining the height of originary interest. The final state of the rate of originary interest to the establishment of which the system tends after the appearance of changes in the money relation, is no longer that final state toward which it had tended before. Thus, the driving force of money has the power to bring about lasting changes in the final rate of originary interest and neutral interest.

Then there is a second, even more momentous, problem which, of course, may also be looked upon as another aspect of the same problem. Changes in the money relation may under certain circumstances first affect the loan market rate of interest on loans, which we may call the gross money (or market) rate of interest. Can such changes in the gross money rate cause the net rate of interest included in it to deviate lastingly from the height which

corresponds to the rate of ordinary interest, i.e., the difference between the valuation of present and future goods? Can events on the loan market partially or totally eliminate ordinary interest? No economist will hesitate to answer these questions in the negative. But then a further problem arises: How does the interplay of the market factors readjust the gross money rate to the height conditioned by the rate of ordinary interest?

These are great problems. These were the problems economists tried to solve in discussing banking, fiduciary media and circulation credit, credit expansion, gratuitousness or nongratuitousness of credit, the cyclical movements of trade, and all other problems of indirect exchange.

## 2. The Entrepreneurial Component in the Gross Market Rate of Interest

The market rates of interest on loans are not pure interest rates. Among the components contributing to their determination there are also elements which are not interest. The moneylender is always an entrepreneur. Every grant of credit is a speculative entrepreneurial venture, the success or failure of which is uncertain. The lender is always faced with the possibility that he may lose a part or the whole of the principal lent. His appraisal of this danger determines his conduct in bargaining with the prospective debtor about the terms of the contract.

There can never be perfect safety either in moneylending or in other classes of credit transactions and deferred payments. Debtors, guarantors, and warrantors may become insolvent; collateral and mortgages may become worthless. The creditor is always a virtual partner of the debtor or a virtual owner of the pledged and mortgaged property. He can be affected by changes in the market data concerning them. He has linked his fate with that of the debtor or with the changes occurring in the price of the collateral. Capital as such does not bear interest; it must be well employed and invested not only in order to yield interest, but also lest it disappear entirely. The dictum *pecunia pecuniam parere non potest* (money cannot beget money) is meaningful in this sense, which, of course, differs radically from the sense which ancient and medieval philosophers attached to it. Gross interest can be reaped only by creditors who have been successful in their lending. If they earn any net interest at all, it is included in a yield which contains more than merely net interest. Net interest is a magnitude which only analytical thinking can extract from the gross proceeds of the creditor.

The entrepreneurial component included in the creditor's gross proceeds is determined by all those factors which are operative in every entrepreneurial venture. It is, moreover, codetermined by the legal and institutional setting. The contracts which place the debtor and his fortune or the collateral as a buffer between the creditor and the disastrous consequences of malinvestment of the capital lent, are conditioned by laws and institutions. The creditor is less exposed to loss and failure than the debtor only in so far as this legal and institutional framework makes it possible for him to enforce his claims against refractory debtors. There is, however, no need for economics to enter into a detailed scrutiny of the legal aspects involved in bonds and debentures, preferred stock, mortgages, and other kinds of credit transactions.

The entrepreneurial component is present in all species of loans. It is customary to distinguish between consumption or personal loans on the one hand, and productive or business loans on the other. The characteristic mark of the former class is that it enables the borrower to spend expected future proceeds. In acquiring a claim to a share in these future proceeds, the lender becomes virtually an entrepreneur, as in acquiring a claim to a share in the future proceeds of a business. The particular uncertainty of the outcome of his lending consists in the uncertainty about these future proceeds.

It is furthermore customary to distinguish between private and public loans, i.e., loans to governments and subdivisions of governments. The particular uncertainty inherent in such loans concerns the life of secular power. Empires may crumble and governments may be overthrown by revolutionaries who are not prepared to assume responsibility for the debts contracted by their predecessors. That there is, besides, something basically vicious in all kinds of long-term government debts, has been pointed out already.<sup>1</sup>

Over all species of deferred payments hangs, like the sword of Damocles, the danger of government interference. Public opinion has always been biased against creditors. It identifies creditors with the idle rich and debtors with the industrious poor. It abhors the former as ruthless exploiters and pities the latter as innocent victims of oppression. It considers government action designed to curtail the claims of the creditors as measures extremely beneficial to the immense majority at the expense of a small minority of hardboiled usurers. It did not notice at all that nineteenth-century capitalist innovations have wholly changed the composition of the classes of creditors and debtors. In the days of Solon the Athenian, of ancient Rome's agrarian

1. Cf. above, pp. 226-228.

laws, and of the Middle Ages, the creditors were by and large the rich and the debtors the poor. But in this age of bonds and debentures, mortgage banks, saving banks, life insurance policies, and social security benefits, the masses of people with more moderate income are rather themselves creditors. On the other hand, the rich, in their capacity as owners of common stock, of plants, farms, and real estate, are more often debtors than creditors. In asking for the expropriation of creditors, the masses are unwittingly attacking their own particular interests.

With public opinion in this state, the creditor's unfavorable chance of being harmed by anticreditor measures is not balanced by a favorable chance of being privileged by antidebtor measures. This unbalance would bring about a unilateral tendency toward a rise of the entrepreneurial component contained in the gross rate of interest if the political danger were limited to the loan market, and would not in the same way affect today all kinds of private ownership of the means of production. As things are in our day, no kind of investment is safe against the political dangers of anticapitalistic measures. A capitalist cannot reduce the vulnerability of his wealth by preferring direct investment in business to lending his capital to business or to the government.

The political risks involved in moneylending do not affect the height of ordinary interest; they affect the entrepreneurial component included in the gross market rate. In the extreme case—i.e., in a situation in which the impending nullification of all contracts concerning deferred payments is expected—they would cause the entrepreneurial component to increase beyond all measure.<sup>2</sup>

### 3. The Price Premium as a Component of the Gross Market Rate of Interest

Money is neutral if the cash-induced changes in the monetary unit's purchasing power affect at the same time and to the same extent the prices of all commodities and services. With neutral money, a neutral rate of interest would be conceivable, provided there were no deferred payments. If there are deferred payments and if we disregard the entrepreneurial position of the creditor and the ensuing entrepreneurial component in the gross rate of interest, we must furthermore assume that the eventuality of future changes in purchasing

2. The difference between this case (case *b*) and the case of the expected end of all earthly things dealt with on p. 527 (case *a*) is this: in case *a*, ordinary interest increases beyond all measure because future goods become entirely worthless; in case *b*, ordinary interest does not change while the entrepreneurial component increases beyond all measure.

power is taken into account in stipulating the terms of the contract. The principal is to be multiplied periodically by the index number and thus to be increased or decreased in accordance with the changes that have come to pass in purchasing power. With the adjustment of the principal, the amount from which the rate of interest is to be calculated changes too. Thus, this rate is a neutral rate of interest.

With neutral money, neutralization of the rate of interest could also be attained by another stipulation, provided the parties are in a position to anticipate correctly the future changes in purchasing power. They could stipulate a gross rate of interest containing an allowance for such changes, a percentile addendum to, or subtrahendum from, the rate of ordinary interest. We may call this allowance the—positive or negative— price premium. In the case of a quickly progressing deflation, the negative price premium could not only swallow the whole rate of ordinary interest, but even reverse the gross rate into a minus quantity, an amount charged to the creditor's account. If the price premium is correctly calculated, neither the creditor's nor the debtor's position is affected by intervening changes in purchasing power. The rate of interest is neutral.

However, all these assumptions are not only imaginary, they cannot even hypothetically be thought of without contradiction. In the changing economy, the rate of interest can never be neutral. In the changing economy, there is no uniform rate of ordinary interest; there only prevails a tendency toward the establishment of such uniformity. Before the final state of ordinary interest is attained, new changes in the data emerge which divert anew the movement of interest rates toward a new final state. Where everything is unceasingly in flux, no neutral rate of interest can be established.

In the world of reality all prices are fluctuating and acting men are forced to take full account of these changes. Entrepreneurs embark upon business ventures and capitalists change their investments only because they anticipate such changes and want to profit from them. The market economy is essentially characterized as a social system in which there prevails an incessant urge toward improvement. The most provident and enterprising individuals are driven to earn profit by readjusting again and again the arrangement of production activities so as to fill in the best possible way the needs of the consumers, both those needs of which the consumers themselves are already aware and those latent needs of the satisfaction of which they have not yet thought themselves. These speculative ventures of the promoters revolutionize afresh each day the structure of prices and thereby also the height of the gross market rate of interest.

He who expects a rise in certain prices enters the loan market as a borrower and is ready to allow a higher gross rate of interest than he would allow if he were to expect a less momentous rise in prices or no rise at all. On the other hand, the lender, if he himself expects a rise in prices, grants loans only if the gross rate is higher than it would be under a state of the market in which less momentous or no upward changes in prices are anticipated. The borrower is not deterred by a higher rate if his project seems to offer such good chances that it can afford higher costs. The lender would abstain from lending and would himself enter the market as an entrepreneur and bidder for commodities and services if the gross rate of interest were not to compensate him for the profits he could reap this way. The expectation of rising prices thus has the tendency to make the gross rate of interest rise, while the expectation of dropping prices makes it drop. If the expected changes in the price structure concern only a limited group of commodities and services, and are counterbalanced by the expectation of an opposite change in the prices of other goods, as is the case in the absence of changes in the money relation, the two opposite trends by and large counterpoise each other. But if the money relation is sensibly altered and a general rise or fall in prices of all commodities and services is expected, one tendency carries on. A positive or negative price premium emerges in all deals concerning deferred payments.<sup>3</sup>

The role of the price premium in the changing economy is different from that we ascribed to it in the hypothetical and unrealizable scheme developed above. It can never entirely remove, even as far as credit operations alone are concerned, the effects of changes in the money relation; it can never make interest rates neutral. It cannot alter the fact that money is essentially equipped with a driving force of its own. Even if all factors were to know correctly and completely the quantitative data concerning the changes in the supply of money (in the broader sense) in the whole economic system, the dates on which such changes were to occur and what individuals were to be first affected by them, they would not be in a position to know beforehand whether and to what extent the demand for money for cash holding would change and in what temporal sequence and to what extent the prices of the various commodities would change. The price premium could counterpoise the effects of changes in the money relation upon the substantial importance and the economic significance of credit contracts only if its appearance were to precede the occurrence of the price changes generated by the alteration

3. Cf. Irving Fisher, *The Rate of Interest* (New York, 1907), pp. 77 ff.

in the money relation. It would have to be the result of a reasoning by virtue of which the actors try to compute in advance the date and the extent of such price changes with regard to all commodities and services which directly or indirectly count for their own state of satisfaction. However, such computations cannot be established because their performance would require a perfect knowledge of future conditions and valuations.

The emergence of the price premium is not the product of an arithmetical operation which could provide reliable knowledge and eliminate the uncertainty concerning the future. It is the outcome of the promoters' understanding of the future and their calculations based on such an understanding. It comes into existence step by step as soon as first a few and then successively more and more actors become aware of the fact that the market is faced with cash-induced changes in the money relation and consequently with a trend orientated in a definite direction. Only when people begin to buy or to sell in order to take advantage of this trend, does the price premium come into existence.

It is necessary to realize that the price premium is the outgrowth of speculations anticipating changes in the money relation. What induces it, in the case of the expectation that an inflationary trend will keep on going, is already the first sign of that phenomenon which later, when it becomes general, is called "flight into real values" and finally produces the crack-up boom and the crash of the monetary system concerned. As in every case of the understanding of future developments, it is possible that the speculators may err, that the inflationary or deflationary movement will be stopped or slowed down, and that prices will differ from what they expected.

The increased propensity to buy or sell, which generates the price premium, affects as a rule short-term loans sooner and to a greater extent than long-term loans. As far as this is the case, the price premium affects the market for short-term loans first, and only later, by virtue of the concatenation of all parts of the market, also the market for long-term loans. However, there are instances in which a price premium in long-term loans appears independently of what is going on with regard to short-term loans. This was especially the case in international lending in the days in which there was still a live international capital market. It happened occasionally that lenders were confident with regard to the short-term development of a foreign country's national currency; in short-term loans stipulated in this currency there was no price premium at all or only a slight one. But the appraisal of the long-term aspects of the currency concerned was less favorable, and consequently in long-term contracts a

considerable price premium was taken into account. The result was that long-term loans stipulated in this currency could be floated only at a higher rate than the same debtor's loans stipulated in terms of gold or a foreign currency.

We have shown one reason why the price premium can at best practically deaden, but never eliminate entirely, the repercussions of cash-induced changes in the money relation upon the content of credit transactions. (A second reason will be dealt with in the next section.) The price premium always lags behind the changes in purchasing power because what generates it is not the change in the supply of money (in the broader sense), but the—necessarily later occurring—effects of these changes upon the price structure. Only in the final state of a ceaseless inflation do things become different. The panic of the currency catastrophe, the crack-up boom, is not only characterized by a tendency for prices to rise beyond all measure, but also by a rise beyond all measure of the positive price premium. No gross rate of interest, however great, appears to a prospective lender high enough to compensate for the losses expected from the progressing drop in the monetary unit's purchasing power. He abstains from lending and prefers to buy himself "real" goods. The loan market comes to a standstill.

#### 4. The Loan Market

The gross rates of interest as determined on the loan market are not uniform. The entrepreneurial component which they always include varies according to the peculiar characteristics of the specific deal. It is one of the most serious shortcomings of all historical and statistical studies devoted to the movement of interest rates that they neglect this factor. It is useless to arrange data concerning interest rates of the open market or the discount rates of the central banks in time series. The various data available for the construction of such time series are incommensurable. The same central bank's rate of discount meant something different in various periods of time. The institutional conditions affecting the activities of various nations' central banks, their private banks, and their organized loan markets are so different, that it is entirely misleading to compare the nominal interest rates without paying full regard to these diversities. We know a priori that, other things being equal, the lenders are intent upon preferring high interest rates to low ones, and the debtors upon preferring low rates to high ones. But these other things are never equal. There prevails upon the loan market a tendency toward the equalization of gross interest rates for loans for which the factors

determining the height of the entrepreneurial component and the price premium are equal. This knowledge provides a mental tool for the interpretation of the facts concerning the history of interest rates. Without the aid of this knowledge, the vast historical and statistical material available would be merely an accumulation of meaningless figures. In arranging time series of the prices of certain primary commodities, empiricism has at least an apparent justification in the fact that the price data dealt with refer to the same physical object. It is a spurious excuse indeed as prices are not related to the unchanging physical properties of things, but to the changing value which acting men attach to them. But in the study of interest rates, even this lame excuse cannot be advanced. Gross interest rates as they appear in reality have nothing else in common than those characteristics which catallactic theory sees in them. They are complex phenomena and can never be used for the construction of an empirical or a posteriori theory of interest. They can neither verify nor falsify what economics teaches about the problems involved. They constitute, if carefully analyzed with all the knowledge economics conveys, invaluable documentation for economic history; they are of no avail for economic theory.

It is customary to distinguish the market for short-term loans (money market) from the market for long-term loans (capital market). A more penetrating analysis must even go further in classifying loans according to their duration. Besides, there are differences with regard to the legal characteristics which the terms of the contract assign to the lender's claim. In short, the loan market is not homogeneous. But the most conspicuous differences arise from the entrepreneurial component included in the gross rates of interest. It is this that people refer to when asserting that credit is based on trust or confidence.

The connexity between all sectors of the loan market and the gross rates of interest determined on them is brought about by the inherent tendency of the net rates of interest included in these gross rates toward the final state of originary interest. With regard to this tendency, catallactic theory is free to deal with the market rate of interest as if it were a uniform phenomenon, and to abstract from the entrepreneurial component which is necessarily always included in the gross rates and from the price premium which is occasionally included.

The prices of all commodities and services are at any instant moving toward a final state. If this final state were ever to be reached, it would show in the ratio between the prices of present goods and future goods the final

state of ordinary interest. however, the changing economy never reaches the imaginary final state. new data emerge again and again and divert the trend of prices from the previous goal of their movement toward a different final state to which a different rate of ordinary interest may correspond. In the rate of ordinary interest there is no more permanence than in prices and wage rates.

Those people whose provident action is intent upon adjusting the employment of the factors of production to the changes occurring in the data—viz., the entrepreneurs and promoters—base their calculations upon the prices, wage rates, and interest rates as determined on the market. They discover discrepancies between the present prices of the complementary factors of production and the anticipated prices of the products minus the market rate of interest, and are eager to profit from them. The role which the rate of interest plays in these deliberations of the planning businessman is obvious. It shows him how far he can go in withholding factors of production from employment for want-satisfaction in nearer periods of the future and in dedicating them to want-satisfaction in remoter periods. It shows him what period of production conforms in every concrete case to the difference which the public makes in the ratio of valuation between present goods and future goods. It prevents him from embarking upon projects the execution of which would not agree with the limited amount of capital goods provided by the saving of the public.

It is in influencing this primordial function of the rate of interest that the driving force of money can become operative in a particular way. Cash-induced changes in the money relation can under certain circumstances affect the loan market before they affect the prices of commodities and of labor. The increase or decrease in the supply of money (in the broader sense) can increase or decrease the supply of money offered on the loan market and thereby lower or raise the gross market rate of interest although no change in the rate of ordinary interest has taken place. If this happens, the market rate deviates from the height which the state of ordinary interest and the supply of capital goods available for production would require. Then the market rate of interest fails to fulfill the function it plays in guiding entrepreneurial decisions. It frustrates the entrepreneur's calculation and diverts his actions from those lines in which they would in the best possible way satisfy the most urgent needs of the consumers.

Then there is a second important fact to realize. If, other things being equal, the supply of money (in the broader sense) increases or decreases and

thus brings about a general tendency for prices to rise or to drop, a positive or negative price premium would have to appear and to raise or lower the gross rate of market interest. But if such changes in the money relation affect first the loan market, they bring about just the opposite changes in the configuration of the gross market rates of interest. While a positive or negative price premium would be required to adjust the market rates of interest to the changes in the money relation, gross interest rates are in fact dropping or rising. This is the second reason why the instrumentality of the price premium cannot entirely eliminate the repercussions of cash-induced changes in the money relation upon the content of contracts concerning deferred payments. Its operation begins too late, it lags behind the changes in purchasing power, as has been shown above. Now we see that under certain circumstances the forces that push in the opposite direction manifest themselves sooner on the market than an adequate price premium.

### 5. The Effects of Changes in the Money Relation Upon Ordinary Interest

Like every change in the market data, changes in the money relation can possibly influence the rate of ordinary interest. According to the advocates of the inflationist view of history, inflation by and large tends to increase the earnings of the entrepreneurs. They reason this way: Commodity prices rise sooner and to a steeper level than wage rates. On the one hand, wage earners and salaried people, classes who spend the greater part of their income for consumption and save little, are adversely affected and must accordingly restrict their expenditures. On the other hand, the proprietary strata of the population, whose propensity to save a considerable part of their income is much greater, are favored; they do not increase their consumption in proportion, but also increase their savings. Thus in the community as a whole there arises a tendency toward an intensified accumulation of new capital. Additional investment is the corollary of the restriction of consumption imposed upon that part of the population which consumes the much greater part of the annual produce of the economic system. This *forced saving* lowers the rate of ordinary interest. It accelerates the pace of economic progress and the improvement in technological methods.

It is true that such forced saving can originate from an inflationary movement and occasionally did originate in the past. In dealing with the effects of changes in the money relation upon the height of interest rates, one must not neglect

the fact that such changes can under certain circumstances really alter the rate of ordinary interest. But several other facts must be taken into account, too.

First one must realize that forced saving can result from inflation, but need not necessarily. It depends on the particular data of each instance of inflation whether or not the rise in wage rates lags behind the rise in commodity prices. A tendency for real wage rates to drop is not an inescapable consequence of a decline in the monetary unit's purchasing power. It could happen that nominal wage rates rise more or sooner than commodity prices.<sup>4</sup>

Furthermore, it is necessary to remember that the greater propensity of the wealthier classes to save and to accumulate capital is merely a psychological and not a praxeological fact. It could happen that these people to whom the inflationary movement conveys additional proceeds do not save and invest their boon but employ it for an increase in their consumption. It is impossible to predict with the apodictic definiteness which characterizes all theorems of economics, in what way those profiting from the inflation will act. History can tell us what happened in the past. But it cannot assert that it must happen again in the future.

It would be a serious blunder to neglect the fact that inflation also generates forces which tend toward capital consumption. One of its consequences is that it falsifies economic calculation and accounting. It produces the phenomenon of illusory or apparent profits. If the annual depreciation quotas are determined in such a way as not to pay full regard to the fact that the replacement of worn-out equipment will require higher costs than the amount for which it was purchased in the past, they are obviously insufficient. If in selling inventories and products the whole difference between the price spent for their acquisition and the price realized in the sale is entered in the books as a surplus, the error is the same. If the rise in the prices of stocks and real estate is considered as a gain, the illusion is no less manifest. What makes people believe that inflation results in general prosperity is precisely such illusory gains. They feel lucky and become openhanded in spending and enjoying life. They embellish their homes, they build new mansions and patronize the entertainment business. In spending apparent gains, the fanciful result of false reckoning, they are consuming capital. It does not matter who these spenders are. They may be businessmen or stock jobbers. They may be wage earners whose demand for higher pay is satisfied by the easygoing employers who think that they are getting richer from day

4. We are dealing here with conditions on an unhampered labor market. About the argument advanced by Lord Keynes, see below, pp. 777 and 792-793.

to day. They may be people supported by taxes which usually absorb a great part of the apparent gains.

Finally, with the progress of inflation more and more people become aware of the fall in purchasing power. For those not personally engaged in business and not familiar with the conditions of the stock market, the main vehicle of saving is the accumulation of savings deposits, the purchase of bonds and life insurance. All such savings are prejudiced by inflation. Thus saving is discouraged and extravagance seems to be indicated. The ultimate reaction of the public, the "flight into real values," is a desperate attempt to salvage some debris from the ruinous breakdown. It is, viewed from the angle of capital preservation, not a remedy, but merely a poor emergency measure. It can, at best, rescue a fraction of the saver's funds.

The main thesis of the champions of inflationism and expansionism is thus rather weak. It may be admitted that in the past inflation sometimes, but not always, resulted in forced saving and an increase in capital available. However, this does not mean that it must produce the same effects in the future too. On the contrary, one must realize that under modern conditions the forces driving toward capital consumption are more likely to prevail under inflationary conditions than those driving toward capital accumulation. At any rate, the final effect of such changes upon saving, capital, and the ordinary rate of interest depends upon the particular data of each instance.

The same is valid, with the necessary changes, with regard to the analogous consequences and effects of a deflationist or restrictionist movement.

## 6. The Gross Market Rate of Interest as Affected by Inflation and Credit Expansion

Whatever the ultimate effects of an inflationary or deflationary movement upon the height of the rate of ordinary interest may be, there is no correspondence between them and the temporary alterations which a cash-induced change in the money relation can bring about in the gross market rate of interest. If the inflow of money and money-substitutes into the market system or the outflow from it affects the loan market first, it temporarily disarranges the congruity between the gross market rates of interest and the rate of ordinary interest. The market rate rises or drops on account of the decrease or increase in the amount of money offered for lending, with no correlation to changes in the ordinary rate of interest which in the later course of events can possibly occur from the changes in the money relation. The market rate deviates from the height

determined by that of the ordinary rate of interest, and forces come into operation which tend to adjust it anew to the ratio which corresponds to that of ordinary interest. It may happen that in the period of time which this adjustment requires, the height of ordinary interest varies, and this change can also be caused by the inflationary or deflationary process which brought about the deviation. Then the final rate of ordinary interest determining the final market rate toward which the readjustment tends is not the same rate which prevailed on the eve of the disarrangement. such an occurrence may affect the data of the process of adjustment, but it does not affect its essence.

The phenomenon to be dealt with is this: The rate of ordinary interest is determined by the discount of future goods as against present goods. It is essentially independent of the supply of money and money-substitutes, notwithstanding the fact that changes in the supply of money and money[substitutes can indirectly affect its height. But the gross market rate of interest can be affected by changes in the money relation. A readjustment must take place. What is the nature of the process which brings it about?

In this section we are concerned only with inflation and credit expansion. For the sake of simplicity we assume that the whole additional amount of money and money-substitutes flows into the loan market and reaches the rest of the market only via the loans granted. This corresponds precisely to the conditions of an expansion of circulation credit.<sup>5</sup> Our scrutiny thus amounts to an analysis of the process caused by credit expansion.

In dealing with this analysis, we must refer again to the price premium. It has been mentioned already that at the very beginning of a credit expansion no positive price premium arises. a price premium cannot appear until the additional supply of money (in the broader sense) has already begun to affect the prices of commodities and services. but as long as credit expansion goes on and additional quantities of fiduciary media are hurled on the loan market, there continues a pressure upon the gross market rate of interest. The gross market rate would have to rise on account of the positive price premium which, with the progress of the expansionist process, would have to rise continually. but as credit expansion goes on, the gross market rate continues to lag behind the height at which it would cover both ordinary interest plus the positive price premium.

It is necessary to stress this point because it explodes the customary methods according to which people distinguish between what they consider low and high rates of interest. It is usual to take into account merely the

5. About the "long-wave" fluctuations, see below, p. 575.

arithmetical height of the rates or the trend which appears in their movement. Public opinion has definite ideas about a "normal" rate, something between 3 and 5 per cent. When the market rate rises above this height or when the market rates—without regard to their arithmetical ratio—are rising above their previous height, people believe that they are right in speaking of high or rising interest rates. As against these errors, it is necessary to emphasize that under the conditions of a general rise in prices (drop in the monetary unit's purchasing power) the gross market rate of interest can be considered as unchanged with regard to conditions of a period of a by and large unchanging purchasing power only if it includes a by and large adequate positive price premium. In this sense, the German Reichsbank's discount rate of 90 per cent was, in the fall of 1923, a low rate—indeed a ridiculously low rate—as it considerably lagged behind the price premium and did not leave anything for the other components of the gross market rate of interest. Essentially the same phenomenon manifests itself in every instance of a prolonged credit expansion. Gross market rates of interest rise in the further course of every expansion, but they are nonetheless low as they do not correspond to the height required by the expected further general rise in prices.

In analyzing the process of credit expansion, let us assume that the economic system's process of adjustment to the market data and of movement toward the establishment of final prices and interest rates is disturbed by the appearance of a new datum, namely, an additional quantity of fiduciary media offered on the loan market. At the gross market rate which prevailed on the eve of this disturbance, all those who were ready to borrow money at this rate, due allowance being made for the entrepreneurial component in each case, could borrow as much as they wanted. Additional loans can be placed only at a lower gross market rate. It does not matter whether this drop in the gross market rate expresses itself in an arithmetical drop in the percentage stipulated in the loan contracts. It could happen that the nominal interest rates remain unchanged and that the expansion manifests itself in the fact that at these rates loans are negotiated which would not have been made before on account of the height of the entrepreneurial component to be included. Such an outcome too amounts to a drop in gross market rates and brings about the same consequences.

A drop in the gross market rate of interest affects the entrepreneur's calculation concerning the chances of the profitability of projects considered. Along with the prices of the material factors of production, wage rates,

and the anticipated future prices of the products, interest rates are items that enter into the planning businessman's calculation. The result of this calculation shows the businessman whether or not a definite project will pay. It shows him what investments can be made under the given state of the ratio in the public's valuation of future goods as against present goods. It brings his actions into agreement with this valuation. It prevents him from embarking upon projects the realization of which would be disapproved by the public because of the length of the waiting time they require. It forces him to employ the available stock of capital goods in such a way as to satisfy best the most urgent wants of the consumers.

But now the drop in interest rates falsifies the businessman's calculation. although the amount of capital goods available did not increase, the calculation employs figures which would be utilizable only if such an increase had taken place. The result of such calculations is therefore misleading. They make some projects appear profitable and realizable which a correct calculation, based on an interest rate not manipulated by credit expansion, would have shown as unrealizable. Entrepreneurs embark upon the execution of such projects. Business activities are stimulated. A boom begins.

The additional demand on the part of the expanding entrepreneurs tends to raise the prices of producers' goods and wage rates. With the rise in wage rates, the prices of consumers' goods rise too. Besides, the entrepreneurs are contributing a share to the rise in the prices of consumers' goods as they too, deluded by the illusory gains which their business accounts show, are ready to consume more. The general upswing in prices spreads optimism. If only the prices of producers' goods had risen and those of consumers' goods had not been affected, the entrepreneurs would have become embarrassed. They would have had doubts concerning the soundness of their plans, as the rise in costs of production would have upset their calculations. But they are reassured by the fact that the demand for consumers' goods is intensified and makes it possible to expand sales in spite of rising prices. Thus they are confident that production will pay, notwithstanding the higher costs it involves. They are resolved to go on.

Of course, in order to continue production on the enlarged scale brought about by the expansion of credit, all entrepreneurs, those who did expand their activities no less than those who produce only within the limits in which they produced previously, need additional funds as the costs of production are now higher. If the credit expansion consists merely in a single, not repeated injection of a definite amount of fiduciary media into the loan

market and then ceases altogether, the boom must very soon stop. The entrepreneurs cannot procure the funds they need for the further conduct of their ventures. This gross market rate of interest rises because the increased demand for loans is not counterpoised by a corresponding increase in the quantity of money available for lending. Commodity prices drop because some entrepreneurs are selling inventories and others abstain from buying. The size of business activities shrinks again. The boom ends because the forces which brought it about are no longer in operation. The additional quantity of circulation credit has exhausted its operation upon prices and wage rates. Prices, wage rates, and the various individuals' cash holdings are adjusted to the new money relation; they move toward the final state which corresponds to this money relation, without being disturbed by further injections of additional fiduciary media. The rate of ordinary interest which is coordinated to this new structure of the market acts with full momentum upon the gross market rate of interest. The gross market rate is no longer subject to disturbing influences exercised by cash-induced changes in the supply of money (in the broader sense).

The main deficiency of all attempts to explain the boom—viz., the general tendency to expand production and of all prices to rise—without reference to changes in the supply of money or fiduciary media, is to be seen in the fact that they disregard this circumstance. A general rise in prices can only occur if there is either a drop in the supply of *all* commodities or an increase in the supply of money (in the broader sense). Let us, for the sake of argument, admit for the moment that the statements of these nonmonetary explanations of the boom and the trade cycle are correct. Prices advance and business activities expand although no increase in the supply of money has occurred. Then very soon a tendency toward a drop in prices must arise, the demand for loans must increase, the gross market rates of interest must rise, and the short-lived boom comes to an end. In fact, every nonmonetary trade-cycle doctrine tacitly assumes—or ought logically to assume—that credit expansion is an attendant phenomenon of the boom.<sup>6</sup> It cannot help admitting that in the absence of such a credit expansion no boom could emerge and that the increase in the supply of money (in the broader sense) is a necessary condition of the general upward movement of prices. Thus on close inspection the statements of the nonmonetary explanations of cyclical fluctuations shrink to the assertion that credit expansion, while an indispensable

6. Cf. G.v. Haberler, *Prosperity and Depression* (new ed. League of Nations' Report, Geneva, 1939), p. 7.

requisite of the boom, is in itself alone not sufficient to bring it about and that some further conditions are required for its appearance.

Yet, even in this restricted sense, the teachings of the nonmonetary doctrines are vain. It is evident that every expansion of credit must bring about the boom as described above. The boom-creating tendency of credit expansion can fail to come only if another factor simultaneously counterbalances its growth. If, for instance, while the banks expand credit, it is expected that the government will completely tax away the businessmen's "excess" profits or that it will stop the further progress of credit expansion as soon as "pump-priming" will have resulted in rising prices, no boom can develop. The entrepreneurs will abstain from expanding their ventures with the aid of the cheap credits offered by the banks because they cannot expect to increase their gains. It is necessary to mention this fact because it explains the failure of the New Deal's pump-priming measures and other events of the 'thirties.

The boom can last only as long as the credit expansion progresses at an ever-accelerated pace. The boom comes to an end as soon as additional quantities of fiduciary media are no longer thrown upon the loan market. But it could not last forever even if inflation and credit expansion were to go on endlessly. It would then encounter the barriers which prevent the boundless expansion of circulation credit. It would lead to the crack-up boom and the breakdown of the whole monetary system.

The essence of monetary theory is the cognition that cash-induced changes in the money relation affect the various prices, wage rates, and interest rates neither at the same time nor to the same extent. If this unevenness were absent, money would be neutral; changes in the money relation would not affect the structure of business, the size and direction of production in the various branches of industry, consumption, and the wealth and income of the various strata of the population. Then the gross market rate of interest too would not be affected—either temporarily or lastingly—by changes in the sphere of money and circulation credit. The fact that such changes can modify the rate of ordinary interest is caused by the changes which this unevenness brings about in the wealth and income of various individuals. The fact that, apart from these changes in the rate of ordinary interest, the gross market rate is temporarily affected is in itself a manifestation of this unevenness. If the additional quantity of money enters the economic system in such a way as to reach the loan market only at a date at which it has already made commodity prices and wage rates rise, these

immediate temporary effects upon the gross market rate of interest will be either slight or entirely absent. The gross market rate of interest is the more violently affected, the sooner the inflowing additional supply of money or fiduciary media reaches the loan market.

When under the conditions of credit expansion the whole amount of the additional money substitutes is lent to business, production is expanded. The entrepreneurs embark either upon lateral expansion of production (viz., the expansion of production without lengthening the period of production in the individual industry) or upon longitudinal expansion (viz., the lengthening of the period of production). In either case, the additional plants require the investment of additional factors of production. But the amount of capital goods available for investment has not increased. Neither does credit expansion bring about a tendency toward a restriction of consumption. It is true, as has been pointed out above in dealing with forced saving, that in the further progress of the expansion a part of the population will be compelled to restrict its consumption. But it depends on the particular conditions of each instance of credit expansion whether this forced saving of some groups of the people will overcompensate the increase in consumption on the part of other groups and will thus result in a net increase in the total amount of saving in the whole market system. At any rate, the immediate consequence of credit expansion is a rise in consumption on the part of those wage earners whose wages have risen on account of the intensified demand for labor displayed by the expanding entrepreneurs. Let us for the sake of argument assume that the increased consumption of these wage earners favored by the inflation and the forced saving of other groups prejudiced by the inflation are equal in amount and that no change in the total amount of consumption has occurred. Then the situation is this: Production has been altered in such a way that the length of waiting time has been extended. But the demand for consumers' goods has not dropped so as to make the available supply last for a longer period. Of course, this fact results in a rise in the prices of consumers' goods and thus brings about the tendency toward forced saving. However, this rise in the prices of consumers' goods strengthens the tendency of business to expand. The entrepreneurs draw from the fact that demand and prices are rising the inference that it will pay to invest and to produce more. They go on and their intensified activities bring about a further rise in the prices of producers' goods, in wage rates, and thereby again in the prices of consumers' goods. Business booms as long as the banks are expanding credit more and more.

On the eve of the credit expansion all those production processes were in operation which, under the given state of the market data, were deemed profitable. The system was moving toward a state in which all those eager to earn wages would be employed and all nonconvertible factors of production would be employed to the extent that the demand of the consumers and the available supply of nonspecific material factors and of labor would permit. A further expansion of production is possible only if the amount of capital goods is increased by additional saving, i.e., by surpluses produced and not consumed. The characteristic mark of the credit-expansion boom is that such additional capital goods have not been made available. The capital goods required for the expansion of business activities must be withdrawn from other lines of production.

We may call  $p$  the total supply of capital goods available on the eve of the credit expansion, and  $g$  the total amount of consumers' goods which these  $p$  could, over a definite period of time, make available for consumption without prejudice to further production. Now the entrepreneurs, enticed by credit expansion, embark upon the production of an additional quantity of  $g^3$  of goods of the same kind which they already used to produce, and of a quantity of  $g^4$  of goods of a kind not produced by them before. For the production of  $g^3$  a supply of  $p^3$  of capital goods is needed, and for the production of  $g^4$  a supply of  $p^4$ . But as, according to our assumptions, the amount of capital goods available has remained unaltered, the quantities  $p^3$  and  $p^4$  are lacking. It is precisely this fact that distinguishes the "artificial" boom created by credit expansion from a "normal" expansion of production which only the addition of  $p^3$  and  $p^4$  to  $p$  can bring about.

Let us call  $r$  that amount of capital goods which, out of the gross proceeds of production over a definite period of time, must be reinvested for the replacement of those parts of  $p$  used up in the process of production. If  $r$  is employed for such replacement, one will be in a position to turn out  $g$  again in the following period of time; if  $r$  is withheld from this employment,  $p$  will be reduced by  $r$ , and  $p - r$  will turn out in the following period of time only  $g - a$ . We may further assume that the economic system affected by credit expansion is a progressing system. It produced "normally," as it were, in the period of time preceding the credit expansion a surplus of capital goods  $p_1 + p_2$ . If no credit expansion had intervened,  $p_1$  would have been employed for the production of an additional quantity of  $g_1$  of the kind of goods produced previously, and  $p_2$  for the production of the supply of  $g_2$  of a kind of goods not produced before. The total amount of capital goods which are

at the entrepreneurs' disposal and with regard to which they are free to make plans is  $r + p1 + p2$ . However, deluded by the cheap money, they act as if  $r + p1 + p2 + p3 + p4$  were available and as if they were in a position to produce not only  $g + g1 + g2$ , but beyond this also  $g3 + g4$ . They outbid one another in competing for a share of a supply of capital goods which is insufficient for the realization of their overambitious plans.

The ensuing boom in the prices of producers' goods may at the beginning outrun the rise in the prices of consumer's goods. It may thus bring about a tendency toward a fall in the originary rate of interest. But with further progress of the expansionist movement the rise in the prices of the consumers' goods will outstrip the rise in the prices of producers' goods. The rise in wages and salaries and the additional gains of the capitalists, entrepreneurs, and farmers, although a great part of them is merely apparent, intensify the demand for consumers' goods. There is no need to enter into a scouting of the assertion of the advocates of credit expansion that the boom can, by means of forced saving, really increase the total supply of consumers' goods. At any rate, it is certain that the intensified demand for consumers' goods affects the market at a time when the additional investments are not yet in a position to turn out their products. The gulf between the prices of present goods and those of future goods widens again. A tendency toward a rise in the rate of originary interest is substituted for the tendency toward the opposite which may have come into operation at the earlier stages of the expansion.

This tendency toward a rise in the rate of originary interest and the emergence of a positive price premium explain some characteristics of the boom. The banks are faced with an increased demand for loans and advances on the part of business. The entrepreneurs are prepared to borrow money at higher gross rates of interest. They go on borrowing in spite of the fact that banks charge more interest. Arithmetically, the gross rates of interest are rising above their height on the eve of the expansion. Nonetheless, they lag catallactically behind the height at which they would cover originary interest plus entrepreneurial component and price premium. The banks believe that they have done all that is needed to stop "unsound" speculation when they lend on more onerous terms. They think that those critics who blame them for fanning the flames of the boom-frenzy of the market are wrong. They fail to see that in injecting more and more fiduciary media into the market they are in fact kindling the boom. It is the continuous increase in the supply of the fiduciary media that produces, feeds, and accelerates the boom. The state of the gross market rates

of interest is only an outgrowth of this increase. If one wants to know whether or not there is credit expansion, one must look at the state of the supply of fiduciary media, not at the arithmetical state of interest rates.

It is customary to describe the boom as overinvestment. However, additional investment is only possible to the extent that there is an additional supply of capital goods available. As, apart from forced saving, the boom itself does not result in a restriction but rather in an increase in consumption, it does not procure more capital goods for new investment. The essence of the credit-expansion boom is not overinvestment, but investment in wrong lines, i.e., malinvestment. The entrepreneurs employ the available supply of  $r + p1 + p2$  as if they were in a position to employ a supply of  $r + p1 + p2 + p3 + p4$ . They embark upon an expansion of investment on a scale for which the capital goods available do not suffice. Their projects are unrealizable on account of the insufficient supply of capital goods. They must fail sooner or later. The unavoidable end of the credit expansion makes the faults committed visible. There are plants which cannot be utilized because the plants needed for the production of the complementary factories of production are lacking; plants the products of which cannot be sold because the consumers are more intent upon purchasing other goods which, however, are not produced in sufficient quantities; plants the construction of which cannot be continued and finished because it has become obvious that they will not pay.

The erroneous belief that the essential feature of the boom is overinvestment and not malinvestment is due to the habit of judging conditions merely according to what is perceptible and tangible. The observer notices only the malinvestments which are visible and fails to recognize that these establishments are malinvestments only because of the fact that other plants—those required for the production of the complementary factors of production and those required for the production of consumers' goods more urgently demanded by the public—are lacking. Technological conditions make it necessary to start an expansion of production by expanding first the size of the plants producing the goods of those orders which are farthest removed from the finished consumers' goods. In order to expand the production of shoes, clothes, motorcars, furniture, houses, one must begin with increasing the production of iron, steel, copper, and other such goods. In employing the supply of  $r + p1 + p2$  which would suffice for the production of  $a + g1 + g2$  as if it were  $r + p1 + p2 + p3 + p4$  and would suffice for the production of  $a + g1 + g2 + g3 + g4$ , one must first engage in increasing the output of

those products and structures which for physical reasons are first required. The whole entrepreneurial class is, as it were, in the position of a master-builder whose task it is to erect a building out of a limited supply of building materials. If this man overestimates the quantity of the available supply, he drafts a plan for the execution of which the means at his disposal are not sufficient. He oversizes the groundwork and the foundations and only discovers later in the progress of the construction that he lacks the material needed for the completion of the structure. It is obvious that our master-builder's fault was not overinvestment, but an inappropriate employment of the means at his disposal.

It is no less erroneous to believe that the events which resulted in the crisis amounted to an undue conversion of "circulating" capital into "fixed" capital. The individual entrepreneur, when faced with the credit stringency of the crises, is right in regretting that he has expended too much for an expansion of his plant and for the purchase of durable equipment; he would have been in a better situation if the funds used for these purposes were still at his disposal for the current conduct of business. However, raw materials, primary commodities, half-finished manufactures and foodstuffs are not lacking at the turning point at which the upswing turns into the depression. On the contrary, the crisis is precisely characterized by the fact that these goods are offered in such quantities as to make their prices drop sharply.

The foregoing statements explain why an expansion in the production facilities and the production of the heavy industries, and in the production of durable producers' goods, is the most conspicuous mark of the boom. The editors of the financial and commercial chronicles were right when—for more than a hundred years—they looked upon production figures of these industries as well as of the construction trades as an index of business fluctuations. They were only mistaken in referring to an alleged overinvestment.

Of course, the boom affects also the consumers' goods industries. They too invest more and expand their production capacity. However, the new plants and the new annexes added to the already existing plants are not always those for the products of which the demand of the public is most intense. They may well have agreed with the whole plan aiming at the production of  $r + g1 + g2 + g3 + g4$ . The failure of this oversized plan discloses their inappropriateness.

A sharp rise in commodity prices is not always an attending phenomenon of the boom. The increase of the quantity of fiduciary media certainly always has the potential effect of making prices rise. But it may happen that at the

same time forces operating in the opposite direction are strong enough to keep the rise in prices within narrow limits or even to remove it entirely. The historical period in which the smooth working of the market economy was again and again interrupted through expansionist ventures was an epoch of continuous economic progress. The steady advance in the accumulation of new capital made technological improvement possible. Output per unit of input was increased and business filled the markets with increasing quantities of cheap goods. If the synchronous increase in the supply of money (in the broader sense) had been less plentiful than it really was, a tendency toward a drop in the prices of all commodities would have taken effect. As an actual historical event credit expansion was always embedded in an environment in which powerful factors were counteracting its tendency to raise prices. As a rule the resultant of the clash of opposites forces was a preponderance of those producing a rise in prices. But there were some exceptional instances too in which the upward movement of prices was only slight. The most remarkable example was provided by the American boom of 1926-29.<sup>7</sup>

The essential features of a credit expansion are not affected by such a particular constellation of the market data. What induces an entrepreneur to embark upon definite projects is neither high prices nor low prices as such, but a discrepancy between the costs of production, inclusive of interest on the capital required, and the anticipated prices of the products. A lowering of the gross market rate of interest as brought about by credit expansion always has the effect of making some projects appear profitable which did not appear so before. It actuates business to employ  $r + p1 + p2$  as if it were  $r + p1 + p2 + p3 + p4$ . It necessarily brings about a structure of investment and production activities which is at variance with the real supply of capital goods and must finally collapse. That sometimes the price changes involved are laid against a background of a general tendency toward a rise in purchasing power and do not convert this tendency into its manifest opposite but only into something which may by and large be called price stability, modifies merely some accessories of the process.

However conditions may be, it is certain that no manipulations of the banks can provide the economic system with capital goods. What is needed for a sound expansion of production is additional capital goods, not money or fiduciary media. The credit expansion boom is built on the sands of banknotes and deposits. It must collapse.

The breakdown appears as soon as the banks become frightened by the

7. Cf. M.N. Rothbard, *America's Great Depression* (Princeton, 1963).

accelerated pace of the boom and begin to abstain from further expansion of credit. The boom could continue only as long as the banks were ready to grant freely all those credits which business needed for the execution of its excessive projects, utterly disagreeing with the real state of the supply of factors of production and the valuations of the consumers. These illusory plans, suggested by the falsification of business calculation as brought about by the cheap money policy, can be pushed forward only if new credits can be obtained at gross market rates which are artificially lowered below the height they would reach at an unhampered loan market. It is this margin that gives them the deceptive appearance of profitability. The change in the banks' conduct does not create the crisis. It merely makes visible the havoc spread by the faults which business has committed in the boom period.

Neither could the boom last endlessly if the banks were to cling stubbornly to their expansionist policies. Any attempt to substitute additional fiduciary media for nonexistent capital goods (namely, the quantities  $p3$  and  $p4$ ) is doomed to failure. If the credit expansion is not stopped in time, the boom turns into the crack-up boom; the flight into real values begins, and the whole monetary system founders. However, as a rule, the banks in the past have not pushed things to extremes. They have become alarmed at a date when the final catastrophe was still far away.<sup>8</sup>

As soon as the afflux of additional fiduciary media comes to an end, the airy castle of the boom collapses. The entrepreneurs must restrict their activities because they lack the funds for their continuation on the exaggerated scale. Prices drop suddenly because these distressed firms try to obtain cash by throwing inventories on the market dirt cheap. Factories are closed, the continuation of construction projects in progress is halted, workers are discharged. As on the one hand many firms badly need money in order to avoid bankruptcy, and on the other hand no firm any longer enjoys confidence, the entrepreneurial component in the gross market rate of interest jumps to an excessive height.

8. One should not fall prey to the illusion that these changes in the credit policies of the banks were caused by the bankers' and the monetary authorities' insight into the unavoidable consequences of a continued credit expansion. What induced the turn in the banks' conduct was certain institutional conditions to be dealt with further below, on pp. 796-797. Among the champions of economics some private bankers were prominent; in particular, the elaboration of the early form of the theory of business fluctuations, the Currency Theory, was for the most part an achievement of the British bankers. But the management of the central banks and the conduct of the various governments' monetary policies was as a rule entrusted to men who did not find any fault with boundless credit expansion and took offense at every criticism of their expansionist ventures.

Accidental institutional and psychological circumstances generally turn the outbreak of the crisis into a panic. The description of these awful events can be left to the historians. It is not the task of catallactic theory to depict in detail the calamities of panicky days and weeks and to dwell upon their sometimes grotesque aspects. Economics is not interested in what is accidental and conditioned by the individual historical circumstances of each instance. Its aim is, on the contrary, to distinguish what is essential and necessary from what is merely adventitious. It is not interested in the psychological aspects of the panic, but only in the fact that a credit-expansion boom must unavoidably lead to a process which everyday speech calls the depression. It must realize that the depression is in fact the process of readjustment, of putting production activities anew in agreement with the given state of the market data: the available supply of factors of production, the valuations of the consumers, and particularly also the state of originary interest as manifested in the public's valuations.

These data, however, are no longer identical with those that prevailed on the eve of the expansionist process. A good many things have changed. Forced saving and, to an even greater extent, regular voluntary saving may have provided new capital goods which were not totally squandered through malinvestment and overconsumption as induced by the boom. Changes in the wealth and income of various individuals and groups of individuals have been brought about by the unevenness inherent in every inflationary movement. Apart from any causal relation to the credit expansion, population may have changed with regard to figures and the characteristics of the individuals comprising them; technological knowledge may have advanced, demand for certain goods may have been altered. The final state to the establishment of which the market tends is no longer the same toward which it tended before the disturbances created by the credit expansion.

Some of the investments made in the boom period appear, when appraised with the sober judgment of the readjustment period, no longer dimmed by the illusions of the upswing, as absolutely hopeless failures. They must simply be abandoned because the current means required for their further exploitation cannot be recovered in selling their products; this "circulating" capital is more urgently needed in other branches of want-satisfaction; the proof is that it can be employed in a more profitable way in other fields. Other malinvestments offer somewhat more favorable chances. It is, of course, true that one would not have embarked upon putting capital goods into them if one had correctly calculated. The inconvertible investments made on their behalf are certainly wasted. But as they are inconvertible, a *fait accompli*, they present further

action with a new problem. If the proceeds which the sale of their products promises are expected to exceed the costs of current operation, it is profitable to carry on. Although the prices which the buying public is prepared to allow for their products are not high enough to make the whole of the inconvertible investment profitable, they are sufficient to make a fraction, however small, of the investment profitable. The rest of the investment must be considered as expenditure without any offset, as capital squandered and lost.

If one looks at this outcome from the point of view of the consumers, the result is, of course, the same. The consumers would be better off if the illusions created by the easy-money policy had not enticed the entrepreneurs to waste scarce capital goods by investing them for the satisfaction of less urgent needs and thereby withholding them from lines of production in which they would have satisfied more urgent needs. but as things are now, they cannot but put up with what is irrevocable. They must for the time being renounce certain amenities which they could have enjoyed if the boom had not engendered malinvestment. but, on the other hand, they can find partial compensation in the fact that some enjoyments are now available to them which would have been beyond their reach if the smooth course of economics activities had not been disturbed by the orgies of the boom. It is slight compensation only, as their demand for those other things which they do not get because of inappropriate employment of capital goods is more intense than their demand for these "substitutes," as it were. But it is the only choice left to them as conditions and data are now.

The final outcome of the credit expansion is general impoverishment. Some people may have increased their wealth; they did not let their reasoning be obfuscated by the mass hysteria, and took advantage in time of the opportunities offered by the mobility of the individual investor. Other individuals and groups of individuals may have been favored, without any initiative of their own, by the mere time lag between the rise in the prices of the goods they sell and those they buy. But the immense majority must foot the bill for the malinvestments and the overconsumption of the boom episode.

One must guard oneself against a misinterpretation of this term impoverishment. It does not necessarily mean impoverishment when compared with the conditions that prevailed on the eve of the credit expansion. Whether or not an impoverishment in this sense takes place depends on the particular data of each case; it cannot be predicated apodictically by catallactics. What catallactics has in mind when asserting that impoverishment is an unavoidable outgrowth

of credit expansion is impoverishment as compared with the state of affairs which would have developed in the absence of credit expansion and the boom. The characteristic mark of economic history under capitalism is unceasing economic progress, a steady increase in the quantity of capital goods available, and a continuous trend toward an improvement in the general standard of living. The pace of this progress is so rapid that, in the course of a boom period, it may well outstrip the synchronous losses caused by malinvestment and overconsumption. Then the economic system as a whole is more prosperous at the end of the boom than it was at its very beginning; it appears impoverished only when compared with the potentialities which existed for a still better state of satisfaction.

*The Alleged Absence of Depressions Under Totalitarian Management*

Many socialist authors emphasize that the recurrence of economic crises and business depressions is a phenomenon inherent in the capitalist mode of production. On the other hand, they say, a socialist system is safe against this evil.

As has already become obvious and will be shown later again, the cyclical fluctuations of business are not an occurrence originating in the sphere of the unhampered market, but a product of government interference with business conditions designed to lower the rate of interest below the height at which the free market would have fixed it.<sup>9</sup> At this point we have only to deal with the alleged stability as secured by socialist planning.

It is essential to realize that what makes the economic crisis emerge is the democratic process of the market. The consumers disapprove of the employment of the factors of production as effected by the entrepreneurs. They manifest their disapprobation by their conduct in buying and abstention from buying. The entrepreneurs, misled by the illusions of the artificially lowered gross market rate of interest, have failed to invest in those lines in which the most urgent needs of the public would have been satisfied in the best possible way. As soon as the credit expansion comes to an end, these faults become manifest. The attitudes of the consumers force the businessmen to adjust their activities anew to the best possible want-satisfaction. It is this process of liquidation of the faults committed in the boom and of readjustment to the wishes of the consumers which is called the depression.

But in a socialist economy it is only the government's value judgments that count, and the people are deprived of any means of making their own value judgments prevail. A dictator does not bother about whether or not the masses approve of his decision concerning how much to devote for current

9. Cf. below, pp. 793-795.

consumption and how much for additional investment. If the dictator invests more and thus curtails the means available for current consumption, the people must eat less and hold their tongues. No crisis emerges because the subjects have no opportunity to utter their dissatisfaction. Where there is no business at all, business can be neither good nor bad. There may be starvation and famine, but no depression in the sense in which this term is used in dealing with the problems of a market economy. Where the individuals are not free to choose, they cannot protest against the methods applied by those directing the course of production activities.

### 7. The Gross Market Rate of Interest as Affected by Deflation and Credit Contraction

We assume that in the course of a deflationary process the whole amount by which the supply of money (in the broader sense) is reduced is taken from the loan market. Then the loan market and the gross market rate of interest are affected at the very beginning of the process, at a moment at which the prices of commodities and services are not yet altered by the change going on in the money relation. We may, for instance, posit that a government aiming at deflation floats a loan and destroys the paper money borrowed. Such a procedure has been, in the last two hundred years, adopted again and again. The idea was to raise, after a prolonged period of inflationary policy, the national monetary unit to its previous metallic parity. Of course, in most cases the deflationary projects were soon abandoned as their execution encountered increasing opposition and, moreover, heavily burdened the treasury. Or we may assume that the banks, frightened by their adverse experience in the crisis brought about by credit expansion, are intent upon increasing the reserves held against their liabilities and therefore restrict the amount of circulation credit. A third possibility would be that the crisis has resulted in the bankruptcy of banks which granted circulation credit and that the annihilation of the fiduciary media issued by these banks reduces the supply of credit on the loan market.

In these cases a temporary tendency toward a rise in the gross market rate of interest ensues. Projects which would have appeared profitable before appear so no longer. A tendency develops toward a fall in the prices of factors of production and later toward a fall in the prices of consumers' goods also. Business becomes slack. The deadlock ceases only when prices and wage rates are by and large adjusted to the new money relation. Then the loan market too adapts itself to the new state of affairs, and the gross market rate of interest is no longer disarranged by a shortage of money offered for advances. Thus a

cash-induced rise in the gross market rate of interest produces a temporary stagnation of business. Deflation and credit contraction no less than inflation and credit expansion are elements disarranging the smooth course of economic activities. However, it is a blunder to look upon deflation and contraction as if they were simply counterparts of inflation and expansion.

Expansion produces first the illusory appearance of prosperity. It is extremely popular because it seems to make the majority, even everybody, more affluent. It has an enticing quality. A special moral effort is needed to stop it. On the other hand, contraction immediately produces conditions which everybody is ready to condemn as evil. Its unpopularity is even greater than the popularity of expansion. It creates violent opposition. Very soon the political forces fighting it become irresistible.

Fiat money inflation and cheap loans to the government convey additional funds to the treasury; deflation depletes the treasury's vaults. Credit expansion is a boon for the banks, contraction is a forfeiture. There is a temptation in inflation and expansion and a repellent in deflation and contraction.

But the dissimilarity between the two opposite modes of money credit manipulation not only consists in the fact that while one of them is popular the other is universally loathed. Deflation and contraction are less likely to spread havoc than inflation and expansion not merely because they are only rarely resorted to. They are less disastrous also on account of their inherent effects. Expansion squanders scarce factors of production by malinvestment and overconsumption. If it once comes to an end, a tedious process of recovery is needed in order to wipe out the impoverishment it has left behind. But contraction produces neither malinvestment nor overconsumption. The temporary restriction in business activities that it engenders may by and large be offset by the drop in consumption on the part of discharged wage earners and the owners of the material factors of production the sales of which drop. No protracted scars are left. When the contraction comes to an end, the process of readjustment does not need to make good for losses caused by capital consumption.

Deflation and credit restriction never played a noticeable role in economic history. The outstanding examples were provided by Great Britain's return, both after the wartime inflation of the Napoleonic wars and after that of the first World War, to the prewar gold parity of the sterling. In each case Parliament and Cabinet adopted the deflationist policy without having weighed the pros and cons of the two methods open for a return to the gold standard. In the second

decade of the nineteenth century they could be exonerated, as at that time monetary theory had not yet clarified the problems involved. More than a hundred years later it was simply a display of inexcusable ignorance of economics as well as of monetary history.<sup>10</sup>

Ignorance manifests itself also in the confusion of deflation and contraction and of the process of readjustment into which every expansionist boom must lead. It depends on the institutional structure of the credit system which created the boom whether or not the crisis brings about a restriction in the amount of fiduciary media. Such a restriction may occur when the crisis results in the bankruptcy of banks granting circulation credit and the falling off is not counterpoised by a corresponding expansion on the part of the remaining banks. But it is not necessarily an attendant phenomenon of the depression; it is beyond doubt that it has not appeared in the last eighty years in Europe and that the extent to which it occurred in the United States under the Federal Reserve Act of 1913 has been grossly exaggerated. The dearth of credit which marks the crisis is caused not by contraction but by the abstention from further credit expansion. It hurts all enterprises—not only those which are doomed at any rate, but no less those whose business is sound and could flourish if appropriate credit were available. As the outstanding debts are not paid back, the banks lack the means to grant credits even to the most solid firms. The crisis becomes general and forces all branches of business and all firms to restrict the scope of their activities. But there is no means of avoiding these secondary consequences of the preceding boom.

As soon as the depression appears, there is a general lament over deflation and people clamor for a continuation of the expansionist policy. Now, it is true that even with no restrictions in the supply of money proper and fiduciary media available, the depression brings about a cash-induced tendency toward an increase in the purchasing power of the monetary unit. Every firm is intent upon increasing its cash holdings, and these endeavors affect the ratio between the supply of money (in the broader sense) and the demand for money (in the broader sense) for cash holding. This may be properly called deflation. But it is a serious blunder to believe that the fall in commodity prices is caused by this striving after greater cash holding. The causation is the other way around. Prices of the factors of production—both material and human—have reached an excessive height in the boom period. They must come down before business can become profitable again. The entrepreneurs enlarge their cash holding because they abstain from

10. See below, p. 784.

buying goods and hiring workers as long as the structure of prices and wages is not adjusted to the real state of the market data. Thus any attempt of the government or the labor unions to prevent or to delay this adjustment merely prolongs the stagnation.

Even economists often failed to comprehend this concatenation. They argued thus: The structure of prices as it developed in the boom was a product of the expansionist pressure. If the further increase in fiduciary media comes to an end, the upward movement of prices and wages must stop. But, if there were no deflation, no drop in prices and wage rates could result.

This reasoning would be correct if the inflationary pressure had not affected the loan market before it had exhausted its direct effects upon commodity prices. Let us assume that a government of an isolated country issues additional paper money in order to pay doles to the citizens of moderate income. The rise in commodity prices thus brought about would disarrange production; it would tend to shift production from the consumers' goods regularly bought by the nonsubsidized groups of the nation to those which the subsidized groups are demanding. If the policy of subsidizing some groups in this way is later abandoned, the prices of the goods demanded by those formerly subsidized will drop and the prices of the goods demanded by those formerly nonsubsidized will rise more sharply. But there will be no tendency of the monetary unit's purchasing power to return to the state of the pre-inflation period. The structure of prices will be lastingly affected by the inflationary venture if the government does not withdraw from the market the additional quantity of paper money it has injected in the shape of subsidies.

Conditions are different under a credit expansion which first affects the loan market. In this case the inflationary effects are multiplied by the consequences of capital malinvestment and overconsumption. Overbidding one another in the struggle for a greater share in the limited supply of capital goods and labor, the entrepreneurs push prices to a height at which they can remain only as long as the credit expansion goes on at an accelerated pace. a sharp drop in the prices of all commodities and services is unavoidable as soon as the further inflow of additional fiduciary media stops.

While the boom is in progress, there prevails a general tendency to buy as much as one can buy because a further rise in prices is anticipated. In the depression, on the other hand, people abstain from buying because they expect that prices will continue to drop. The recovery and the return to "normalcy" can only begin when prices and wage rates are so low that a sufficient number of

people assume that they will not drop still more. Therefore the only means to shorten the period of bad business is to avoid any attempts to delay or to check the fall in prices and wage rates.

Only when the recovery begins to take shape does the change in the money relation, as effected by the increase in the quantity of fiduciary media, begin to manifest itself in the structure of prices.

*The Difference Between Credit Expansion and Simple Inflation*

In dealing with the consequences of credit expansion we assumed that the total amount of additional fiduciary media enters the market system via the loan market as advances to business. All that has been predicated with regard to the effects of credit expansion refers to this condition.

There are, however, instances in which the legal and technical methods of credit expansion are used for a procedure catallactically utterly different from genuine credit expansion. Political and institutional convenience sometimes makes it expedient for a government to take advantage of the facilities of banking as a substitute for issuing government fiat money. The treasury borrows from the bank, and the bank provides the funds needed by issuing additional banknotes or crediting the government on a deposit account. Legally the bank becomes the treasury's creditor. In fact the whole transaction amounts to fiat money inflation. The additional fiduciary media enter the market by way of the treasury as payment for various items of government expenditure. It is this additional government demand that incites business to expand its activities. The issuance of these newly created fiat money sums does not directly interfere with the gross market rate of interest, whatever the rate of interest may be which the government pays to the bank. They affect the loan market and the gross market rate of interest, apart from the emergence of a positive price premium, only if a part of them reaches the loan market at a time at which their effects upon commodity prices and wage rates have not yet been consummated.

Such were, for example, the conditions in the United States in the second World War. Apart from the credit expansion policy, which the Administration had already adopted before the outbreak of the war, the government borrowed heavily from the commercial banks. This was technically credit expansion; essentially it was a substitute for the issuance of greenbacks. Even more complicated techniques were resorted to in other countries. Thus, for instance, the German Reich in the first World War sold bonds to the public. The Reichsbank financed these purchases by lending the greater part of the funds needed to the buyers against the same bonds as collateral. Apart from the fraction which the buyer contributed from his own funds, the role that the Bank and the public played in the whole transaction was merely

formal. Virtually, the additional banknotes were inconvertible paper money.

It is important to pay heed to these facts in order not to confuse the consequences of credit expansion proper and those of government made fiat money inflation.

## 8. The Monetary or Circulation Credit Theory of the Trade Cycle

The theory of the cyclical fluctuations of business as elaborated by the British Currency School was in two respects unsatisfactory.

First it failed to recognize that circulation credit can be granted not only by the issue of banknotes in excess of the banks' holding of cash reserves, but also by creating bank deposits subject to check in excess of such reserves (checkbook money, deposit currency). Consequently it did not realize that deposits payable on demand can also be used as a device of credit expansion. This error is of little weight, as it can be easily amended. It is enough to stress the point that all that refers to credit expansion is valid for all varieties of credit expansion no matter whether the additional fiduciary media are banknotes or deposits. However, the teachings of the Currency School inspired British legislation designed to prevent the return of credit-expansion booms and their necessary consequence, depressions, at a time when this fundamental defect was not yet widely enough recognized. Peel's Act of 1844 and its imitations in other countries did not attain the ends sought, and this failure shook the prestige of the Currency School. The Banking School triumphed undeservedly.

The second shortcoming of the Currency Theory was more momentous. It restricted its reasoning to the problem of the external drain. It dealt only with a particular case, viz., credit expansion in one country only while there is either no credit expansion or only credit expansion to a smaller extent in other areas. This was, by and large, sufficient to explain the British crises of the first part of the nineteenth century. But it touched only the surface of the problem. The essential question was not raised at all. Nothing was done to clarify the consequences of a general expansion of credit not confined to a number of banks with a restricted clientele. The reciprocal relations between the supply of money (in the broader sense) and the rate of interest were not analyzed. The multifarious projects to lower or to abolish interest altogether by means of a banking reform were haughtily derided as quackery, but not critically dissected and refuted. The naive presumption of money's neutrality was tacitly ratified. Thus a free hand was left to all futile attempts to interpret crises and business fluctuations by means of the theory of direct exchange. Many decades passed before the spell was broken.

The hindrance that the monetary or circulation credit theory had to overcome was not merely theoretical error but also political bias. Public opinion is prone to see in interest nothing but a merely institutional obstacle to the expansion of production. It does not realize that the discount of future goods as against present goods is a necessary and eternal category of human action and cannot be abolished by bank manipulation. In the eyes of cranks and demagogues, interest is a product of the sinister machinations of rugged exploiters. The age-old disapprobation of interest has been fully revived by modern interventionism. It clings to the dogma that it is one of the foremost duties of good government to lower the rate of interest as far as possible or to abolish it altogether. All present-day governments are fanatically committed to an easy money policy. As has been mentioned already, the British Government has asserted that credit expansion has performed "the miracle...of turning a stone into bread."<sup>11</sup> A Chairman of the Federal Reserve Bank of New York has declared that "final freedom from the domestic money market exists for every sovereign national state where there exists an institution which functions in the manner of a modern central bank, and whose currency is not convertible into gold or into some other commodity."<sup>12</sup> Many governments, universities, and institutes of economic research lavishly subsidize publications whose main purpose is to praise the blessings of unbridled credit expansion and to slander all opponents as illintentioned advocates of the selfish interests of usurers.

The wavelike movement affecting the economic system, the recurrence of periods of boom which are followed by periods of depression, is the unavoidable outcome of the attempts, repeated again and again, to lower the gross market rate of interest by means of credit expansion. There is no means of avoiding the final collapse of a boom brought about by credit expansion. The alternative is only whether the crisis should come sooner as the result of a voluntary abandonment of further credit expansion, or later as a final and total catastrophe of the currency system involved.

The only objection ever raised against the circulation credit theory is lame indeed. It has been asserted that the lowering of the gross market rate of interest below the height it would have reached on an unhampered loan market may appear not as the outcome of an intentional policy on the part of the banks or the monetary authorities but as the unintentional effect of their conservatism.

11. See above, p. 470.

12. Beardsley Ruml, "Taxes for Revenue Are Obsolete," *American Affairs*, VIII (1946), 35-36.

Faced with a situation which would, when left alone, result in a raise in the market rate, the banks refrain from altering the interest they charge on advances and thus willy-nilly tumble into expansion.<sup>13</sup> These assertions are unwarranted. But if we are prepared to admit their correctness for the sake of argument, they do not affect at all the essence of the monetary explanation of the trade cycle. It is of no concern what the particular conditions are that induce the banks to expand credit and to underbid the gross market rate of interest which the unhampered market would have determined. What counts is solely that the banks and the monetary authorities are guided by the idea that the height of interest rates as the free loan market determines it is an evil, that it is the objective of a good economic policy to lower it, and that credit expansion is an appropriate means of achieving this end without harm to anybody but parasitic moneylenders. It is this infatuation that causes them to embark upon ventures which must finally bring about the slump.

If one takes these facts into consideration one could be tempted to abstain from any discussion of the problems involved in the frame of the theory of the pure market economy and to relegate it to the analysis of interventionism, the interference of government with the market phenomena. It is beyond doubt that credit expansion is one of the primary issues of interventionism. Nevertheless the right place for the analysis of the problems involved is not in the theory of interventionism but in that of the pure market economy. For the problem we have to deal with is essentially the relation between the supply of money and the rate of interest, a problem of which the consequences of credit expansion are only a particular instance.

Everything that has been asserted with regard to the effects of any increase in the supply of money proper as far as this additional supply reaches the loan market at an early stage of its inflow into the market system. If the additional quantity of money increases the quantity of money offered for loans at a time when commodity prices and wage rates have not yet been completely adjusted to the change in the money relation, the effects are no different from those of a credit expansion. In analyzing the problem of credit expansion, catallactics completes the teachings of the theory of money and of interest. It implicitly demolishes the age-old errors concerning interest and explodes the fantastic plans to "abolish" interest by means of monetary or credit reform.

What differentiates credit expansion from an increase in the supply of

13. Machlup, (*The Stock Market, Credit and Capital Formation*, p. 248) calls this conduct of banks "passive inflationism."

money as it can appear in an economy employing only commodity money and no fiduciary media at all is conditioned by divergences in the quantity of the increase and in the temporal sequence of its effects on the various parts of the market. Even a rapid increase in the production of the precious metals can never have the range which credit expansion can attain. The gold standard was an efficacious check upon credit expansion, as it forced the banks not to exceed certain limits in their expansionist ventures.<sup>14</sup> The gold standard's own inflationary potentialities were kept within limits by the vicissitudes of gold mining. Moreover, only a part of the additional gold immediately increased the supply offered on the loan market. The greater part acted first upon commodity prices and wage rates and affected the loan market only at a later stage of the inflationary process.

However, the continuous increase in the quantity of commodity money exercised a steady expansionist pressure on the loan market. The gross market rate of interest was, in the course of the last centuries, continually subject to the impact of an inflow of additional money into the loan market. Of course, this pressure for the last hundred and fifty years in the Anglo-Saxon countries and for the last hundred years in the countries of the European continent, was far exceeded by the effects of the synchronous development of circulation credit as granted by the banks apart from their—from time to time reiterated—straightforward endeavors to lower the gross market rate of interest by an intensified expansion of credit. Thus three tendencies toward a lowering of the gross market rate of interest were operating at the same time and strengthening one another. One was the outgrowth of the steady increase in the quantity of commodity money, the second the outgrowth of a spontaneous development of fiduciary media in banking operations, the third the fruit of intentional anti-interest policies sponsored by the authorities and approved by public opinion. It is, of course, impossible to ascertain in a quantitative way the effect of their joint operation and the contribution of each of them; an answer to such a question can only be provided by historical understanding.

What catallactic reasoning can show us is merely that a slight although continuous pressure on the gross market rate of interest as originating from a continuous increase in the quantity of gold, and also from a slight increase in the quantity of fiduciary media, which is not overdone and intensified by purposeful easy money policy, can be counterpoised by the forces of readjustment and accommodation inherent in the market economy. The

14.Cf. above, p. 475.

adaptability of business not purposely sabotaged by forces extraneous to the market is powerful enough to offset the effects which such slight disturbances of the loan market can possibly bring about.

Statisticians have tried to investigate long waves of business fluctuations with statistical methods. Such attempts are futile. The history of modern capitalism is a record of steady economic progress, again and again interrupted by feverish booms and their aftermath, depressions. It is generally possible to discern statistically these recurring oscillations from the general trend toward an increase in the amount of capital invested and the quantity of products turned out. It is impossible to discover any rhythmical fluctuation in the general trend itself.

### 9. The Market Economy as Affected by the Recurrence of the Trade Cycle

The popularity of inflation and credit expansion, the ultimate source of the repeated attempts to render people prosperous by credit expansion, and thus the cause of the cyclical fluctuations of business, manifests itself clearly in the customary terminology. The boom is called good business, prosperity, and upswing. Its unavoidable aftermath, the readjustment of conditions to the real data of the market, is called crisis, slump, bad business, depression. People rebel against the insight that the disturbing element is to be seen in the malinvestment and the overconsumption of the boom period and that such an artificially induced boom is doomed. They are looking for the philosophers' stone to make it last.

It has been pointed out already in what respect we are free to call an improvement in the quality and an increase in the quantity of products economic progress. If we apply this yardstick to the various phases of the cyclical fluctuations of business, we must call the boom retrogression and the depression progress. The boom squanders through malinvestment scarce factors of production and reduces the stock available through overconsumption; its alleged blessings are paid for by impoverishment. The depression, on the other hand, is the way back to a state of affairs in which all factors of production are employed for the best possible satisfaction of the most urgent needs of the consumers.

Desperate attempts have been made to find in the boom some positive contribution to economic progress. Stress has been laid upon the role forced saving plays in fostering capital accumulation. The argument is vain. It has been shown already that it is very questionable whether forced saving can

ever achieve more than to counterbalance a part of the capital consumption generated by the boom. If those praising the allegedly beneficial effects of forced saving were consistent, they would advocate a fiscal system subsidizing the rich out of taxes collected from people with modest incomes. The forced saving achieved by this method would provide a net increase in the amount of capital available without simultaneously bringing about capital consumption of a much greater size.

Advocates of credit expansion have furthermore emphasized that some of the malinvestments made in the boom later become profitable. These investments, they say, were made too early, i.e., at a date when the state of the supply of capital goods and the valuations of the consumers did not yet allow their construction. However, the havoc caused was not too bad, as these projects would have been executed anyway at a later date. It may be admitted that this description is adequate with regard to some instances of malinvestment induced by a boom. But nobody would dare to assert that the statement is correct with regard to all projects whose execution has been encouraged by the illusions created by the easy money policy. However this may be, it cannot influence the consequences of the boom and cannot undo or deaden the ensuing depression. The effects of the malinvestment appear without regard to whether or not these malinvestments will appear as sound investments at a later time under changed conditions. When, in 1845, a railroad was constructed in England which would not have been constructed in the absence of credit expansion, conditions in the following years were not affected by the prospect that in 1870 or 1880 the capital goods required for its construction would be available. The gain which later resulted from the fact that the railroad concerned did not have to be built by a fresh expenditure of capital and labor, was in 1847 no compensation for the losses incurred by its premature construction.

The boom produces impoverishment. But still more disastrous are its moral ravages. It makes people despondent and dispirited. The more optimistic they were under the illusory prosperity of the boom, the greater is their despair and their feeling of frustration. The individual is always ready to ascribe his good luck to his own efficiency and to take it as a well-deserved reward for his talent, application, and probity. But reverses of fortune he always charges to other people, and most of all to the absurdity of social and political institutions. He does not blame the authorities for having fostered the boom. He reviles them for the inevitable collapse. In the opinion of the public, more inflation and more credit expansion are the only remedy against

the evils which inflation and credit expansion have brought about.

Here, they say, are plants and farms whose capacity to produce is either not used at all or not to its full extent. Here are piles of unsalable commodities and hosts of unemployed workers. But here are also masses of people who would be lucky if they only could satisfy their wants more amply. All that is lacking is credit. Additional credit would enable the entrepreneurs to resume or to expand production. The unemployed would find jobs again and could buy the products. This reasoning seems plausible. Nonetheless it is utterly wrong.

If commodities cannot be sold and workers cannot find jobs, the reason can only be that the prices and wages asked are too high. He who wants to sell his inventories or his capacity to work must reduce his demand until he finds a buyer. Such is the law of the market. Such is the device by means of which the market directs every individual's activities into those lines in which they can best contribute to the satisfaction of the wants of the consumers. The malinvestments of the boom have misplaced inconvertible factors of production in some lines at the expense of other lines in which they were more urgently needed. There is disproportion in the allocation of nonconvertible factors to the various branches of industry. This disproportion can be remedied only by the accumulation of new capital and its employment in those branches in which it is most urgently required. This is a slow process. While it is in progress, it is impossible to utilize fully the productive capacity of some plants for which the complementary production facilities are lacking.

It is vain to object that there is also unused capacity of plants turning out goods whose specific character is low. The slack in the sale of these goods, it is said, cannot be explained by disproportionality in the capital equipment of various branches; they can be used and are needed for many different employments. This too is an error. If steel and iron works, copper mines, and sawmills cannot be operated to their full capacity, the reason can only be that there are not enough buyers on the market ready to purchase their whole output at prices which cover the costs of their current exploitation. As the variable costs can merely consist in prices of other products and in wages, and as the same valid with regard to the prices of these other products, this always means that wage rates are too high to provide all those eager to work with jobs and to employ the inconvertible equipment to the full limits drawn by the requirement that nonspecific capital goods and labor should not be withdrawn from employments in which they fill more urgent needs.

Out of the collapse of the boom there is only one way back to a state of affairs in which progressive accumulation of capital safeguards a steady improvement of material well-being: new saving must accumulate the capital goods needed for a harmonious equipment of all branches of production with the capital required. One must provide the capital goods lacking in those branches which were unduly neglected in the boom. Wage rates must drop; people must restrict their consumption temporarily until the capital wasted by malinvestment is restored. Those who dislike these hardships of the readjustment period must abstain in time from credit expansion.

There is no use in interfering by means of a new credit expansion with the process of readjustment. This would at best only interrupt, disturb, and prolong the curative process of the depression, if not bring about a new boom with all its inevitable consequences.

The process of readjustment, even in the absence of any new credit expansion, is delayed by the psychological effects of disappointment and frustration. People are slow to free themselves from the self-deception of delusive prosperity. Businessmen try to continue unprofitable projects; they shut their eyes to an insight that hurts. The workers delay reducing their claims to the level required by the state of the market; they want, if possible, to avoid lowering their standard of living and changing their occupation and their dwelling place. People are the more discouraged the greater their optimism was in the days of the upswing. They have for the moment lost self-confidence and the spirit of enterprise to such an extent that they even fail to take advantage of good opportunities. But the worst is that people are incorrigible. After a few years they embark anew upon credit expansion, and the old story repeats itself.

*The Role Played by Unemployed Factors of Production  
in the First Stages of a Boom*

There are in the changing economy always unsold inventories (exceeding those quantities which for technical reasons must be kept in stock), unemployed workers, and unused capacity of inconvertible production facilities. The system is moving toward a state in which there will be neither unemployed workers nor surplus inventories.<sup>15</sup> But as the appearance of new data continually diverts the course toward a new goal, the conditions of the evenly rotating economy are never realized.

The presence of unused capacity of inconvertible investments is an 15. In the evenly rotating economy also there may be unused capacity of inconvertible equipment. Its nonutilization does not disturb the equilibrium any more than the fallowness of submarginal soil.

outgrowth of errors committed in the past. The assumptions made by the investors were, as later events proved, not correct; the market asks more intensively for other goods than for those which these plants can turn out. The piling up of excessive inventories and the catallactic unemployment of workers are speculative. The owner of the stock refuses to sell at the market price because he hopes to obtain a higher price at a later date. The unemployed worker refuses to change his occupation or his residence or the content himself with lower pay because he hopes to obtain at a later date a job with higher pay in the place of his residence and in the branch of business he likes best. Both hesitate to adjust their claims to the present situation of the market because they wait for a change in the data which will alter conditions to their advantage. Their hesitation is one of the reasons why the system has not yet adjusted itself to the conditions of the market.

The advocates of credit expansion argue that what is wanted is more fiduciary media. Then the plants will work at full capacity the inventories will be sold at prices their owners consider satisfactory, and the unemployed will get jobs at wages they consider satisfactory. This very popular doctrine implies that the rise in prices, brought about by the additional fiduciary media, would at the same time and to the same extent affect all other commodities and services, while the owners of the excessive inventories and the unemployed workers would content themselves with those nominal prices and wages they are asking—in vain, or course—today. For if this were to happen, the real prices and the real wage rates obtained by these owners of unsold inventories and unemployed workers would drop—in proportion to the prices of other commodities and services—to the height to which they must drop in order to find buyers and employers.

The course of the boom is not substantially affected by the fact that at its eve there are unused capacity, unsold surplus inventories, and unemployed workers. Let us assume that there are unused facilities for the mining of copper, unsold piles of copper, and unemployed workers of copper mines. The price of copper is at a level at which mining does not pay for some mines; their workers are discharged; there are speculators who abstain from selling their stocks. What is needed in order to make these mines profitable again, to give jobs to the unemployed, and to sell the piles without forcing prices down below costs of production, is an increment  $p$  in the amount of capital goods available large enough to make possible such an increase in investment and in the size of production and consumption that an adequate rise in the demand for copper ensues. If, however, this increment  $p$  does not appear and the entrepreneurs, deceived by the credit expansion, nevertheless act as if  $p$  had really been available, conditions on the copper market, while the boom lasts, are as if  $p$  had really been added to the amount of capital goods available. But everything that

has been predicated about the inevitable consequences of credit expansion fits this case too. The only difference is that, as far as copper is concerned, the inappropriate expansion of production need not be achieved by the withdrawal of capital and labor from employments in which they would better have filled the wants of the consumers. As far as copper is concerned, the new boom encounters a piece of malinvestment of capital and malemployment of labor already effected in a previous boom, which the process of readjustment has not yet absorbed.

Thus it becomes obvious how vain it is to justify a new credit expansion by referring to unused capacity, unsold—or, as people say incorrectly, “unsalable”—stocks, and unemployed workers. The beginning of a new credit expansion runs across remainders of preceding malinvestment and malemployment, not yet obliterated in the course of the readjustment process, and seemingly remedies the faults involved. In fact, however, this is merely an interruption of the process of readjustment and of the return to sound conditions.<sup>16</sup> The existence of unused capacity and unemployment is not a valid argument against the correctness of the circulation credit theory. The belief of the advocates of credit expansion and inflation that abstention from further credit expansion and inflation would perpetuate the depression is utterly false. The remedies these authors suggest would not make the boom last forever. They would merely upset the process of recovery.

*The Fallacies of the Nonmonetary Explanations of the Trade Cycle*

In dealing with the futile attempts to explain the cyclical fluctuations of business by a nonmonetary doctrine, on point must first of all be stressed which has hitherto been unduly neglected.

There were schools of thought for whom interest was merely a price paid for obtaining the disposition of a quantity of money or money substitutes. From this belief they quite logically drew the inference that abolishing the scarcity of money and money-substitutes would abolish interest altogether and result in the gratuitousness of credit. If, however, one does not endorse this view and comprehends the nature of ordinary interest, a problem presents itself the treatment of which one must not evade. An additional supply of credit, brought about by an increase in the quantity of money or fiduciary media, has certainly the power to lower the gross market rate of interest. If interest is not merely a monetary phenomenon and consequently cannot be lastingly lowered or brushed away by any increase, however large, in the supply of money and fiduciary media, it devolves upon economics to show how the height of the rate of interest conforming to the state of the market's nonmonetary data reestablishes itself. It must explain what kind of

<sup>16</sup>Hayek (*Prices and Production* [2d ed. London, 1935], pp. 96 ff.) reaches the same conclusion by way of a somewhat different chain of reasoning.

process removes the cash-induced deviation of the market rate from that state which is consonant with the ratio in people's valuation of present and future goods. If economics were at a loss to achieve this, it would implicitly admit that interest is a monetary phenomenon and could even disappear completely in the course of changes in the money relation.

For the nonmonetary explanations of the trade cycle the experience that there are recurrent depressions is the primary thing. Their champions first do not see in their scheme of the sequence of economic events any clue which could suggest a satisfactory interpretation of these enigmatic disorders. They desperately search for a makeshift in order to patch it onto their teachings as an alleged cycle theory.

The case is different with the monetary or circulation credit theory. Modern monetary theory has finally cleared away all notions of an alleged neutrality of money. It has proved irrefutably that there are in the market economy factors operating about which a doctrine ignorant of the driving force of money has nothing to say. The catallactic system that involves the knowledge of money's non-neutrality and driving force presses the questions of how changes in the money relation affect the rate of interest first in the short run and later in the long run. The system would be defective if it could not answer these questions. It would be contradictory if it were to provide an answer which would not simultaneously explain the cyclical fluctuations of trade. Even if there had never been such things as fiduciary media and circulation credit, modern catallactics would have been forced to raise the problem concerning the relations between changes in the money relation and the rate of interest.

It has been mentioned already that every nonmonetary explanation of the cycle is bound to admit that an increase in the quantity of money or fiduciary media is an indispensable condition of the emergence of a boom. It is obvious that a general tendency of prices to rise which is not caused by a general drop in production and in the supply of commodities offered for sale, cannot appear if the supply of money (in the broader sense) has not increased. Now we can see that those fighting the monetary explanation are also forced to resort to the theory they slander for a second reason. For this theory alone answers the question of how an inflow of additional money and fiduciary media affects the loan market and the market rate of interest. Only those for whom interest is merely the outgrowth of an institutionally conditioned scarcity of money can dispense with an implicit acknowledgment of the circulation credit theory of the cycle. This explains why no critic has ever advanced any tenable objection against this theory.

The fanaticism with which the supporters of all these nonmonetary doctrines refuse to acknowledge their errors is, of course, a display of

political bias. The Marxians have inaugurated the usage of interpreting the commercial crisis as an inherent evil of capitalism, as the necessary outgrowth of its “anarchy” of production.<sup>17</sup> The non-Marxian socialists and the interventionists are no less anxious to demonstrate that the market economy cannot avoid the return of depressions. They are the more eager to assail the monetary theory as currency and credit manipulation is today the main instrument by means of which the anticapitalist governments are intent upon establishing government omnipotence.<sup>18</sup>

The attempts to connect business depressions with cosmic influences, the most remarkable of which was William Stanley Jevons’ sunspot theory, failed utterly. The market economy has succeeded in a fairly satisfactory way in adjusting production and marketing to all the natural conditions of human life and its environment. It is quite arbitrary to assume that there is just one natural fact—namely, allegedly rhythmic harvest variations—with which the market economy does not know how to cope. Why do entrepreneurs fail to recognize the fact of crop fluctuations and to adjust business activities in such a way as to discount their disastrous effects upon their plans?

Guided by the Marxian slogan “anarchy of production,” the present-day nonmonetary cycle doctrines explain the cyclical fluctuations of trade in terms of a tendency, allegedly inherent in the capitalist economy, to develop disproportionality in the size of investments made in various branches of industry. Yet even these disproportionality doctrines do not contest the fact that every businessman is eager to avoid such mistakes, which must bring him serious financial losses. The essence of the activities of entrepreneurs and capitalists is precisely not to embark upon projects which they consider unprofitable. If one assumes that there prevails a tendency for businessmen to fail in these endeavors, one implies that all businessmen are short-sighted. They are too dull to avoid certain pitfalls, and thus blunder again and again in their conduct of affairs. The whole of society has to foot the bill for the shortcomings of the thick-headed speculators, promoters, and entrepreneurs.

Now it is obvious that men are fallible, and businessmen are certainly not free from this human weakness. But one should not forget that on the market a process of selection is in continual operation. There prevails an unceasing tendency to weed out the less efficient entrepreneurs, that is, those who fail in their endeavors to anticipate correctly the future demands of the consumers. If one group of entrepreneurs produces commodities in excess of the demand of the consumers and consequently cannot sell these goods at

17.About the fundamental fault of the Marxian and all other underconsumption theories, cf. above, p. 301.

18.About these currency and credit manipulations, cf. below, pp. 780-803.

remunerative prices and suffers losses, other groups who produce those things for which the public scrambles make all the greater profits. Some sectors of business are distressed while others thrive. No general depression of trade can emerge.

But the proponents of the doctrines we have to deal with argue differently. They assume that not only the whole entrepreneurial class but all of the people are struck with blindness. As the entrepreneurial class is not a closed social order to which access is denied to outsiders, as every enterprising man is virtually in a position to challenge those who already belong to the class of entrepreneurs, as the history of capitalism provides innumerable examples of penniless newcomers who brilliantly succeeded in embarking upon the production of those goods which according to their own judgment were fitted to satisfy the most urgent needs of consumers, the assumption that all entrepreneurs regularly fall prey to certain errors tacitly implies that all practical men lack intelligence. It implies that nobody who is engaged in business and nobody who considers engaging in business if some opportunity is offered to him by the shortcomings of those already engaged in it, is shrewd enough to understand the real state of the market. But on the other hand the theorists, who are not themselves active in the conduct of affairs and merely philosophize about other people's actions, consider themselves smart enough to discover the fallacies leading astray those doing business. These omniscient professors are never deluded by the errors which cloud the judgment of everyone else. They know precisely what is wrong with private enterprise. Their claims to be invested with dictatorial powers to control business are therefore fully justified.

The most amazing thing about these doctrines is that they furthermore imply that businessmen, in their littleness of mind, obstinately cling to their erroneous procedures in spite of the fact that the scholars have long since unmasked their faults. Although every textbook explodes them, the businessmen cannot help repeating them. There is manifestly no means to prevent the recurrence of economic depression other than to entrust—in accordance with Plato's utopian ideas—supreme power to the philosophers.

Let us examine briefly the two most popular varieties of these disproportionality doctrines.

There is first the durable goods doctrine. These goods retain their serviceableness for some time. As long as their life period lasts, the buyer who has acquired a piece abstains from replacing it by the purchase of a new one. Thus, once all people have made their purchases, the demand for new products dwindles. Business becomes bad. A revival is possible only when, after the lapse of some time, the old houses, cars, refrigerators, and the like are worn out, and their owners must buy new ones.

However, businessmen are as a rule more provident than this doctrine assumes. They are intent upon adjusting the size of their production to the anticipated size of consumers' demand. The bakers take account of the fact that every day a housewife needs a new loaf of bread, and the manufacturers of coffins take into account the fact that the total annual sale of coffins cannot exceed the number of people deceased during this period. The machine industry reckons with the average "life" of its products no less than do the tailors, the shoemakers, the manufacturers of motorcars, radio sets, and refrigerators, and the construction firms. There are, to be sure, always promoters who in a mood of deceptive optimism are prone to overexpand their enterprises. In the pursuit of such projects they snatch away factors of production from other plants of the same industry and from other branches of industry. Thus their overexpansion results in a relative restriction of output in other fields. One branch goes on expanding while others shrink until the unprofitability of the former and the profitability of the latter rearranges conditions. Both the preceding boom and the following slump concern only a part of business.

The second variety of these disproportionality doctrines is known as the acceleration principle. A temporary rise in the demand for a certain commodity results in increased production of the commodity concerned. If demand later drops again, the investments made for this expansion of production appear as malinvestments. This becomes especially pernicious in the field of durable producers' goods. If the demand for the consumers' good  $a$  increases by 10 per cent, business increases the equipment  $p$  required for its production by 10 per cent. The resulting rise in the demand for  $p$  is the more momentous in proportion to the previous demand for  $p$ , the longer the duration of serviceableness of a piece of  $p$  is and the smaller consequently the previous demand for the replacement of worn-out pieces of  $p$  was. If the life of a piece of  $p$  is 10 years, the annual demand for  $p$  for replacement was 10 per cent of the stock of  $p$  previously employed by the industry. The rise of 10 per cent in the demand for  $a$  doubles therefore the demand for  $p$  and results in a 100 per cent expansion in the equipment  $r$  needed for the production of  $p$ . If then the demand for  $a$  stops increasing, 50 per cent of the production capacity of  $r$  remains idle. If the annual increase in the demand for  $a$  drops from 10 per cent to 5 per cent, 25 per cent of the production capacity of  $r$  cannot be used.

The fundamental error of this doctrine is that it considers entrepreneurial activities as a blindly automatic response to the momentary state of demand. Whenever demand increases and renders a branch of business more profitable, production facilities are supposed instantly to expand in proportion. This view is untenable. Entrepreneurs often err. They pay heavily for their errors. But whoever acted in the way the acceleration principle describes would not be an entrepreneur, but a soulless automaton. Yet the real

entrepreneur is a *speculator*,<sup>19</sup> a man eager to utilize his opinion about the future structure of the market for business operations promising profits. This specific anticipative understanding of the conditions of the uncertain future defies any rules and systematization. It can be neither taught nor learned. If it were different, everybody could embark upon entrepreneurship with the same prospect of success. What distinguishes the successful entrepreneur and promoter from other people is precisely the fact that he does not let himself be guided by what was and is, but arranges his affairs on the ground of his opinion about the future. He sees the past and the present as other people do; but he judges the future in a different way. In his actions he is directed by an opinion about the future which deviates from those held by the crowd. The impulse of his actions is that he appraises the factors of production and the future prices of the commodities which can be produced out of them in a different way from other people. If the present structure of prices renders very profitable the business of those who are today selling the articles concerned, their production will expand only to the extent that entrepreneurs believe that the favorable market constellation will last long enough to make new investments pay. If entrepreneurs do not expect this, even very high profits of the enterprises already operation will not bring about an expansion. It is exactly this reluctance of the capitalists and entrepreneurs to invest in lines which they consider unprofitable that is violently criticized by people who do not comprehend the operation of the market economy. Technocratically minded engineers complain that the supremacy of the profit motive prevents consumers from being amply supplied with all those goods with which technological knowledge could provide them. Demagogues cry out against the greed of capitalists intent upon preserving scarcity.

A satisfactory explanation of business fluctuations must not be built upon the fact that individual firms or groups of firms misjudge the future state of the market and therefore make bad investments. The objective of the trade cycle is the *general* upswing of business activities, the propensity to expand production in *all* branches of industry, and the following *general* depression. These phenomena cannot be brought about by the fact that increased profits in some branches of business result in their expansion and a corresponding overproportional investment in the industries manufacturing the equipment needed for such an expansion.

It is a very well known fact that the more the boom progresses, the harder it becomes to buy machines and other equipment. The plants producing these things are overloaded with orders. Their customers must wait a long time

19. It is noteworthy that the same term is employed to signify the premeditation and the ensuing actions of the promoters and entrepreneurs and the purely academic reasoning of theorists that does not directly result in any action.

until the machines ordered are delivered. This clearly shows that the producers' goods industries are not so quick in the expansion of their own production facilities as the acceleration principle assumes.

But even if, for the sake of argument, we were ready to admit that capitalists and entrepreneurs behave in the way the disproportionality doctrines describe, it remains inexplicable how they could go on in the absence of credit expansion. The striving after such additional investments raises the prices of the complementary factors of production and the rate of interest on the loan market. These effects would curb the expansionist tendencies very soon if there were no credit expansion.

The supporters of the disproportionality doctrines refer to certain occurrences in the field of farming as a confirmation of their assertion concerning the inherent lack of provision on the part of private business. However, it is impermissible to demonstrate characteristic features of free competitive enterprise as operation in the market economy by pointing to conditions in the sphere of medium-size and small farming. In many countries this sphere is institutionally removed from the supremacy of the market and the consumers. Government interference is eager to protect the farmer against the vicissitudes of the market. These farmers do not operate in a free market; they are privileged and pampered by various devices. The orbit of their production activities is a reservation, as it were, in which technological backwardness, narrow-minded obstinacy, and entrepreneurial inefficiency are artificially preserved at the expense of the nonagricultural strata of the people. If they blunder in their conduct of affairs, the government forces the consumers, the taxpayers, and the mortgagees to foot the bill.

It is true that there is such a thing as the *corn-hog cycle* and analogous happenings in the production of other farm products. But the recurrence of such cycles is due to the fact that the penalties which the market applies against inefficient and clumsy entrepreneurs do not affect a great part of the farmers. These farmers are not answerable for their actions because they are the pet children of governments and politicians. If it were not so, they would long since have gone bankrupt and their former farms would be operated by more intelligent people.