

economy, we must look at his balance of payments. It tells us everything about the role he plays in the system of the social division of labor. It shows what he gives to his fellow men and what he receives or takes from them. It shows whether he is a self-supporting decent citizen or a thief or an almsman. It shows whether he consumes all his proceeds or whether he saves a part of them. There are many human things which are not reflected in the sheets of the ledger; there are virtues and achievements, vices and crimes that do not leave any traces in the accounts. But as far as a man is integrated into social life and activities, as far as he contributes to the joint effort of society and his contributions are appreciated by his fellow men, and as far as he consumes what is or could be sold and bought on the market, the information conveyed is complete.

If we combine the balances of payments of a definite number of individuals and leave out of account the items referring to transactions between the members of this group, we draw up the group's balance of payment. This balance tells us how the members of the group, considered as an integrated complex of people, are connected with the rest of the market society. Thus we can draw up the balance of payments of the members of the New York Bar, of the Belgian farmers, of the residents of Paris, or of those of the Swiss Canton of Bern. Statisticians are mostly interested in establishing the balance of payments of the residents of the various countries which are organized as independent nations.

While an individual's balance of payments conveys exhaustive information about his social position, a group's balance discloses much less. It says nothing about the mutual relations between the members of the group. The greater the group is and the less homogeneous its members are, the more defective is the information vouchsafed by the balance of payments. The balance of payments of Denmark tells more about the conditions of the Danes than the United States balance of payments about the conditions of the Americans. If one wants to describe a country's social and economic condition, one does not need to deal with every single inhabitant's personal balance of payments. But one must not form other groups than such as are composed of members who are by and large homogeneous in their social standing and their economic activities.

Reading balances of payments is thus very instructive. However, to guard against popular fallacies, one must know how to interpret them.

It is customary to list separately the monetary and the nonmonetary items of a country's balance of payments. One calls the balance favorable if there

is a surplus of the imports of money and bullion over the exports of money and bullion. One calls the balance unfavorable if the exports of money and bullion exceed the imports. This terminology stems from inveterate Mercantilist errors unfortunately still surviving in spite of the devastating criticism of the economists. The imports and exports of money and bullion are viewed as the unintentional outcome of the configuration of the nonmonetary items of the balance of payments. This opinion is utterly fallacious. An excess in the exports of money and bullion is not the product of an unhappy concatenation of circumstances that befalls a nation like an act of God. It is the result of the fact that the residents of the country concerned are intent upon reducing the amount of money held and upon buying goods instead. This is why the balance of payments of the gold-producing countries is as a rule "unfavorable"; this is why the balance of payments of a country substituting fiduciary media for a part of its money stock is "unfavorable" as long as this process goes on.

No provident action on the part of a paternal authority is required lest a country lose its whole money stock by an unfavorable balance of payments. Things are in this regard not different between the personal balances of payments of individuals and those of groups. Neither are they different between the balances of payments of a city or a district and those of a sovereign nation. No government interference is needed to prevent the residents of New York from spending all their money in dealings with the other forty-nine states of the Union. As long as any American attaches any weights to the keeping of cash, he will spontaneously take charge of the matter. Thus he will contribute his share to the maintenance of an adequate supply of money in his country. But if no American were interested in keeping any cash holding, no government measure concerning foreign trade and the settlement of international payments could prevent an outflow of America's total monetary stock. A rigidly enforced embargo upon the exportation of money and bullion would be required.

15. Interlocal Exchange Rates

Let us first assume that there is only one kind of money. Then with regard to money's purchasing power at various places the same is valid as with regard to commodity prices. The final price of cotton in Liverpool cannot exceed the final price in Houston, Texas, by more than the cost of transportation. As soon as the price in Liverpool rises to a higher point, merchants will ship cotton to

Liverpool and thus will bring about a tendency toward a return to the final price. In the absence of institutional obstacles, the price of an order for the payment of a definite amount of guilders in Amsterdam cannot rise in New York above the amount determined by the costs involved by reminting the coins, shipment, insurance, and the interest during the period required for all these manipulations. As soon as the difference rises above this point—the gold export point—it becomes profitable to ship gold from New York to Amsterdam. Such shipments force the guilder exchange rate in New York down below the gold export point. A difference between the configuration of interlocal exchange rates for commodities and those for money is brought about by the fact that as a rule commodities move only in one direction, namely, from the places of surplus production to those of surplus consumption. Cotton is shipped from Houston to Liverpool and not from Liverpool to Houston. Its price is lower in Houston than in Liverpool by the amount of shipping costs. But money is shipped now this way, now that.

The error of those who try to interpret the fluctuations of the interlocal exchange rates and the interlocal shipments of money as determined by the configuration of the nonmonetary items of the balance of payments is that they assign to money an exceptional position. They do not see that with regard to interlocal exchange rates there is no difference between money and commodities. If cotton trade between Houston and Liverpool is possible at all, the cotton prices at these two places cannot differ by more than the total amount of costs required for shipment. In the same way in which there is a flow of cotton from the southern parts of the United States to Europe, gold flows from the gold-producing countries like South Africa to Europe.

Let us disregard triangular trade and the case of the gold-producing countries and let us assume that the individuals and firms trading with one another on the basis of the gold standard do not have the intention of changing the size of their cash holdings. From their purchases and sales, claims are generated which necessitate interlocal payments. But according to our assumption these interlocal payments are equal in amount. The amount that the residents of *A* have to pay to the residents of *B* is equal to the amount that the residents of *B* have to pay to the residents of *A*. It is therefore possible to save the costs of shipping gold from *A* to *B* and from *B* to *A*. Claims and debts can be settled by a sort of interlocal clearing. It is merely a technical problem whether this evening up is effected by an interlocal clearinghouse organization or by the turnovers of a special market for foreign exchange. At any rate, the price which a resident of *A* (or of *B*)

has to pay for a payment due in *B* (or in *A*) is kept within the margins determined by the shipment costs. It cannot rise above the par value by more than the shipment costs (gold export point) and cannot fall below the shipment costs (gold import point).

It may happen that—all our other assumptions remaining unaltered—there is a temporal discrepancy between the payments due from *A* to *B* and those from *B* to *A*. Then an interlocal shipment of gold can only be avoided by the interposition of a credit transaction. If the importer who today has to pay from *A* to *B* can buy at the market of foreign exchange claims against residents of *B* as fall due in ninety days, he can save the costs of shipping gold by borrowing the sum concerned in *B* for a period of ninety days. The dealers in foreign exchange will resort to this makeshift if the costs of borrowing in *B* do not exceed the costs of borrowing in *A* by more than double the costs of shipping gold. If the cost of shipping gold is 1/8 per cent, they will be ready to pay for a three months' loan in *B* up to 1 per cent (*pro anno*) more as interest than corresponds to the state of the money-market interest rate at which, in the absence of such requirements for interlocal payments, credit transactions between *A* and *B* would be effected.

It is permissible to express these facts by contending that the daily state of the balance of payments between *A* and *B* determines the daily point at which, within the margins drawn by the gold export point and the gold import point, the foreign exchange rates are fixed. But one must not forget to add that this happens only if the residents of *A* and of *B* do not intend to change the size of their cash holdings. Only because this is the case does it become possible to avoid the transfer of gold altogether and to keep foreign exchange rates within the limits drawn by the two gold points. If the residents of *A* want to reduce their cash holdings and those of *B* want to increase theirs, gold must be shipped from *A* to *B* and the rate for cable transfer *B* reaches in *A* the gold export point. Then gold is sent from *A* to *B* in the same way in which cotton is regularly sent from the United States to Europe. The rate of cable transfer *B* reaches the gold export point because the residents of *A* are selling gold to those of *B*, not because their balance of payments is unfavorable.

All this is valid with regard to any payments to be transacted between various places. It makes no difference whether the cities concerned belong to the same sovereign nation or to different sovereign nations. However, government interference has considerably changed the conditions. All governments have created institutions which make it possible for the residents

of their countries to make interlocal domestic payments at par. The costs involved in shipment of currency from one place to another are borne either by the treasury or by the country's central bank system or by another government bank such as the postal savings banks of various European countries. Thus there is no longer any market for domestic interlocal exchange. The public is not charged more for an interlocal order to pay than for a local one or, if the charge is slightly different, it no longer has any reference to the fluctuations of the interlocal movements of currency within the country. It is this government interference which has sharpened the difference between domestic payment and payment abroad. Domestic payments are transacted at par, while with regard to foreign payments fluctuations occur within the limits drawn by the gold points.

If more than one kind of money is used as a medium of exchange, the mutual exchange ratio between them is determined by their purchasing power. The final prices of the various commodities, as expressed in each of the two or several kinds of money, are in proportion to each other. The final exchange ratio between the various kinds of money reflects their purchasing power with regard to the commodities. If any discrepancy appears, opportunity for profitable transactions presents itself and the endeavors of businessmen eager to take advantage of this opportunity tend to make it disappear again. The purchasing-power parity theory of foreign exchange is merely the application of the general theorems concerning the determination of prices to the special case of the coexistence of various kinds of money.

It does not matter whether the various kinds of money coexist in the same territory or whether their use is limited to distinct areas. In any case the mutual exchange ratio between them tends to a final state at which it no longer makes any difference whether one buys and sells against this or that kind of money. As far as costs of interlocal transfer come into play, these costs must be added or deducted.

The changes in purchasing power do not occur at the same time with regard to all commodities and services. Let us consider again the practically very important instance of an inflation in one country only. The increase in the quantity of domestic credit money or fiat money affects at first only the prices of some commodities and services. The prices of the other commodities remain for some time still at their previous stand. The exchange ratio between the domestic currency and the foreign currencies is determined on the bourse, a market organized and managed according to the pattern and the commercial customs of the stock exchange. The dealers on this special

market are quicker than the rest of the people in anticipating future changes. Consequently the price structure of the market for foreign exchange reflects the new money relation sooner than the prices of many commodities and services. As soon as the domestic inflation begins to affect the prices of some commodities, at any rate long before it has exhausted all its effects upon the greater part of the prices of commodities and services, the price of foreign exchange tends to rise to the point corresponding to the final state of domestic prices and wage rates.

This fact has been entirely misinterpreted. People failed to realize that the rise in foreign exchange rates merely anticipates the movement of domestic commodity prices. They explained the boom in foreign exchange as an outcome of an unfavorable balance of payments. The demand for foreign exchange, they maintained, has been increased by a deterioration of the balance of trade or of other items of the balance of payments, or simply by sinister machinations on the part of unpatriotic speculators. The higher prices to be paid for foreign exchange cause the domestic prices of imported goods to rise. The prices of the domestic products must follow suit because otherwise their low state would encourage business to withhold them from domestic consumption and to sell them abroad at a premium.

The fallacies involved in this popular doctrine can easily be shown. If the nominal income of the domestic public had not been increased by the inflation, they would be forced to restrict their consumption either of imported or of domestic products. In the first case imports would drop and in the second case exports would increase. Thus the balance of trade would again be brought back to what the Mercantilists call a favorable state.

Pressed hard, the Mercantilists cannot help admitting the cogency of this reasoning. But, they say, it applies only to normal trade conditions. It does not take into account the state of affairs in countries which are under the necessity of importing vital commodities such as food and essential raw materials. The importation of such goods cannot be curtailed below a certain minimum. They are imported no matter what prices must be paid for them. If the foreign exchange required for importing them cannot be procured by an adequate amount of exports, the balance of trade becomes unfavorable and the foreign exchange rates must rise more and more.

This is no less illusory than all other Mercantilist ideas. However urgent and vital an individual's or a group of individuals' demand for some goods may be, they can satisfy it on the market only by paying the market price. If an Austrian wants to buy Canadian wheat, he must pay the market price in

Canadian dollars. He must procure these Canadian dollars by exporting goods either directly to Canada or to some other country. He does not increase the amount of Canadian dollars available by paying higher prices (in schillings, the Austrian domestic currency) for Canadian dollars. Moreover, he cannot afford to pay such higher prices (in schillings) for imported wheat if his income (in schillings) remains unchanged. Only if the Austrian Government embarks upon an inflationary policy and thus increases the number of schillings in the pockets of its citizens, are the Austrians in a position to continue to buy the quantities of Canadian wheat they used to buy without curtailing other expenditures. If there were no domestic inflation, any rise in the price of imported goods would result either in a drop in their consumption or in a restriction in the consumption of other goods. Thus the process of readjustment as described above would have come into motion.

If a man lacks the money to buy bread from his neighbor, the village baker, the cause is not to be seen in an alleged scarcity of money. The cause is that this man did not succeed in earning the amount of money needed either by selling goods or by rendering services for which people are prepared to pay. The same is true with regard to international trade. A country may be distressed on account of the fact that it is at a loss to sell abroad as many commodities as it would have to sell in order to buy all the food its citizens want. But this does not mean that foreign exchange is scarce. It means that the residents are poor. And domestic inflation is certainly not an appropriate means to remove this poverty.

Neither has speculation any reference to the determination of foreign exchange rates. The speculators merely anticipate the expected alterations. If they err, if their opinion that an inflation is in progress is wrong, the structure of prices and foreign exchange rates will not correspond to their anticipations and they will have to pay for their mistakes by losses.

The doctrine according to which foreign exchange rates are determined by the balance of payments is based upon an illicit generalization of a special case. If two places, *A* and *B*, use the same kind of money and if the residents do not want to make any changes in the size of their cash holdings, over a given period of time the amount of money paid from the residents of *A* to those of *B* equals the amount paid from the residents of *B* to those of *A* and all payments can be settled without shipping money from *A* to *B* or from *B* to *A*. Then the rate of cable transfer *B* in *A* cannot rise above a point slightly below the gold export point and cannot drop below a point slightly above

the gold import point, and vice versa. Within this margin the daily state of the balance of payments determines the daily state of the foreign exchange rate. This is the case only because neither the residents of *A* nor those of *B* want to alter the amount of their cash holdings. If the residents of *A* want to decrease their cash holdings and those of *B* to increase theirs, money is shipped from *A* to *B* and the cable rate *B* reaches in *A* the gold export point. But money is not shipped because *A*'s balance of payments has become unfavorable. What is called by the Mercantilists an unfavorable balance of payments is the effect of a deliberate restriction of cash holdings on the part of the citizens of *A* and a deliberate increase in cash holdings on the part of the citizens of *B*. If no resident of *A* were ready to reduce his cash holding, such an outflow of money from *A* could never materialize.

The difference between the trade in money and that in the vendible commodities is this: As a rule commodities move on a one-way road, viz., from the places of surplus production to those of surplus consumption. Consequently the price of a certain commodity in the places of surplus production is as a rule lower by the amount of shipping costs than in the places of surplus consumption. Things are different with money if we do not take into account the conditions of the gold-mining countries and of those countries whose residents deliberately aim at altering the size of their cash holdings. Money moves now this way, now that. At one time a country exports money, at another time it imports money. Every exporting country very soon becomes an importing country precisely on account of its previous exports. For this reason alone it is possible to save the costs of shipping money by the interplay of the market for foreign exchange.

16. Interest Rates and the Money Relation

Money plays in credit transaction the same role it plays in all other business transactions. As a rule loans are granted in money, and interest and principal are paid in money. The payments resulting from such dealings influence the size of cash holding only temporarily. The recipients of loans, interest, and principal spend the sums received either for consumption or for investment. They increase their cash holdings only if definite considerations, independent of the inflow of the money received, motivate them to act in this way.

The final state of the market rate of interest is the same for all loans of the same character. Differences in the rate of interest are caused either by differences in the soundness and trustworthiness of the debtor or by differ-

ences in the terms of the contract.²¹ Differences in interest rates which are not brought about by these differences in conditions tend to disappear. The applicants for credits approach the lenders who ask a lower rate of interest. The lenders are eager to cater to people who are ready to pay higher interest rates. Things on the money market are the same as on all other markets.

With regard to interlocal credit transactions the interlocal exchange rates are to be taken into account as well as differences in the monetary standard if there are any. Let us contemplate the case of two countries, *A* and *B*. *A* is under the gold standard, *B* under the silver standard. The lender who considers lending money from *A* to *B* must first sell gold against silver and later, at the termination of the loan, silver against gold, the principal repaid by the debtor (in silver) will buy a smaller amount of gold than that expended by the creditor when he previously embarked upon the transaction. He will therefore only venture lending in *B* if the difference in the market rate of interest between *A* and *B* is large enough to cover an expected fall in the price of silver as against gold. The tendency toward an equalization of the market rate of interest for short-term loans which prevails if *A* and *B* are both under the same monetary standard is seriously impaired under a diversity of standards.

If *A* and *B* are both under the same standard, it is impossible for the banks of *A* to expand credit if those of *B* do not espouse the same policy. Credit expansion in *A* makes prices rise, and short-term interest rates temporarily drop in *A*, while prices and interest rates in *B* remain unchanged. Consequently exports from *A* drop and imports to *A* increase. In addition, the money lenders of *A* become eager to lend on the short-term loan market of *B*. The result is an external drain from *A* which makes the money reserves of *A*'s banks dwindle. If the banks of *A* do not abandon their expansionist policy, they will become insolvent.

This process has been entirely misinterpreted. People speak of an important and vital function which a country's central bank has to fulfill on behalf of the nation. It is, they say, the central bank's sacred duty to preserve the stability of foreign exchange rates and to protect the nation's gold reserve against attacks on the part of foreign speculators and their domestic abettors. The truth is that all that a central bank does lest its gold reserve evaporate is done for the sake of the preservation of its own solvency. It has jeopardized its financial position by embarking upon credit expansion and must now undo its previous action in order to avoid its disastrous consequences. Its

21. For a more elaborate analysis, see below, pp. 539-548.

expansionist policy has encountered the obstacles limiting the issuance of fiduciary media.

The use of the terminology of warfare is inappropriate in dealing with monetary matters, as it is in the treatment of all other catalactic problems. There is no such thing as a “war” between the central banks. No sinister forces are “attacking” a bank’s position and threatening the stability of foreign exchange rates. No “defender” is needed to “protect” a nation’s currency system. It is, moreover, not true that what prevent a nation’s central bank or its private banks from lowering the domestic market rate of interest are considerations of the preservation of the gold standard and of foreign exchange stability and of frustrating the machinations of an international combine of capitalistic moneylenders. The market rate of interest cannot be lowered by a credit expansion except for a short time, and even then it brings about all those effects which the theory of the trade cycle describes.

When the Bank of England redeemed a banknote issued according to the terms of the contract, it did not render unselfishly a vital service to the British people. It simply did what every housewife does in paying the grocer’s bill. The idea that there is some special merit in a central bank’s fulfillment of its voluntarily assumed responsibilities could originate only because again and again governments granted to these banks the privilege of denying to their clients the payments to which they had a legal title. In fact, the central banks became more and more subordinate offices of the treasuries, mere tools for the performance of credit expansion and inflation. It does not make any difference practically whether they are or are not owned by the government and directly managed by government officials. In effect the banks granting circulation credit are in every country today only affiliates of the treasuries.

There is but one means of keeping a local and national currency permanently at par with gold and foreign exchange: unconditional redemption. The central bank has to buy at the parity rate any amount of gold and foreign exchange offered against domestic banknotes and deposit currency; on the other hand it has to sell, without discrimination, any amount of gold and foreign exchange asked for by people ready to pay the parity price in domestic banknotes, coins, or deposit currency. Such was the policy of central banks under the gold standard. Such was also the policy of those governments and central banks which had adopted the currency system commonly known under the name of the gold exchange standard. The only difference between the “orthodox” or classical gold standard as it existed in

Great Britain from the early 'twenties of the nineteenth century until the outbreak of the first World War and in other countries on the one hand, and the gold exchange standard on the other, concerned the use of gold coins on the domestic market. Under the classical gold standard a part of the cash holdings of the citizens consisted in gold coins and the rest in money substitutes. Under the gold exchange standard the cash holdings consisted entirely in money-substitutes.

Pegging a certain rate of foreign exchange is tantamount to redemption at this rate.

A foreign exchange equalization account, too, can succeed in its operations only as far as it clings to the same methods.

The reasons why in the last decades European governments have preferred foreign exchange equalization accounts to the operation of central banks are obvious. Central bank legislation was an achievement of liberal governments or of governments which did not dare to challenge openly, at least in the conduct of financial policies, public opinion of the liberal countries. The operations of central banks were therefore adjusted to economic freedom. For that reason they were considered unsatisfactory in this age of rising totalitarianism. The main characteristics of the operation of a foreign exchange equalization account as distinguished from central bank policy are:

1. The authorities keep the transactions of the account secret. The laws have obliged the central banks to publicize their actual status at short intervals, as a rule every week. But the status of the foreign exchange equalization accounts is known only to the initiated. Officialdom renders a report to the public only after a lapse of time when the figures are of interest to historians alone and of no use whatever to the businessman.

2. This secrecy makes it possible to discriminate against people not in great favor with the authorities. In many continental countries of Europe it resulted in scandalous corruption. Other governments used the power to discriminate to the detriment of businessmen belonging to linguistic or religious minorities or supporting opposition parties.

3. A parity is no longer fixed by a law duly promulgated by parliament and therefore known to every citizen. The determination depends upon the arbitrariness of bureaucrats. From time to time the newspapers reported: The Ruritanian currency is weak. A more correct description would have been: The Ruritanian authorities have decided to raise the price of foreign exchange.²²

A foreign exchange equalization account is not a magic wand for reme-

22. See below, pp. 786-789.

dying the evils of inflation. It cannot apply any means other than those available to "orthodox" central banks. And it must, like the central banks, fail in the endeavors to keep foreign exchange rates at par if there is domestic inflation and credit expansion.

It has been asserted that the "orthodox" methods of fighting an external drain by using the rate of discount no longer work because nations are no longer prepared to comply with "the rules of the game." Now, the gold standard is not a game, but a social institution. Its working does not depend on the preparedness of any people to observe some arbitrary rules. It is controlled by the operation of inexorable economic law.

The critics give point to their objection by citing the fact that in the interwar period a rise in the rate of discount failed to stop the external drain, i.e., the outflow of specie and the transfer of deposits into foreign countries. But this phenomenon was caused by the governments' anti-gold and pro-inflation policies. If a man expects that he will lose 40 per cent of his balance by an impending devaluation, he will try to transfer his deposit into another and will not change his mind if the bank rate in the country planning a devaluation rises 1 or 2 per cent. Such a rise in the rate of discount is obviously not a compensation for a loss ten or twenty or even forty times greater. Of course, the gold standard cannot work if governments are eager to sabotage its operations.

17. Secondary Media of Exchange

The use of money does not remove the differences which exist between the various nonmonetary goods with regard to their marketability. In the money economy there is a very substantial difference between the marketability of money and that of the vendible goods. But there remain differences between the various specimens of this latter group. For some of them it is easier to find without delay a buyer ready to pay the highest price which, under the state of the market, can possibly be attained. With others it is more difficult. A first-class bond is more marketable than a house in a city's main street, and an old fur coat is more marketable than an autograph of an eighteenth-century statesman. One no longer compares the marketability of the various vendible goods with the perfect marketability of money. One merely compares the degree of marketability of the various commodities. One may speak of the secondary marketability of the vendible goods.

He who owns a stock of goods of a high degree of secondary marketability is in a position to restrict his cash holding. He can expect that when one day

it is necessary for him to increase his cash holding he will be in a position to sell these goods of a high degree of secondary marketability without delay at the highest price attainable at the market. Thus the size of a man's or a firm's cash holding is influenced by whether or not he owns a stock of goods with a high degree of secondary marketability. The size of cash holding and the expense incurred in keeping it can be reduced if income-producing goods of a high degree of secondary marketability are available.

Consequently there emerges a specific demand for such goods on the part of people eager to keep them in order to reduce the costs of cash holding. The prices of these goods are partly determined by this specific demand; they would be lower in its absence. These goods are secondary media of exchange, as it were, and their exchange value is the resultant of two kinds of demand: the demand related to their services as secondary media of exchange, and the demand related to the other services they render.

The costs incurred by holding cash are equal to the amount of interest which the sum concerned would have borne when invested. The cost incurred by holding a stock of secondary media of exchange consists in the difference between the interest yield of the securities employed for this purpose and the higher yield of other securities which differ from the former only in regard to their lower marketability and are therefore not suited for the role of secondary media of exchange.

From time immemorial jewels have been used as secondary media of exchange. Today the secondary media of exchange commonly used are:

1. Claims against banks, bankers, and savings banks which—although not money-substitutes²³—are daily maturing or can withdrawn on short notice.
2. Bonds whose volume and popularity are so great that it is, as a rule, possible to sell moderate quantities of them without depressing the market.
3. Finally, sometimes even certain especially marketable stocks or even commodities.

Of course, the advantages to be expected from lowering the costs of holding cash must be confronted with certain hazards incurred. The sale of securities and still more that of commodities may only be feasible with a loss. This danger is not present with bank balances and the hazard of the bank's insolvency is usually negligible. Therefore interest-bearing claims against banks and bankers, which can be withdrawn at short notice, are the most popular secondary media of exchange.

23. For instance, demand deposits not subject to check.

One must not confuse secondary media of exchange with money-substitutes. Money-substitutes are in the settlement of payments given away and received like money. But the secondary media of exchange must first be exchanged against money or money-substitutes if one wants to use them—in a roundabout way—for paying or for increasing cash holdings.

Claims employed as secondary media of exchange have, because of this employment, a broader market and a higher price. The outcome of this is that they yield lower interest than claims of the same kind which are not fit to serve as secondary media of exchange. Government bonds and treasury bills which can be used as secondary media of exchange can be floated on conditions more favorable to the debtor than loans not suitable for this purpose. The debtors concerned are therefore eager to organize the market for their certificates of indebtedness in such a way as to make them attractive for those in search of secondary media of exchange. They are intent upon making it possible for every holder of such securities to sell them or to use them as collateral in borrowing under the most reasonable terms. In advertising their bond issues to the public they stress these opportunities as a special boon.

In the same way banks and bankers are intent upon attracting demand for secondary media of exchange. They offer convenient terms to their customers. They try to outdo one another by shortening the time allowed for notice. Sometimes they pay interest even for money maturing without notice. In this rivalry some banks have gone too far and endangered their solvency.

Political conditions of the last decades have given to bank balances which can be used as secondary media of exchange an increased importance. The governments of almost all countries are engaged in a campaign against the capitalists. They are intent upon expropriating them by means of taxation and monetary measures. The capitalists are eager to protect their property by keeping a part of their funds liquid in order to evade confiscatory measures in time. They keep balances with the banks of those countries in which the danger of confiscation or currency devaluation is for the moment less than in other countries. As soon as the prospects change, they transfer their balances into countries which temporarily seem to offer more security. It is these funds which people have in mind when speaking of "hot money."

The significance of hot money for the constellation of monetary affairs is the outcome of the one-reserve system. In order to make it easier for the central banks to embark upon credit expansion, the European governments aimed long ago at a concentration of their countries' gold reserves with the

central banks. The other banks (the private banks, i.e., those not endowed with special privileges and not entitled to issue banknotes) restrict their cash holdings to the requirements of their daily transactions. They no longer keep a reserve against their daily maturing liabilities. They do not consider it necessary to balance the maturity dates of their liabilities and their assets in such a way as to be any day ready to comply unaided with their obligations to their creditors. They rely upon the central bank. When the creditors want to withdraw more than the "normal" amount, the private banks borrow the funds needed from the central bank. A private bank considers itself liquid if it owns a sufficient amount either of collateral against which the central bank will lend or of bills of exchange which the central bank will rediscount.²⁴

When the inflow of hot money began, the private banks of the countries in which it was temporarily deposited saw nothing wrong in treating these funds in the usual way. They employed the additional funds entrusted to them in increasing their loans to business. They did not worry about the consequences, although they knew that these funds would be withdrawn as soon as any doubts about their country's fiscal or monetary policy emerged. The illiquidity of the status of these banks was manifest: on the one hand large sums which the customers had the right to withdraw at short notice, and on the other hand loans to business which could be recovered only at a later date. The only cautious method of dealing with hot money would have been to keep a reserve of gold and foreign exchange big enough to pay back the whole amount in case of a sudden withdrawal. Of course, this method would have required the banks to charge the customers a commission for keeping their funds safe.

The showdown came for the Swiss banks on the day in September, 1936, on which France devalued the French franc. The depositors of hot money became frightened; they feared that Switzerland might follow the French example. It was to be expected that they would all try to transfer their funds immediately to London or New York, or even to Paris, which for the immediate coming weeks seemed to offer a smaller hazard of currency depreciation. But the Swiss commercial banks were not in a position to pay back these funds without the aid of the National Bank. They had lent them to business—a great part to business in countries which, by foreign exchange control, had blocked their balances. The only way out would have been for them to borrow from the National bank. Then they would have maintained their own solvency. But the depositors paid would have immediately asked

24. All this refers to European conditions. American conditions differ only technically, but not economically.

the National Bank for the redemption, in gold or foreign exchange, of the banknotes received. If the National Bank were not to comply with this request, it would thereby have actually abandoned the gold standard and devalued the Swiss franc. If, on the other hand, the Bank had redeemed the notes, it would have lost the greater part of its reserve. A panic would have resulted. The Swiss themselves would have tried to procure as much gold and foreign exchange as possible. The whole monetary system of the country would have collapsed.

The only alternative for the Swiss National Bank would have been not to assist the private banks at all. But this would have been equivalent to the insolvency of the country's most important credit institutions.

Thus for the Swiss Government no choice was left. It had only one means to prevent an economic catastrophe: to follow suit forthwith and to devalue the Swiss franc. The matter did not brook delay.

By and large, Great Britain, at the outbreak of the war in September, 1939, had to face similar conditions. The City of London was once the world's banking center. It has long since lost this function. But foreigners and citizens of the Dominions still kept, on the eve of the war, considerable short-term balances in the British banks. Besides, there were the large deposits due to the central banks in the "sterling area." If the British Government had not frozen all these balances by means of foreign exchange restrictions, the insolvency of the British banks would have become manifest. Foreign exchange control was a disguised moratorium for the banks. It relieved them from the plight of having to confess publicly their inability to fulfill their obligations.

18. The Inflationist View of History

A very popular doctrine maintains that progressive lowering of the monetary unit's purchasing power played a decisive role in historical evolution. It is asserted that mankind would not have reached its present state of well-being if the supply of money had not increased to a greater extent than the demand for money. The resulting fall in purchasing power, it is said, was a necessary condition of economic progress. The intensification of the division of labor and the continuous growth of capital accumulation, which have centupled the productivity of labor, could ensue only in a world of progressive price rises. Inflation creates prosperity and wealth; deflation distress and economic decay.²⁵ A survey of political literature and of the ideas that guided for centuries the

25.Cf. the critical study of Marianne von Herzfeld, "Die Geschichte als Funktion der Geldbewegung," *Archiv fuer Sozialwissenschaft*, LVI, 654-686, and the writings quoted in this study.

monetary and credit policies of the nations reveals that this opinion is almost generally accepted. In spite of all warnings on the part of economists it is still today the core of the layman's economic philosophy. It is no less the essence of the teachings of Lord Keynes and his disciples in both hemispheres.

The popularity of inflationism is in great part due to deep-rooted hatred of creditors. Inflation is considered just because it favors debtors at the expense of creditors. However, the inflationist view of history which we have to deal with in this section is only loosely related to this anticreditor argument. Its assertion that "expansionism" is the driving force of economic progress and that "restrictionism" is the worst of all evils is mainly based on other arguments.

It is obvious that the problems raised by the inflationist doctrine cannot be solved by a recourse to the teachings of historical experience. It is beyond doubt that the history of prices shows, by and large, a continuous, although sometimes for short periods interrupted, upward trend. It is of course impossible to establish this fact otherwise than by historical understanding. Catalectic precision cannot be applied to historical problems. The endeavors of some historians and statisticians to trace back the changes in the purchasing power of the precious metals for centuries, and to measure them, are futile. It has been shown already that all attempts to measure economic magnitudes are based on entirely fallacious assumptions and display ignorance of the fundamental principles both of economics and of history. But what history by means of its specific methods can tell us in this field is enough to justify the assertion that the purchasing power of money has for centuries shown a tendency to fall. With regard to this point all people agree.

But this is not the problem to be elucidated. The question is whether the fall in purchasing power was or was not an indispensable factor in the evolution which led from the poverty of ages gone by to the more satisfactory conditions of modern Western capitalism. This question must be answered without reference to the historical experience, which can be and always is interpreted in different ways, and to which supporters and adversaries of every theory and of every explanation of history refer as a proof of their mutually contradictory and incompatible statements. What is needed is a clarification of the effects of changes in purchasing power on the division of labor, the accumulation of capital, and technological improvement.

In dealing with this problem one cannot satisfy oneself with the refutation of the arguments advanced by the inflationists in support of their thesis. The

absurdity of these arguments is so manifest that their refutation and exposure is easy indeed. From its very beginnings economics has shown again and again that assertions concerning the alleged blessings of an abundance of money and the alleged disasters of a scarcity of money are the outcome of crass errors in reasoning. The endeavors of the apostles of inflationism and expansionism to refute the correctness of the economists' teachings have failed utterly.

The only relevant question is this: Is it possible or not to lower the rate of interest lastingly by means of credit expansion? This problem will be treated exhaustively in the chapter dealing with the interconnection between the money relation and the rate of interest. There it will be shown what the consequences of booms created by credit expansion must be.

But we must ask ourselves at this point of our inquiries whether it is not possible that there are other reasons which could be advanced in favor of the inflationary interpretation of history. Is it not possible that the champions of inflation have neglected to resort to some valid arguments which could support their stand? It is certainly necessary to approach the issue from every possible avenue.

Let us think of a world in which the quantity of money is rigid. At an early stage of history the inhabitants of this world have produced the whole quantity of the commodity employed for the monetary service which can possibly be produced. A further increase in the quantity of money is out of the question. Fiduciary media are unknown. All money-substitutes—the subsidiary coins included—are money-certificates.

On these assumptions the intensification of the division of labor, the evolution from the economic self-sufficiency of households, villages, districts, and countries to the world-embracing market system of the nineteenth century, the progressive accumulation of capital, and the improvement of technological methods of production would have resulted in a continuous trend toward falling prices. Would such a rise in the purchasing power of the monetary unit have stopped the evolution of capitalism?

The average businessman will answer this question in the affirmative. Living and acting in an environment in which a slow but continuous fall in the monetary unit's purchasing power is deemed normal, necessary, and beneficial, he simply cannot comprehend a different state of affairs. He associates the notions of rising prices and profits on the one hand and of falling prices and losses on the other. The fact that there are bear operations too and that great fortunes have been made by bears does not shake his dogmatism. These are, he says, merely speculative transactions of people

eager to profit from the fall in the prices of goods already produced and available. Creative innovations, new investments, and the application of improved technological methods require the inducement brought about by the expectation of price rises. Economic progress is possible only in a world of rising prices.

This opinion is untenable. In a world of a rising purchasing power of the monetary unit everybody's mode of thinking would have adjusted itself to this state of affairs, just as in our actual world it has adjusted itself to a falling purchasing power of the monetary unit. Today everybody is prepared to consider a rise in his nominal or monetary income as an improvement of his material well-being. People's attention is directed more toward the rise in nominal wage rates and the money equivalent of wealth than to the increase in the supply of commodities. In a world of rising purchasing power for the monetary unit they would concern themselves more with the fall in living costs. This would bring into clearer relief the fact that economic progress consists primarily in making the amenities of life more easily accessible.

In the conduct of business, reflections concerning the secular trend of prices do not bother any role whatever. Entrepreneurs and investors do not bother about secular trends. What guides their actions is their opinion about the movement of prices in the coming weeks, months, or at most years. They do not heed the general movement of all prices. What matters for them is the existence of discrepancies between the prices of the complementary factors of production and the anticipated prices of the products. No businessman embarks upon a definite production project because he believes that *the prices*, i.e., the prices of all goods and services, will rise. He engages himself if he believes that he can profit from a difference between the prices of goods of various orders. In a world with a secular tendency toward falling prices, such opportunities for earning profit will appear in the same way in which they appear in a world with a secular trend toward rising prices. The expectation of a *general* progressive upward movement of *all* prices does not bring about intensified production and improvement in well-being. It results in the "flight to real values," in the crack-up boom and the complete breakdown of the monetary system.

If the opinion that the prices of all commodities will drop becomes general, the short-term market rate of interest is lowered by the amount of the negative price premium.²⁶ Thus the entrepreneur employing borrowed funds is secured against the consequences of such a drop in prices to the

26.Cf. below, pp. 541-545.

same extent to which, under conditions of rising prices, the lender is secured through the price premium against the consequences of falling purchasing power.

A secular tendency toward a rise in the monetary unit's purchasing power would require rules of thumb on the part of businessmen and investors other than those developed under the secular tendency toward a fall in its purchasing power. But it would certainly not influence substantially the course of economic affairs. It would not remove the urge of people to improve their material well-being as far as possible by an appropriate arrangement of production. It would not deprive the economic system of the factors making for material improvement, namely, the striving of enterprising promoters after profit and the readiness of the public to buy those commodities which are apt to provide them the greatest satisfaction at the lowest costs.

Such observations are certainly not a plea for a policy of deflation. They imply merely a refutation of the ineradicable inflationist fables. They unmask the illusiveness of Lord Keynes' doctrine that the source of poverty and distress, of depression of trade, and of unemployment is to be seen in a "contractionist pressure." It is not true that "a deflationary pressure ... would have . . . prevented the development of modern industry." It is not true that credit expansion brings about the "miracle . . . of turning a stone into bread."²⁷

Economics recommends neither inflationary nor deflationary policy. It does not urge the governments to tamper with the market's choice of a medium of exchange. It establishes only the following truths:

1. By committing itself to an inflationary or deflationary policy a government does not promote the public welfare, the commonweal, or the interests of the whole nation. It merely favors one or several groups of the population at the expense of other groups.

2. It is impossible to know in advance which group will be favored by a definite inflationary or deflationary measure and to what extent. These effects depend on the whole complex of the market data involved. They also depend largely on the speed of the inflationary or deflationary movements and may be completely reversed with the progress of these movements.

3. At any rate, a monetary expansion results in misinvestment of capital and overconsumption. It leaves the nation as a whole poorer, not richer.

27. Quoted from: *International Clearing Union, Text of a Paper Containing Proposals by British Experts for an International Clearing Union, April 8, 1943* (published by British Information Services, an Agency of the British Government), p. 12.

These problems are dealt with in Chapter XX.

4. Continued inflation must finally end in the crack-up boom, the complete breakdown of the currency system.

5. Deflationary policy is costly for the treasury and unpopular with the masses. But inflationary policy is a boon for the treasury and very popular with the ignorant. Practically, the danger of deflation is but slight and the danger of inflation tremendous.

19. The Gold Standard

Men have chosen the precious metals gold and silver for the money service on account of their mineralogical, physical, and chemical features. The use of money in a market economy is a praxeologically necessary fact. That gold—and not something else—is used as money is merely a historical fact and as such cannot be conceived by catallactics. In monetary history too, as in all other branches of history, one must resort to historical understanding. If one takes pleasure in calling the gold standard a “barbarous relic,”²⁸ one cannot object to the application of the same term to every historically determined institution. Then the fact that the British speak English—and not Danish, German, or French—is a barbarous relic too, and every Briton who opposes the substitution of Esperanto for English is no less dogmatic and orthodox than those who do not wax rapturous about the plans for a managed currency.

The demonetization of silver and the establishment of gold mono-metallism was the outcome of deliberate government interference with monetary matters. It is pointless to raise the question concerning what would have happened in the absence of these policies. But it must not be forgotten that it was not the intention of the governments to establish the gold standard. What the governments aimed at was the double standard. They wanted to substitute a rigid, government-decreed exchange ratio between gold and silver for the fluctuating market ration between the independently coexistent gold and silver coins. The monetary doctrines underlying these endeavors misconstrued the market phenomena in that complete way in which only bureaucrats can misconstrue them. The attempts to create a double standard of both metals, gold and silver, failed lamentably. It was this failure which generated the gold standard. The emergence of the gold standard was the manifestation of a crushing defeat of the governments and their cherished doctrines.

In the seventeenth century the rates at which the English government tariffed the coins overvalued the guinea with regard to silver and thus made

28.Lord Keynes in the speech delivered before the House of Lords, May 23, 1944.

the silver coins disappear. Only those silver coins which were much worn by usage or in any other way defaced or reduced in weight remained in current use; it did not pay to export and to sell them on the bullion market. Thus England got the gold standard against the intention of its government. Only much later the laws made the *de facto* gold standard a *de jure* standard. The government abandoned further fruitless attempts to pump silver standard coins into the market and minted silver only as subsidiary coins with a limited legal tender power. These subsidiary coins were not money, but money-substitutes. Their exchange value depended not on their silver content, but on the fact that they could be exchanged at every instant, without delay and without cost, at their full face value against gold. They were *de facto* silver printed notes, claims against a definite amount of gold.

Later in the course of the nineteenth century the double standard resulted in a similar way in France and in the other countries of the Latin Monetary Union in the emergence of *de facto* gold monometallism. When the drop in the price of silver in the later 'seventies would automatically have effected the replacement of the *de facto* gold standard by the *de facto* silver standard, these governments suspended the coinage of silver in order to preserve the gold standard. In the United States the price structure on the bullion market had already, before the outbreak of the Civil War, transformed the legal bimetallism into *de facto* gold monometallism. After the greenback period there ensued a struggle between the friends of the gold standard on the one hand and those of silver on the other hand. The result was a victory for the gold standard. Once the economically most advanced nations had adopted the gold standard, all other nations followed suit. After the great inflationary adventures of the first World War most countries hastened to return to the gold standard or the gold exchange standard.

The gold standard was the world standard of the age of capitalism, increasing welfare, liberty, and democracy, both political and economic. In the eyes of the free traders its main eminence was precisely the fact that it was an international standard as required by international trade and the transactions of the international money and capital market.²⁹ It was the medium of exchange by means of which Western industrialism and Western capital had borne Western civilization into the remotest parts of the earth's surface, everywhere destroying the fetters of age-old prejudices and superstitions, sowing the seeds of new life and new well-being, freeing minds and

29.T. E. Gregory, *The Gold Standard and Its Future* (1d ed. London, 1934), pp. 22 ff.

souls, and creating riches unheard of before. It accompanied the triumphal unprecedented progress of Western liberalism ready to unite all nations into a community of free nations peacefully cooperating with one another.

It is easy to understand why people viewed the gold standard as the symbol of this greatest and most beneficial of all historical changes. All those intent upon sabotaging the evolution toward welfare, peace, freedom, and democracy loathed the gold standard, and not only on account of its economic significance. In their eyes the gold standard was the labarum, the symbol, of all those doctrines and policies they wanted to destroy. In the struggle against the gold standard much more was at stake than commodity prices and foreign exchange rates.

The nationalists are fighting the gold standard because they want to sever their countries from the world market and to establish national autarky as far as possible. Interventionist governments and pressure groups are fighting the gold standard because they consider it the most serious obstacle to their endeavors to manipulate prices and wage rates. But the most fanatical attacks against gold are made by those intent upon credit expansion. With them credit expansion is the panacea for all economic ills. It could lower or even entirely abolish interest rates, raise wages and prices for the benefit of all except the parasitic capitalists and the exploiting employers, free the state from the necessity of balancing its budget—in short, make all decent people prosperous and happy. Only the gold standard, that devilish contrivance of the wicked and stupid “orthodox” economists, prevents mankind from attaining everlasting prosperity.

The gold standard is certainly not a perfect or ideal standard. There is no such thing as perfection in human things. But nobody is in a position to tell us how something more satisfactory could be put in place of the gold standard. The purchasing power of gold is not stable. But the very notions of stability and unchangeability of purchasing power are absurd. In a living and changing world there cannot be any such thing as stability of purchasing power. In the imaginary construction of an evenly rotating economy there is no room left for a medium of exchange. It is an essential feature of money that its purchasing power is changing. In fact, the adversaries of the gold standard do not want to make money's purchasing power stable. They want rather to give to the governments the power to manipulate purchasing power without being hindered by an “external” factor, namely, the money relation of the gold standard.

The main objection raised against the gold standard is that it makes operative in the determination of prices a factor which no government can control—the vicissitudes of gold production. Thus an “external” or “auto-

matic" force restrains a national government's power to make its subjects as prosperous as it would like to make them. The international capitalists dictate and the nation's sovereignty becomes a sham.

However, the futility of interventionist policies has nothing at all to do with monetary matters. It will be shown later why all isolated measures of government interference with market phenomena must fail to attain the ends sought. If the interventionist government wants to remedy the shortcomings of its first interferences by going further and further, it finally converts its country's economic system into socialism of the German pattern. Then it abolishes the domestic market altogether, and with it money and all monetary problems, even though it may retain some of the terms and labels of the market economy.³⁰ In both cases it is not the gold standard that frustrates the good intentions of the benevolent authority.

The significance of the fact that the gold standard makes the increase in the supply of gold depend upon the profitability of producing gold is, of course, that it limits the government's power to resort to inflation. The gold standard makes the determination of money's purchasing power independent of the changing ambitions and doctrines of political parties and pressure groups. This is not a defect of the gold standard; it is its main excellence. Every method of manipulating purchasing power is by necessity arbitrary. All methods recommended for the discovery of an allegedly objective and "scientific" yardstick for monetary manipulation are based on the illusion that changes in purchasing power can be "measured." The gold standard removes the determination of cash-induced changes in purchasing power from the political arena. Its general acceptance requires the acknowledgment of the truth that one cannot make all people richer by printing money. The abhorrence of the gold standard is inspired by the superstition that omnipotent governments can create wealth out of little scraps of paper.

It has been asserted that the gold standard too is a manipulated standard. The governments may influence the height of gold's purchasing power either by credit expansion, even if it is kept within the limits drawn by considerations of preserving the redeemability of the money-substitutes, or indirectly by furthering measures which induce people to restrict the size of their cash holdings. This is true. It cannot be denied that the rise in commodity prices which occurred between 1896 and 1914 was to a great extent provoked by such government policies. But the main thing is that the gold standard keeps all such endeavors toward lowering money's purchasing power within narrow limits. The infla-

30.Cf. below, Chapters XXVII-XXXI.

tionists are fighting the gold standard precisely because they consider these limits a serious obstacle to the realization of their plans.

What the expansionists call the defects of the gold standard are indeed its very eminence and usefulness. It checks large-scale inflationary ventures on the part of governments. The gold standard did not fail. The governments were eager to destroy it, because they were committed to the fallacies that credit expansion is an appropriate means of lowering the rate of interest and of "improving" the balance of trade.

No government is, however, powerful enough to abolish the gold standard. Gold is the money of international trade and of the supernational economic community of mankind. It cannot be affected by measures of governments whose sovereignty is limited to definite countries. As long as a country is not economically self-sufficient in the strict sense of the term, as long as there are still some loopholes left in the walls by which national governments try to isolate their countries from the rest of the world, gold is still used as money. It does not matter that governments confiscate the gold coins and bullion they can seize and punish those holding gold as felons. The language of bilateral clearing agreements by means of which governments are intent upon eliminating gold from international trade, avoids any reference to gold. But the turnovers performed on the ground of those agreements are calculated on gold prices. He who buys or sells on a foreign market calculates the advantages and disadvantages of such transactions in gold. In spite of the fact that a country has severed its local currency from any link with gold, its domestic structure of prices remains closely connected with gold and the gold prices of the world market. If a government wants to sever its domestic price structure from that of the world market, it must resort to other measures, such as prohibitive import and export duties and embargoes. Nationalization of foreign trade, whether effected openly or directly by foreign exchange control, does not eliminate gold. The governments qua traders are trading by the use of gold as a medium of exchange.

The struggle against gold which is one of the main concerns of all contemporary governments must not be looked upon as an isolated phenomenon. It is but one item in the gigantic process of destruction which is the mark of our time. People fight the gold standard because they want to substitute national autarky for free trade, war for peace, totalitarian government omnipotence for liberty.

It may happen one day that technology will discover a method of enlarging the supply of gold at such a low cost that gold will become useless for the monetary service. Then people will have to replace the gold standard by

another standard. It is futile to bother today about the way in which this problem will be solved. We do not know anything about the conditions under which the decision will have to be made.

International Monetary Cooperation

The international gold standard works without any action on the part of governments. It is effective real cooperation of all members of the world-embracing market economy. There is no need for any government to interfere in order to make the gold standard work as an international standard.

What governments call international monetary cooperation is concerted action for the sake of credit expansion. They have learned that credit expansion, when limited to one country only, results in an external drain. They believe that it is only the external drain that frustrates their plans of lowering the rate of interest and thus of creating an everlasting boom. If all governments were to cooperate in their expansionist policies, they think, they could remove this obstacle. What is required is an international bank issuing fiduciary media which are dealt with as money-substitutes by all people in all countries.

There is no need to stress again here the point that what makes it impossible to lower the rate of interest by means of credit expansion is not merely the external drain. This fundamental issue is dealt with exhaustively in other chapters and sections of this book.³¹

But there is another important question to be raised.

Let us assume that there exists an international bank issuing fiduciary media the clientele of which is the world's whole population. It does not matter whether these money-substitutes go directly into the cash holdings of the individuals and firms, or are only kept by the various nations' central banks as reserves against the issuance of national money-substitutes. The deciding point is that there is a uniform world currency. The national banknotes and checkbook money are redeemable in money-substitutes issued by the international bank. The necessity of keeping its national currency at par with the international currency limits the power of every nation's central banking system to expand credit. But the world bank is restrained only by those factors which limit credit expansion on the part of a single bank operation in an isolated economic system or in the whole world.

We may as well assume that the international bank is not a bank issuing money-substitutes a part of which are fiduciary media, but a world authority issuing international fiat money. Gold has been entirely demonetized. The only money in use is that created by the international authority. The international authority is free to increase the quantity of this money provided it does not go so far as to bring about the crack-up boom and the breakdown of the currency.

Then the ideal of the Keynesians is realized. There is an institution

31.Cf. above, pp. 441-442, and below, pp. 550-586.

operating which can exercise an "expansionist pressure on world trade."

However, the champions of such plans have neglected a fundamental problem, namely, that of the distribution of the additional quantities of this credit money or of this paper money.

Let us assume that the international authority increases the amount of its issuance by a definite sum, all of which goes to one country, Ruritania. The final result of this inflationary action will be a rise in prices of commodities and services all over the world. but while this process is going on, the conditions of the citizens of various countries are affected in a different way. The Ruritanians are the first group blessed by the additional manna. They have more money in their pockets while the rest of the world's inhabitants have not yet got a share of the new money. They can bid higher prices, while the others cannot. Therefore the Ruritanians withdraw more goods from the world market than they did before. The non-Ruritanians are forced to restrict their consumption because they cannot compete with the higher prices paid by the Ruritanians. While the process of adjusting prices to the altered money relation is still in progress, the Ruritanians are in an advantageous position against the non-Ruritanians. When the process finally comes to an end, the Ruritanians have been enriched at the expense of the non-Ruritanians.

The main problem in such expansionist ventures is the proportion according to which the additional money is to be allotted to the various nations. Each nation will be eager to advocate a mode of distribution which will give it the greatest possible share in the additional currency. The industrially backward nations of the East will, for instance, probably recommend equal distribution per capita of population, a mode which would obviously favor them at the expense of the industrially advanced nations. Whatever mode may be adopted, all nations would be dissatisfied and would complain of unfair treatment. Serious conflicts would ensue and would disrupt the whole scheme.

It would be irrelevant to object that this problem did not play an important role in the negotiations which preceded the establishment of the International Monetary Fund and that it was easy to reach an agreement concerning the use of the Fund's resources. The Bretton Woods Conference was held under very particular circumstances. Most of the participating nations were at that time entirely dependent on the benevolence of the United States. They would have been doomed if the United States had stopped fighting for their freedom and aiding them materially by lend-lease. The government of the United States, on the other hand, looked upon the monetary agreement as a scheme for a disguised continuation of lend-lease after the cessation of hostilities. The United States was ready to give and the other participants—especially those of the European countries, most of them at that time still

occupied by the German armies, and those of the Asiatic countries—were ready to take whatever was offered to them. The problems involved will become discernible once the delusive attitude of the United States toward financial and trade matters is replaced by a more realistic mentality.

The International Monetary Fund did not achieve what its sponsors had expected. At the annual meetings of the Fund there is a good deal of discussion, and occasionally pertinent observations and criticisms concerning the monetary and credit policies of governments and central banks are brought forward. The Fund itself engages in lending and borrowing transactions with various governments and central banks. It considers its main function to be that of assisting governments to maintain an unrealistic exchange rate for their overexpanded national currency. The methods it resorts to in these endeavors do not differ essentially from those always applied for this purpose. Monetary affairs in the world are going on as if no Bretton Woods Agreement and no International Monetary Fund existed.

The constellation of the world's political and economic affairs enabled the American government to keep its promise of letting foreign governments and central banks get an ounce of gold by paying thirty-five dollars. But the continuation and intensification of the American "expansionist" policy has considerably increased the withdrawal of gold and makes people worry about the future of monetary conditions. They are frightened by the spectre of a farther increase in the demand for gold that may exhaust the gold funds of the United States and force it to abandon its present methods of dealing with gold.

The characteristic feature of the public discussion of the problems involved is that it carefully avoids mentioning the facts that are causing the extension of the demand for gold. No reference is made to the policies of deficit spending and credit expansion. Instead, complaints are raised about something called "insufficient liquidity" and a shortage of "reserves." The remedy suggested is more liquidity, to be achieved by "creating" new additional "reserves." This means it is proposed to cure the effects of inflation by more inflation.

There is need to remember that the policies of the American government and the Bank of England of maintaining on the London gold market a price of 35 dollars for an ounce of gold is the only measure that today prevents the Western nations from embarking upon boundless inflation. These policies are not immediately affected by the size of the various nations' "reserves." The plans for new "reserves" seem therefore not to concern directly the problem to the relation of gold to the dollar. They concern it indirectly as they try to divert the public's attention from the real problem, inflation. For the rest, the official doctrine relies upon the long since discredited balance of payments interpretation of monetary troubles.

XVIII. ACTION IN THE PASSING OF TIME

1. Perspective in the Valuation of Time Periods

ACTING man distinguishes the time before satisfaction of a want is attained and the time for which the satisfaction continues.

Action always aims at the removal of future uneasiness, be it only the future of the impending instant. Between the setting in of action and the attainment of the end sought there always elapses a fraction of time, viz., the maturing time in which the seed sown by the action grows to maturity. The most obvious example is provided by agriculture. Between the tilling of the soil and the ripening of the fruit there passes a considerable period of time. Another example is the improvement of the quality of wine by aging. In some cases, however, the maturing time is so short that ordinary speech may assert that the success appears instantly.

As far as action requires the employment of labor, it is concerned with the working time. The performance of every kind of labor absorbs time. In some cases the working time is so short that people say the performance requires no time at all.

Only in rare cases does a simple, indivisible and nonrepeated act suffice to attain the end aimed at. As a rule what separates the actor from the goal of his endeavors is more than one step only. He must make many steps. And every further step to be added to those previously made raises anew the question whether or not he should continue marching toward the goal once chosen. Most goals are so far away that only determined persistence leads to them. Persevering action, unflinchingly directed to the end sought, is needed in order to succeed. The total expenditure of time required, i.e., working time plus maturing time, may be called the period of production. The period of production is long in some cases and short in other cases. It is sometimes so short that it can be entirely neglected in practice.

The increment in want-satisfaction which the attainment of the end brings about is temporally limited. The result produced extends services only over a period of time which we may call the duration of serviceableness. The duration of serviceableness is shorter with some products and longer with

other goods which are commonly called durable goods. Hence acting man must always take into account the period of production and the duration of serviceableness of the product. In estimating the disutility of a project considered he is not only concerned with the expenditure of material factors and labor required, but also with the period of production. In estimating the utility of the expected product he is concerned with the duration of its serviceableness. Of course, the more durable a product is, the greater is the amount of services it renders. But if these services are not cumulatively available on the same date, but extended piecemeal over a certain period of time, the time element, as will be shown, plays a particular role in their evaluation. It makes a difference whether n units of service are rendered on the same date or whether they are stretched over a period of n days in such a way that only one unit is available daily.

It is important to realize that the period of production as well as the duration of serviceableness are categories of human action and not concepts constructed by philosophers, economists, and historians as mental tools for their interpretation of events. They are essential elements present in every act of reasoning that precedes and directs action. It is necessary to stress this point because Bohm-Bawerk, to whom economics owes the discovery of the role played by the period of production, failed to comprehend the difference.

Acting man does not look at his condition with the eyes of a historian. He is not concerned with how the present situation originated. His only concern is to make the best use of the means available today for the best possible removal of future uneasiness. The past does not count for him. He has at his disposal a definite quantity of material factors of production. He does not ask whether these factors are nature-given or the product of production processes accomplished in the past. It does not matter for him how great a quantity of nature-given, i.e., original material factors of production and labor, was expended in their production and how much time these processes of production have absorbed. He values the available means exclusively from the aspect of the services they can render him in his endeavors to make future conditions more satisfactory. The period of production and the duration of serviceableness are for him categories in planning future action, not concepts of academic retrospection and historical research. They play a role in so far as the actor has to choose between periods of production of different length and between the production of more durable and less durable goods.

Action is not concerned with the future in general, but always with a

definite and limited fraction of the future. This fraction is limited, on the one side, by the instant in which the action must take place. Where its other end lies depends on the actor's decision and choice. There are people who are concerned with only the impending instant. There are other people whose provident care stretches far beyond the prospective length of their own life. We may call the fraction of future time for which the actor in a definite action wants to provide in some way and to some extent, the period of provision. In the same way in which acting man chooses among various kinds of want-satisfaction within the same fraction of future time, he chooses also between want-satisfaction in the nearer and in the remoter future. Every choice implies also a choice of a period of provision. In making up his mind how to employ the various means available for the removal of uneasiness, man also determines implicitly the period of provision. In the market economy the demand of the consumers also determines the length of the period of provision.

There are various methods available for a lengthening of the period of provision:

1. The accumulation of larger stocks of consumers' goods destined for later consumption.
2. The production of goods which are more durable.
3. The production of goods requiring a longer period of production.
4. The choice of methods of production consuming more time for the production of goods which could also be produced within a shorter period of production.

The first two methods do not require any further comment. the third and the fourth methods must be scrutinized more closely.

It is one of the fundamental data of human life and action that the shortest processes of production, i.e., those with the shortest period of production, do not remove felt uneasiness entirely. If all those goods which these shortest processes can provide are produced, unsatisfied wants remain and incentive to further action is still present. As acting man prefers those processes which, other things being equal, produce the products in the shortest time,¹ only such processes are left for further action which consume more time. People embark upon these more time-consuming processes because they value the increment in satisfaction expected more highly than the disadvantage of waiting longer for their fruits. Bohm-Bawerk speaks of the higher productivity of roundabout ways of production requiring more time. It is more appropriate to speak of the higher physical productivity of production

1. Why man proceeds in this way, will be shown on the following pages.

processes requiring more time. The higher productivity of these processes does not always consist in the fact that they produce—with the same quantity of factors of production expended—a greater quantity of products. More often it consists in the fact that they produce products which could not be produced at all in shorter periods of production. These processes are not roundabout processes. They are the shortest and quickest way to the goal chosen. If one wants to catch more fish, there is no other method available than the substitution of fishing with the aid of nets and canoes for fishing without the aid of this equipment. There is no better, shorter, and cheaper method for the production of aspirin known than that adopted by the chemical plants. If one disregards error and ignorance, there cannot be any doubt about the highest productivity and expediency of the processes chosen. If people had not considered them the most direct processes, viz., those leading by the shortest way to the end sought, they would not have adopted them.

The lengthening of the period of provision through the mere accumulation of stocks of consumers' goods is the outcome of the desire to provide in advance for a longer period of time. The same is valid for the production of goods the durability of which is greater in proportion to the greater expenditure of factors of production required.² But if temporally remoter goals are aimed at, lengthening of the period of production is a necessary corollary of the venture. The end sought cannot be attained in a shorter period of production.

The postponement of an act of consumption means that the individual prefers the satisfaction which later consumption will provide to the satisfaction which immediate consumption could provide. The choice of a longer period of production means that the actor values the product of the process bearing fruit only at a later date more highly than the products which a process consuming less time could provide. In such deliberations and the resulting choices the period of production appears as waiting time. It was the great contribution of Jevons and Bohm-Bawerk to have shown the role played by taking account of waiting time.

If acting men were not to pay heed to the length of the waiting time, they would never say that a goal is temporally so distant that one cannot consider aiming at it. Faced with the alternative of choosing between two processes of production which render different output with the same input, they would always prefer that process which renders the greater quantity of the same

2. If the lengthening of durability were not at least proportionate to the increment in expenditure needed, it would be more advantageous to increase the quantity of units of a shorter durability.

products or better products in the same quantity, even if this result could be attained only by lengthening the period of production. Increments in input which result in a more than proportionate increase in the products' duration of serviceability would unconditionally be deemed advantageous. The fact that men do not act in this way evidences that they value fractions of time of the same length in a different way according as they are nearer or remoter from the instant of the actor's decision. Other things being equal, satisfaction in a nearer period of the future is preferred to satisfaction in a more distant period; disutility is seen in waiting.

This fact is already implied in the statement stressed in the opening of this chapter that man distinguishes the time before satisfaction is attained and the time for the duration of which there is satisfaction. If any role at all is played by the time element in human life, there cannot be any question of equal valuation of nearer and remoter periods of the same length. Such an equal valuation would mean that people do not care whether success is attained sooner or later. It would be tantamount to a complete elimination of the time element from the process of valuation.

The mere fact that goods with a longer duration of serviceability are valued more highly than those with a shorter duration does not yet in itself imply a consideration of time. A roof that can protect a house against the weather during a period of ten years is more valuable than a roof which renders this service only for a period of five years. The quantity of service rendered is different in both cases. But the question which we have to deal with is whether or not an actor in making his choices attaches to a service to be available in a later period of the future the same value he attaches to a service available at an earlier period.

2. Time Preference as an Essential Requisite of Action

The answer to this question is that acting man does not appraise time periods merely with regard to their dimensions. His choices regarding the removal of future uneasiness are directed by the categories *sooner* and *later*. Time for man is not a homogeneous substance of which only length counts. It is not a *more* or a *less* in dimension. It is an irreversible flux the fractions of which appear in different perspective according to whether they are nearer to or remoter from the instant of valuation and decision. Satisfaction of a want in the nearer future is, other things being equal, preferred to that in the farther distant future. Present goods are more valuable than future goods.

Time preference is a categorial requisite of human action. No mode of action can be thought of in which satisfaction within a nearer period of the future is not—other things being equal—preferred to that in a later period. The very act of gratifying a desire implies that gratification at the present instant is preferred to that at a later instant. He who consumes a nonperishable good instead of postponing consumption for an indefinite later moment thereby reveals a higher valuation of present satisfaction as compared with later satisfaction. If he were not to prefer satisfaction in a nearer period of the future to that in a remoter period, he would never consume and so satisfy wants. He would always accumulate, he would never consume and enjoy. He would not consume today, but he would not consume tomorrow either, as the morrow would confront him with the same alternative.

Not only the first step toward want-satisfaction, but also any further step is guided by time preference. Once the desire *a* to which the scale of values assigns the rank 1 is satisfied, one must choose between the desire *b* to which the rank 2 is assigned and *c* that desire of tomorrow to which—in the absence of time preference—the rank 1 would have been assigned. If *b* is preferred to *c*, the choice clearly involves time preference. Purposive striving after want-satisfaction must needs be guided by a preference for satisfaction in the nearer future over that in a remoter future.

The conditions under which modern man of the capitalist West must act are different from those under which his primitive ancestors lived and acted. As a result of the providential care of our forebears we have at our disposal an ample stock of intermediate products (capital goods or produced factors of production) and of consumers' goods. Our activities are designed for a longer period of provision because we are the lucky heirs of a past which has lengthened, step by step, the period of provision and has bequeathed to us the means to expand the waiting period. In acting we are concerned with longer periods and are aiming at an even satisfaction in all parts of the period chosen as the period of provision. We are in a position to rely upon a continuing influx of consumers' goods and have at our disposal not only stocks of goods ready for consumption but also stocks of producers' goods out of which our continuous efforts again and again make new consumers' goods mature. In our dealing with this increasing "stream of income," says the superficial observer, there is no heed paid to any considerations related to a different valuation of present and of future goods. We synchronize, he asserts, and thus the time element loses any importance for the conduct of affairs. It is, therefore, pointless, he continues, in the interpretation of

modern conditions to resort to time preference.

The fundamental error involved in this popular objection is caused, like so many other errors, by a lamentable misapprehension of the imaginary construction of the evenly rotating economy. In the frame of this imaginary construction no change occurs; their prevails an unvarying course of all affairs. In the evenly rotating economy consequently nothing is altered in the allocation of goods for the satisfaction of wants in nearer and in remoter periods of the future. No one plans any change because—according to our assumptions—the prevailing allocation best serves him and because he does not believe that any possible rearrangement could improve his condition. No one wants to increase his consumption in a nearer period of the future at the expense of his consumption in a more distant period or vice versa because the existing mode of allocation pleases him better than any other thinkable and feasible mode.

The praxeological distinction between capital and income is a category of thought based on a different valuation of want-satisfaction in various periods of the future. In the imaginary construction of the evenly rotating economy it is implied that the whole income but not more than the income is consumed and that therefore the capital remains unchanged. An equilibrium is reached in the allocation of goods for want-satisfaction in different periods of the future. It is permissible to describe this state of affairs by asserting that nobody wants to consume tomorrow's income today. We have precisely designed the imaginary construction of the evenly rotating economy in such a way as to make it fit just this condition. But it is necessary to realize that we can assert with the same apodictic assurance that, in the evenly rotating economy, nobody wants to have more of any commodity than he really has. These statements are true with regard to the evenly rotating economy because they are implied in our definition of this imaginary construction. They are nonsensical when asserted with regard to a changing economy which is the only real economy. as soon as a change in the data occurs, the individuals are faced anew with the necessity of choosing both between various modes of want-satisfaction in the same period and between want-satisfaction in different periods. An increment can be either employed for immediate consumption or invested for further production. No matter how the actors employ it, their choice must needs be the result of a weighing of the advantages expected from want-satisfaction in different periods of the future. In the world of reality, in the living and changing universe, each individual in each of his actions is forced to choose between

satisfaction in various periods of time. Some people consume all that they earn, others consume a part of their capital, others save a part of their income.

Those contesting the universal validity of time preference fail to explain why a man does not always invest a sum of 100 dollars available today, although these 100 dollars would increase to 104 dollars within a year's time. It is obvious that this man in consuming this sum today is determined by a judgment of value which values 100 present dollars higher than 104 dollars available a year later. But even in case he chooses to invest these 100 dollars, the meaning is not that he prefers satisfaction in a later period to that of today. It means that he values 100 dollars today less than 104 dollars a year later. Every penny spent today is, precisely under the conditions of a capitalist economy in which institutions make it possible to invest even the smallest sums, a proof of the higher valuation of present satisfaction as compared with later satisfaction.

The theorem of time preference must be demonstrated in a double way. first for the case of plain saving in which people must choose between the immediate consumption of a quantity of goods and the later consumption of the same quantity. Second for the case of capitalist saving in which the choice is to be made between the immediate consumption of a quantity of goods and the later consumption either of a greater quantity or of goods which are fit to provide a satisfaction which—except for the difference in time—is valued more highly. The proof has been given for both cases. No other case is thinkable.

It is possible to search for a psychological understanding of the problem of time preference. Impatience and the pains caused by waiting are certainly psychological phenomena. One may approach their elucidation by referring to the temporal limitations of human life, to the individual's coming into existence, his growth and maturing, and his inevitable decay and passing away. There is in the course of a man's life a right moment for everything as well as a *too early* and *to late*. However, the praxeological problem is in no way related to psychological issues. We must conceive, not merely understand. We must conceive that a man who does not prefer satisfaction within a nearer period of the future to that in a remoter period would never achieve consumption and enjoyment at all.

Neither must the praxeological problem be confused with the physiological. He who wants to live to see the later day, must first of all care for the preservation of his life in the intermediate period. Survival and appeasement of vital needs are thus requirements for the satisfaction of any wants in the remoter future. This makes us understand why in all those situations in which

bare life in the strict sense of the term is at stake satisfaction in the nearer future is preferred to that in later periods. But we are dealing with action as such, not with the motives directing its course. In the same way in which as economists we do not ask why albumin, carbohydrates, and fat are demanded by man, we do not inquire why the satisfaction of vital needs appears imperative and does not brook any delay. We must conceive that consumption and enjoyment of any kind presuppose a preference for present satisfaction to later satisfaction. The knowledge provided by this insight far exceeds the orbit for which the physiological facts concerned provide explanation. It refers to every kind of want-satisfaction, not only to the satisfaction of the vital necessities of mere survival.

It is important to stress this point because the term "supply of subsistence, available for advances of subsistence," as used by Bohm-Bawerk, can easily be misinterpreted. It is certainly one of the tasks of this stock to provide the means for a satisfaction of the bare necessities of life and thus to secure survival. But besides it must be large enough to satisfy, beyond the requirements of necessary maintenance for the waiting time, all those wants and desires which-apart from mere survival-are considered more urgent than the harvesting of the physically more abundant fruits of production processes consuming more time.

Bohm-Bawerk declared that every lengthening of the period of production depends on the condition that "a sufficient quantity of present goods is available to make it possible to overbridge the lengthened average interval between the starting of preparatory work and the harvesting of its product."³ The expression "sufficient quantity" needs elucidation. It does not mean a quantity sufficient for necessary sustenance. The quantity in question must be large enough to secure the satisfaction of all those wants the satisfaction of which during the waiting time is considered more urgent than the advantages which a still greater lengthening of the period of production would provide. If the quantity in question were smaller, a shortening of the period of production would appear advantageous; the increase in the quantity of products or the improvement of their quality to be expected from the preservation of the longer period of production would no longer be considered a sufficient remuneration for the restriction of consumption enjoined during the waiting time. Whether or not the supply of subsistence is sufficient, does not depend on any physiological or other facts open to objective

3. Bohm-Bawerk. *Kleinere Abhandlungen über Kapital und Zins*, vol. II in *Gesammelte Schriften*, ed. F. X. Weiss (Vienna, 1926), p. 169.

determination by the methods of technology and physiology. The metaphorical term "overbridge," suggesting a body of water the breadth of which poses to bridge builder an objectively determined task, is misleading. The quantity in question is valued by men, and their subjective judgments decide whether or not it is sufficient.

Even in a hypothetical world in which nature provides every man with the means for the preservation of biological survival (in the strict sense of the term), in which the most important foodstuffs are not scarce and action is not concerned with the provision for bare life, the phenomenon of time preference would be present and direct all actions.⁴

Observations on the Evolution of the Time-Preference Theory

It seems plausible to assume that the mere fact that interest is graduated in reference to periods of time should have directed the attention of the economists, intent upon developing a theory of interest, upon the role played by time. However, the classical economists were prevented by their faulty theory of value and their misconstruction of the cost concept from recognizing the significance of the time element.

Economics owes the time-preference theory to William Stanley Jevons and its elaboration, most of all, to Eugen von Bohm-Bawerk. Bohm-Bawerk was the first to formulate correctly the problem to be solved, the first to unmask the fallacies implied in the productivity theories of interest, and the first to stress the role played by the period of production. But he did not entirely succeed in avoiding the pitfalls in the elucidation of the interest problem. His demonstration of the universal validity of time preference is inadequate because it is based on psychological considerations. However, psychology can never demonstrate the validity of a praxeological theorem. It may show that some people or many people let themselves be influenced by certain motives. It can never make evident that all human action is necessarily dominated by a definite categorial element which, without any exception, is operative in every instance of action.⁵

The second shortcoming of Bohm-Bawerk's reasoning was his misconstruction of the concept of the period of production. He was not fully aware of the fact that the period of production is a praxeological category and that the role it plays in action consists entirely in the choices acting man makes between periods of production of different length. The length of time

4. Time preference is not specifically human. It is an inherent feature of the behavior of all living things. The distinction of man consists in the very fact that with him time preference is not inexorable and the lengthening of the period of provision not merely instinctive as with certain animals that store food, but the result of a process of valuation.

5. For a detailed critical analysis of this part of Bohm-Bawerk's reasoning the reader is referred to Mises, *Nationalökonomie*, pp. 439-443.

expended in the past for the production of capital goods available today does not count at all. These capital goods are valued only with regard to their usefulness for future want-satisfaction. The "average period of production" is an empty concept. What determines action is the fact that in choosing among various ways which can remove future uneasiness the length of the waiting time in each case is a necessary element.

It was an outcome of these two errors that Bohm-Bawerk in the elaboration of his theory did not entirely avoid the productivity approach which he himself had so brilliantly refuted in his critical history of the doctrines of capital and interest.

These observations do not detract at all from the imperishable merits of Bohm-Bawerk's contributions. It was on the foundation laid by him that later economists—foremost among them Knut Wicksell, Frank Albert Fetter and Irving Fisher—were successful in perfecting the time-preference theory.

It is customary to express the essence of the time-preference theory by saying that there prevails a preference for present over future goods. In dealing with this mode of expression some economists have been puzzled by the fact that in some cases present uses are worth less than future uses. However, the problem raised by the apparent exceptions is caused merely by a misapprehension of the true state of affairs.

There are enjoyments which cannot be had at the same time. A man cannot on the same evening attend performances of *Carmen* and of *Hamlet*. In buying a ticket he must choose between the two performances. If tickets to both theaters for the same evening are presented to him as a gift, he must likewise choose. He may think with regard to the ticket which he refuses: "I don't care for it just now," or "If only it had been later."⁶ However, this does not mean that he prefers future goods to present goods. He does not have to choose between future goods and present goods. He must choose between two enjoyments both of which he cannot have together. This is the dilemma in every instance of choosing. In the present state of his affairs he may prefer *Hamlet* to *Carmen*. The different conditions of a later date may possibly result in another decision.

The second seeming exception is presented by the case of perishable goods. They may be available in abundance in one season of the year and may be scarce in other seasons. However, the difference between ice in winter and ice in summer is not that between a present good and a future good. It is the difference between a good that loses its specific usefulness even if not consumed and another good which requires a different process of production. Ice available in winter can only be used in summer when subjected to a special process of conservation. It is, in respect to ice utilizable in summer, at best one of the

6. Cf. F. A. Fetter, *Economic Principles* (New York, 1923), I, 239.

complementary factors required for production. It is impossible to increase the quantity of ice available in summer simply by restricting the consumption of ice in winter. The two things are for all practical purposes different commodities.

The case of the miser does not contradict the universal validity of time preference. The miser too, in spending some of his means for a scanty livelihood, prefers some amount of satisfaction in the nearer future to that in the remoter future. Extreme instances in which the miser denies himself even the indispensable minimum of food represent a pathological withering away of vital energy, as is the case with the man who abstains from eating out of fear of morbid germs, the man who commits suicide rather than meet a dangerous situation, and the man who cannot sleep because he is afraid of undetermined accidents which could befall him while asleep.

3. Capital Goods

As soon as those present wants are sated the satisfaction of which is considered more urgent than any provision for the morrow, people begin to save a part of the available supply of consumers' goods for later use. This postponement of consumption makes it possible to direct action toward temporally remoter ends. It is now feasible to aim at goals which could not be thought of before on account of the length of the period of production required. It is furthermore feasible to choose methods of production in which the output of products is greater per unit of input than in other methods requiring a shorter period of production. The sine qua non of any lengthening of the process of production adopted is saving, i.e., an excess of current production over current consumption. Saving is the first step on the way toward improvement of material well-being and toward every further progress on this way.

The postponement of consumption and the accumulation of stocks of consumers' goods destined for later consumption would be practiced even in the absence of the stimulus offered by the technological superiority of processes with a longer period of production. The higher productivity of such processes consuming more time strengthens considerably the propensity to save. The sacrifice made by restricting consumption in nearer periods of the future is henceforth not only counterbalanced by the expectation of consuming the saved goods in remoter periods; it also opens the way to a more ample supply in the remoter future and to the attainment of goods which could not be procured at all without this provisional sacrifice. If acting man, other conditions being equal, were not to prefer, without exception, consumption in the nearer future to that

in the remoter future, he would always save, never consume. What restricts the amount of saving and investment is time preference.

People eager to embark upon processes with a longer period of production must first accumulate, by means of saving, that quantity of consumers' goods which is needed to satisfy, during the waiting time, all those wants the satisfaction of which they consider more urgent than the increment in well-being expected from the more time-consuming process. Accumulation of capital begins with the formation of stocks of consumers' goods the consumption of which is postponed for later days. If these surpluses are merely stored and kept for later consumption, they are simply wealth or, more precisely, a reserve for rainy days and emergencies. They remain outside the orbit of production. They become integrated—economically, not physically—into production activities only when employed as means of subsistence of workers engaged in more time-consuming processes. If expended in this way, they are physically consumed. But economically they do not disappear. They are replaced first by the intermediary products of a process with a longer period of production and then later by the consumers' goods which are the final product of these processes.

All these ventures and processes are intellectually controlled by capital accounting, the acme of economic calculation in monetary terms. Without the aid of monetary calculation men could not even learn whether—apart from the length of the period of production—a definite process promises a higher productivity than another. The expenditures required by various processes cannot be weighed against one another without the aid of monetary terms. Capital accounting starts with the market prices of the capital goods available for further production, the sum of which it calls capital. It records every expenditure from this fund and the price of all incoming items induced by such expenditures. It establishes finally the ultimate outcome of all these transformations in the composition of the capital and thereby the success or the failure of the whole process. It shows not only the final result; it mirrors also every one of its intermediary stages. It produces interim balances for every day such a balance may be required and statements of profit and loss for every part or stage of the process. It is the indispensable compass of production in the market economy.

In the market economy production is a continuous, never-ending pursuit split up into an immense variety of partial processes. Innumerable processes of production with different periods of production are in progress simultaneously. They complement one another and at the same time are in rivalry

with one another in competing for scarce factors of production. Continuously either new capital is accumulated by saving or previously accumulated capital is eaten up by overconsumption. Production is distributed among numerous individual plants, farms, workshops, and enterprises each of which serves only limited purposes. The intermediary products or capital goods, the produced factors of further production, change hands in the course of events; they pass from one plant to another until finally the consumers' goods reach those who use and enjoy them. The social process of production never stops. At each instant numberless processes are in progress some of which are nearer to, some remoter from, the achievement of their special tasks.

Every single performance in this ceaseless pursuit of wealth production is based upon the saving and the preparatory work of earlier generations. We are the lucky heirs of our fathers and forefathers whose saving has accumulated the capital goods with the aid of which we are working today. We favorite children of the age of electricity still derive advantage from the original saving of the primitive fishermen who, in producing the first nets and canoes, devoted a part of their working time to provision for a remoter future. If the sons of these legendary fishermen had worn out these intermediary products—nets and canoes—without replacing them by new ones, they would have consumed capital and the process of saving and capital accumulation would have had to start afresh. We are better off than earlier generations because we are equipped with the capital goods they have accumulated for us.⁷

The businessman, the acting man, is entirely absorbed in one task only: to take best advantage of all the means available for the improvement of future conditions. He does not look at the present state of affairs with the aim of analyzing and comprehending it. In classifying the means for further production and appraising their importance he adopts superficial rules of thumb. He distinguishes three classes of factors of production: the nature-given material factors, the human factor—labor, and capital goods—the intermediary factors produced in the past. He does not analyze the nature of the capital goods. They are in his eyes means of increasing the productivity of labor. Quite naively he ascribes to them productive power of their own. He does not trace their instrumentality back to nature and labor. He does not ask how they came into

7. These considerations explode the objections raised against the time-preference theory by Frank H. Knight in his article, "Capital, Time and the Interest Rate," *Economica*, n.s., I, 257-286.

existence. They count only as far as they may contribute to the success of his efforts.

This mode of reasoning is all right for the businessman. But it was a serious mistake for the economists to agree with the businessman's superficial view. They erred in classifying "capital" as an independent factor of production along with the nature-given material resources and labor. The capital goods—the factors of further production produced in the past—are not an independent factor. They are the joint products of the cooperation of the two original factors—nature and labor—expended in the past. They have no productive power of their own.

Neither is it correct to call the capital goods labor and nature stored up. They are rather labor, nature, and time stored up. The difference between production without the aid of capital goods and that assisted by the employment of capital goods consists in time. Capital goods are intermediary stations on the way leading from the very beginning of production to its final goal, the turning out of consumers' goods. He who produces with the aid of capital goods enjoys one great advantage over the man who starts without capital goods; he is nearer in time to the ultimate goal of his endeavors.

There is no question of an alleged productivity of capital goods. The difference between the price of a capital good, e.g., a machine, and the sum of the prices of the complementary original factors of production required for its reproduction is entirely due to the time difference. He who employs the machine is nearer the goal of production. The period of production is shorter for him than for a competitor who must start from the beginning. In buying a machine he buys the original factors of production that were expended in producing it plus time, i.e., the time by which his period of production is shortened.

The value of time, i.e., time preference or the higher valuation of want-satisfaction in nearer periods of the future as against that in remoter periods, is an essential element in human action. It determines every choice and every action. There is no man for whom the difference between sooner and later does not count. The time element is instrumental in the formation of all prices of all commodities and services.

4. Period of Production, Waiting Time, and Period of Provision

If one were to measure the length of the period of production spent in the fabrication of the various goods available now, one would have to trace back their history to the point at which the first expenditure of original factors of

production took place. One would have to establish when natural resources and labor were first employed for processes which—besides contributing to the production of other goods—also contributed ultimately to the production of the good in question. The solution of this problem would require the solubility of the problem of physical imputation. It would be necessary to establish in quantitative terms to what extent tools, raw materials, and labor which directly or indirectly were used in the production of the good concerned contributed to the result. One would have to go back in these inquiries to the very origins of capital accumulation by saving on the part of people who previously lived from hand to mouth. It is not only practical difficulties which prevent such historical studies. The very insolubility of the problem of physical imputation stops us at the first step of such ventures.

Neither acting man himself nor economic theory needs a measurement of the time expended in the past for the production of goods available today. They would have no use for such data even if they knew them. Acting man is faced with the problem of how to take best advantage of the available supply of goods. He makes his choices in employing each part of this supply in such a way as to satisfy the most urgent of the not yet satisfied wants. For the achievement of this task he must know the length of the waiting time which separates him from the attainment of the various goals among which he has to choose. As has been pointed out and must be emphasized again, there is no need for him to look backward to the history of the various capital goods available. Acting man counts waiting time and the period of production always from today on. In the same way in which there is no need to know whether more or less labor and material factors of production have been expended in the production of the products available now, there is no need to know whether their production has absorbed more or less time. Things are valued exclusively from the point of view of the services they can render for the satisfaction of future wants. The actual sacrifices made and the time absorbed in their production are beside the point. These things belong to the dead past.

It is necessary to realize that all economic categories are related to human action and have nothing at all to do directly with the physical properties of things. Economics is not about goods and services; it is about human choice and action. The praxeological concept of time is not the concept of physics or biology. It refers to the *sooner* or the *later* as operative in the actors' judgments of value. The distinction between capital goods and consumers' goods is not a rigid distinction based on the physical and physiological

properties of the goods concerned. It depends on the position of the actors and the choices they have to make. The same goods can be looked upon as capital goods or as consumers' goods. A supply of goods ready for immediate enjoyment is capital goods from the point of view of a man who looks upon it as a means for his own sustenance and that of hired workers during a waiting time.

An increase in the quantity of capital goods available is a necessary condition for the adoption of processes in which the period of production and therefore waiting time are longer. If one wants to attain ends which are temporally farther away, one must resort to a longer period of production because it is impossible to attain the end sought in a shorter period of production. If one wants to resort to methods of production with which the quantity of output is higher per unit of input expended, one must lengthen the period of production. For the processes with which output is smaller per unit of input have been chosen only on account of the shorter period of production they require. But on the other hand, not every employment chosen for the utilization of capital goods accumulated by means of additional saving requires a process of production in which the period of production from today on to the maturing of the product is longer than with all processes already adopted previously. It may be that people, having satisfied their more urgent needs, now want goods which can be produced within a comparatively short period. The reason why these goods have not been produced previously was not that the period of production they require was deemed too long, but that there was a more urgent employment open for the factors required.

If one chooses to assert that every increase in the supply of capital goods available results in a lengthening of the period of production and of waiting time, one reasons in the following way: If *a* are the goods already previously produced and *b* the goods produced in the new processes started with the aid of the increase in capital goods, it is obvious that people had to wait longer for *a* and *b* than they had to wait for *a* alone. In order to produce *a* and *b* it was not only necessary to acquire the capital goods required for the production of *a*, but also those required for the production of *b*. If one had expended for an increase of immediate consumption the means of sustenance saved to make workers available for the production of *b*, one would have attained the satisfaction of some wants sooner.

The treatment of the capital problem customary with those economists who are opposed to the so-called "Austrian" view assumes that the technique employed in production is unalterably determined by the given state of

technological knowledge. The “Austrian” economists, on the other hand, show that it is the supply of capital goods available at each moment that determines which of the many known technological methods of production will be employed.⁸ The correctness of the “Austrian” point of view can easily be demonstrated by a scrutiny of the problem of relative scarcity of capital.

Let us look at the condition of a country suffering from such scarcity of capital. Take, for instance, the state of affairs in Rumania about 1860. What was lacking was certainly not technological knowledge. There was no secrecy concerning the technological methods practiced by the advanced nations of the West. They were described in innumerable books and taught at many schools. The elite of Rumanian youth had received full information about them at the technological universities of Austria, Switzerland, and France. Hundreds of foreign experts were ready to apply their knowledge and skill in Rumania. What was wanting were the capital goods needed for a transformation of the backward Rumanian apparatus of production, transportation, and communication according to Western patterns. If the aid granted to the Rumanians on the part of the advanced foreign nations had consisted merely in providing them with technological knowledge, they would have had to realize that it would take a very long time until they caught up with the West. The first thing for them to have done would have been to save in order to make workers and material factors of production available for the performance of more time-consuming processes. Only then could they successively produce the tools required for the construction of those plants which in the further course were to produce the equipment needed for the construction and operation of modern plants, farms, mines, railroads, telegraph lines, and buildings. Scores of decades would have passed until they had made up for the time lost. There would not have been any means of accelerating this process than by restricting current consumption as far as physiologically possible for the intermediary period.

However, things developed in a different way. The capitalist West lent to the backward countries the capital goods needed for an instantaneous transformation of a great part of their methods of production. It saved them time and made it possible for them to multiply very soon the productivity of

8. Cf. F. A. Hayek. *The Pure Theory of Capital* (London, 1941), p. 48. It is awkward indeed to attach to certain lines of thought national labels. As Hayek remarks pertinently (p. 47, n. 1), the classical English economists since Ricardo, and particularly J. S. Mill (the latter probably partly under the influence of J. Rae) were in some regards more “Austrian” than their recent Anglo-Saxon successors.

their labor. The effect for the Rumanians was that they could immediately enjoy the advantages derived from the modern technological procedures. It was as if they had started at a much earlier date to save and to accumulate capital goods.

Shortage of capital means that one is further away from the attainment of a goal sought than if one had started to aim at it at an earlier date. Because one neglected to do this in the past, the intermediary products are wanting, although the nature-given factors from which they are to be produced are available. Capital shortage is dearth of time. It is the effect of the fact that one was late in beginning the march toward the aim concerned. It is impossible to describe the advantages derived from capital goods available and the disadvantages resulting from the paucity of capital goods without resorting to the time element of *sooner* and *later*.⁹

To have capital goods at one's disposal is tantamount to being nearer to a goal aimed at. An increment in capital goods available makes it possible to attain temporally remoter ends without being forced to restrict consumption. A loss in capital goods, on the other hand, makes it necessary either to abstain from striving after certain goals which one could aim at before or to restrict consumption. To have capital goods means, other things being equal,¹⁰ a temporal gain. As against those who lack capital goods, the capitalist, under the given state of technological knowledge, is in a position to reach a definite goal sooner without restricting consumption and without increasing the input of labor and nature-given material factors of production. His head start is in time. A rival endowed with a smaller supply of capital goods can catch up only by restricting his consumption.

The start which the peoples of the West have gained over the other peoples consists in the fact that they have long since created the political and institutional conditions required for a smooth and by and large uninterrupted progress of the process of larger-scale saving, capital accumulation, and investment. Thus, by the middle of the nineteenth century, they had already attained a state of well-being which far surpassed that of races and nations less successful in substituting the ideas of acquisitive capitalism for those of predatory militarism. Left alone and unaided by foreign capital these backward peoples would have needed much more time to improve their methods of production, transportation, and communication.

9. Cf. W. S. Jevons, *The Theory of Political Economy* (4th ed. London, 1924), pp. 224-229.

10. This implies also equality in the quantity of nature-given factors available.

It is impossible to understand the course of world affairs and the development of the relations between West and East in the last centuries, if one does no comprehend the importance of this large-scale transfer of capital. The west has given to the East not only technological and therapeutical knowledge, but also the capital goods needed for an immediate practical application of this knowledge. These nations of Eastern Europe, Asia, and Africa have been able, thanks to the foreign capital imported, to reap the fruits of modern industry at an earlier date. They were to some extent relieved from the necessity of restricting their consumption in order to accumulate a sufficient stock of capital goods. This was the true nature of the alleged exploitation of the backward nations on the part of Western capitalism about which their nationalists and the Marxians lament. It was a fecundation of the economically backward nations by the wealth of the more advanced nations.

The benefits derived were mutual. What impelled the capitalists of the West to embark upon foreign investment was the demand on the part of the domestic consumers. Consumers asked for goods which could not be produced at all at home and for a cheapening of goods which could be produced at home only with rising costs. If the consumers of the capitalist West had behaved in a different way or if the institutional obstacles to capital export had proved insurmountable, no capital export would have occurred. There would have been more longitudinal expansion of domestic production instead of lateral expansion abroad.

It is not the task of catallactics but of history to deal with the consequences of the internationalization of the capital market, its working, and its final disintegration brought about by the expropriation policies adopted by the receiving countries. Catallactics has only to scrutinize the effects of a richer or poorer supply of capital goods. We compare the conditions of two isolated market systems *A* and *B*. Both are equal in size and population figures, the state of technological knowledge, and in natural resources. They differ from one another only in the supply of capital goods, this supply being larger in *A* than in *B*. This enjoins that in *A* many processes of production are employed with which the output is greater per unit of input than with those employed in *B*. In *B* one cannot consider the adoption of these processes on account of the comparative scarcity of capital goods. Their adoption would require a restriction of consumption. In *B* many manipulations are performed by manual labor which in *A* are performed by labor-saving machines. In *A* goods are produced with a longer durability; in *B* one must abstain from producing them although the

lengthening of durability is obtained by a less than proportionate increase in input. In A the productivity of labor and consequently wage rates and the standard of living of the wage earners are higher than in B.¹¹

Prolongation of the Period of Provision Beyond the Expected Duration of the Actor's Life

The judgments of value which determine the choice between satisfaction in nearer and in remoter periods of the future are expressive of present valuation and not of future valuation. They weigh the significance attached today to satisfaction in the nearer future against the significance attached today to satisfaction in the remoter future.

The uneasiness which acting man wants to remove as far as possible is always present uneasiness, i.e., uneasiness felt in the very moment of action, and it always refers to future conditions. The actor is discontented today with the expected state of affairs in various periods of the future and tries to alter it through purposive conduct.

If action is primarily directed toward the improvement of other people's conditions and is therefore commonly called altruistic, the uneasiness the actor wants to remove is his own present dissatisfaction with the expected state of other people's affairs in various periods of the future. In taking care of other people he aims at alleviating his own dissatisfaction.

It is therefore not surprising that acting man often is intent upon prolonging the period of provision beyond the expected duration of his own life.

Some Applications of the Time-Preference Theory

Every part of economics is open to intentional misrepresentation and misinterpretation on the part of people eager to excuse or to justify fallacious doctrines underlying their party programs. To prevent such misuse as far as possible it seems expedient to add some explanatory remarks to the exposition of the time-preference theory.

There are schools of thought which flatly deny that men differ with regard to innate characteristics inherited from their ancestors.¹² In the opinion of these authors the only difference between the white men of Western civilization and Eskimos is that the latter are in arrears in their progress toward modern industrial civilization. This merely temporal difference of a few thousand years is insignificant when compared with the many hundreds of thousands of years which were absorbed by man's evolution from the simian

11.Cf. John Bates Clark, *Essentials of Economic Theory* (New York, 1907), pp. 133 ff.

12.About the Marxian attack against genetics, cf. T. D. Lysenko, *Heredity and Variability* (New York, 1945). A critical appraisal of the controversy is provided by J. R. Baker, *Science and the Planned State* (New York, 1945), pp. 71-76.

state of his apelike forebears to the conditions of present-day homo sapiens. It does not support the assumption that racial differences prevail between the various specimens of mankind.

Praxeology and economics are foreign to the issues raised by this controversy. But they must take precautionary measures lest they become implicated by partisan spirit in this clash of antagonistic ideas. If those fanatically rejecting the teachings of modern genetics were not entirely ignorant of economics, they would certainly try to turn the time-preference theory to their advantage. They would refer to the circumstance that the superiority of the Western nations consists merely in their having started earlier in endeavors to save and to accumulate capital goods. They would explain this temporal difference by accidental factors, the better opportunity offered by environment.

Against such possible misinterpretations one must emphasize the fact that the temporal head start gained by the Western nations was conditioned by ideological factors which cannot be reduced simply to the operation of environment. What is called human civilization has up to now been a progress from cooperation by virtue of hegemonic bonds to cooperation by virtue of contractual bonds. But while many races and peoples were arrested at an early stage of this movement, others kept on advancing. The eminence of the Western nations consisted in the fact that they succeeded better in checking the spirit of predatory militarism than the rest of mankind and that they thus brought forth the social institutions required for saving and investment on a broader scale. Even Marx did not contest the fact that private initiative and private ownership of the means of production were indispensable stages in the progress from primitive man's penury to the more satisfactory conditions of nineteenth-century Western Europe and North America. What the East Indies, China, Japan, and the Mohammedan countries lacked were institutions for safeguarding the individual's rights. The arbitrary administration of pashas, kadis, rajahs, mandarins, and daimios was not conducive to large-scale accumulation of capital. The legal guarantees effectively protecting the individual against expropriation and confiscation were the foundations upon which the unprecedented economic progress of the West came into flower. These laws were not an outgrowth of chance, historical accidents, and geographical environment. They were the product of reason.

We do not know what course the history of Asia and Africa would have taken if these peoples had been left alone. What happened was that some of these peoples were subject to European rule and others—like China and Japan—were forced by the display of naval power to open their frontiers. The achievements of Western industrialism came to them from abroad. They were ready to take advantage of the foreign capital lent to them and invested in their territories. But

they were rather slow in the reception of the ideologies from which modern industrialism had sprung. Their assimilation to Western ways of life is superficial.

We are in the midst of a revolutionary process which will very soon do away with all varieties of colonialism. This revolution is not limited to those countries which were subject to the rule of the British, the French and the Dutch. Even nations which without any infringement of their political sovereignty had profited from foreign capital are intent upon throwing off what they call the yoke of foreign capitalists. They are expropriating the foreigners by various devices—discriminatory taxation, repudiation of debts, undisguised confiscation, foreign exchange restrictions. We are on the eve of the complete disintegration of the international capital market. The economic consequences of this event are obvious; its political repercussions are unpredictable.

In order to appreciate the political consequences of the disintegration of the international capital market it is necessary to remember what effects were brought about by the internationalization of the capital market. Under the conditions of the later nineteenth century it did not matter whether or not a nation was prepared and equipped with the required capital in order to utilize adequately the natural resources of its territory. There was practically free access for everybody to every area's natural wealth. In searching for the most advantageous opportunities for investment capitalists and promoters were not stopped by national borderlines. As far as investment for the best possible utilization of the known natural resources was concerned, the greater part of the earth's surface could be considered as integrated into a uniform world-embracing market system. It is true that this result was attained in some areas, like the British and the Dutch East Indies and Malaya, only by colonial regimes and that autochthonous governments of these territories would probably not have created the institutional setting indispensable for the importation of capital. But Eastern and Southern Europe and the Western Hemisphere had of their own accord joined the community of the international capital market.

The Marxians were intent upon indicting foreign loans and investments for the lust for war, conquest, and colonial expansion. In fact the internationalization of the capital market, together with free trade and the freedom of migration, was instrumental in removing the economic incentives to war and conquest. It no longer mattered for a man where the political boundaries of his country were drawn. The entrepreneur and the investor were not checked by them. Precisely those nations which in the age preceding the first World War were paramount in foreign lending and investment were committed to the ideas of peace-loving "decadent" liberalism. Of the foremost aggressor nations Russia, Italy, and Japan were not capital exporters; they themselves needed foreign capital for the development of their own natural

resources. Germany's imperialist adventures were not supported by its big business and finance.¹³

The disappearance of the international capital market alters conditions entirely. It abolishes the freedom of access to natural resources. If one of the socialist governments of the economically backward nations lacks the capital needed for the utilization of its natural resources, there will be no means to remedy this situation. If this system had been adopted a hundred years ago, it would have been impossible to exploit the oil fields of Mexico, Venezuela, and Iran, to establish the rubber plantations in Malaya or to develop the banana production of Central America. It is illusory to assume that the advanced nations will acquiesce forever in such a state of affairs. They will resort to the only method which gives them access to badly needed raw materials; they will resort to conquest. War is the alternative to freedom of foreign investment as realized by the international capital market.

The inflow of foreign capital did not harm the receiving nations. It was European capital that accelerated considerably the marvelous economic evolution of the United States and the British Dominions. Thanks to foreign capital the countries of Latin America and Asia are today equipped with facilities for production and transportation which they would have had to forego for a very long time if they had not received this aid. Real wage rates and farm yields are higher today in those areas than they would have been in the absence of foreign capital. The mere fact that almost all nations are vehemently asking today for "foreign aid" explodes the fables of the Marxians and the nationalists.

However, the mere lust for imported capital goods does not resuscitate the international capital market. Investment and lending abroad are only possible if the receiving nations are unconditionally and sincerely committed to the principle of private property and do not plan to expropriate the foreign capitalists at a later date. It was such expropriations that destroyed the international capital market.

Intergovernmental loans are no substitute for the functioning of an international capital market. If they are granted on business terms, they presuppose no less than private loans the full acknowledgment of property rights. If they are granted, as is usually the case, as virtual subsidies without any regard for payment of principal and interest, they impose restrictions upon the debtor nation's sovereignty. In fact such "loans" are for the most part the price paid for military assistance in coming wars. Such military considerations already played an important role in the years in which the European powers prepared the great wars of our age. The outstanding example was provided by the huge sums

13.Cf. Mises, *Omnipotent Government* (New Haven, 1944), p. 99 and the books quoted there.

which the French capitalists, pressed hard by the Government of the Third Republic, lent to Imperial Russia. The Tsars used the capital borrowed for armaments, not for an improvement of the Russian apparatus of production.

5. The Convertibility of Capital Goods

Capital goods are intermediary steps on the way toward a definite goal. If in the course of the period of production the goal is changed, it is not always possible to use the intermediary products already available for the pursuit of the new goal. Some of the capital goods may become absolutely useless, and all expenditure made in their production appears now as waste. Other capital goods could be utilized for the new project but only after having been subjected to a process of adjustment; it would have been possible to spare the costs required by this alteration if one had from the start aimed at the new goal. A third group of capital goods can be employed for the new process without any alteration; but if it had been known at the time they were produced that they would be used in the new way, it would have been possible to manufacture at smaller cost other goods which could render the same service. Finally there are also capital goods which can be employed for the new project just as well as for the original one.

It would hardly be necessary to mention these obvious facts if it were not essential to refute popular misconceptions. There is no such thing as an abstract or ideal capital that exists apart from concrete capital goods. If we disregard the role cash holding plays in the composition of capital (we will deal with this problem in one of the later sections) we must realize that capital is always embodied in definite capital goods and is affected by everything that happens with regard to them. The value of an amount of capital is a derivative of the value of the capital goods in which it is embodied. The money equivalent of an amount of capital is the sum of the money equivalents of the aggregate of capital goods to which one refers in speaking of capital in the abstract. There is nothing which could be called "free" capital. Capital is always in the form of definite capital goods. These capital goods are better utilizable for some purposes, less utilizable for others, and absolutely useless for still other purposes. Every unit of capital is therefore in some way of other fixed capital, i.e., dedicated to definite processes of production. The businessman's distinction between fixed capital and circulating capital is a difference of degree, not of kind. Everything that is valid with regard to fixed capital is also valid, although to a smaller degree, with regard to circulating capital. All capital goods have a more or less specific character. Of course,

with many of them it is rather unlikely that a change in wants and plans will make them entirely useless.

The more a definite process of production approaches its ultimate end, the closer becomes the tie between its intermediary products and the goal aimed at. Iron is less specific in character than iron tubes, and iron tubes less so than iron machine-parts. The conversion of a process of production becomes as a rule the more difficult, the farther it has been pursued and the nearer it has come to its termination, the turning out of consumers' goods.

In looking at the process of capital accumulation from its very beginnings one can easily recognize that there cannot be such a thing as free capital. There is only capital embodied in goods of a more specific character and in goods of a less specific character. When the wants or the opinions concerning the methods of want-satisfaction change, the value of the capital goods is altered accordingly. Additional capital goods can come into existence only through making consumption lag behind current production. The additional capital is already in the very moment of its coming into existence embodied in concrete capital goods. These goods had to be produced before they could—as an excess of production over consumption—become capital goods. The role which the intraposition of money plays in the sequence of these events will be dealt with later. Here we need only recognize that even the capitalist whose whole capital consists in money and in claims to money does not own free capital. His funds are tied up with money. They are affected by changes in money's purchasing power and—as far as they are invested in claims to definite sums of money—also by changes in the debtor's solvency.

It is expedient to substitute the notion of the convertibility of capital goods for the misleading distinction between fixed and free or circulating capital. The convertibility of capital goods is the opportunity offered to adjust their utilization to a change in the data of production. Convertibility is graduated. It is never perfect, i.e., present with regard to all possible changes in the data. In the case of absolutely specific factors it is entirely absent. As the conversion of capital goods from the employment originally planned to other employments becomes necessary through the emergence of unforeseen changes in the data, it is impossible to speak of convertibility in general without reference to changes in the data which have already occurred or are expected. A radical change in the data could make capital goods previously considered to be easily convertible either not convertible at all or convertible only with difficulty.

It is obvious that in practice the problem of convertibility plays a greater role with goods the serviceability of which consists in rendering a series of

services over a period of time than with capital goods the serviceability of which is exhausted by rendering only one service in the process of production. The unused capacity of plants and transportation facilities and the scrapping of equipment which according to the plans underlying its production was designed for longer use are more momentous than the throwing away of fabrics and clothing out of fashion and of physically perishable goods. The problem of convertibility is peculiarly a problem of capital and capital goods only in so far as capital accounting makes it especially visible with regard to capital goods. Essentially it is a phenomenon present also in the case of consumers' goods which an individual has acquired for his own use and consumption. If the conditions which resulted in their acquisition change, the problem of convertibility becomes actual with them too.

Capitalists and entrepreneurs in their capacity as owners of capital are never perfectly free; they are never on the eve of the first decision and action which will bind them. They are always already engaged in some way or other. Their funds are not outside the social process of production, but invested in definite lines. If they own cash, this is, according to the state of the market, either a sound or an unsound "investment"; but it is always an investment. They have either let slip the right moment for the purchase of concrete factors of production which they must buy sooner or later, or the right moment to buy has not yet come. In the first case their holding of cash is unsound; they have missed an opportunity. In the second case their choice was correct.

Capitalists and entrepreneurs in expending money for the purchase of concrete factors of production value the goods exclusively from the point of view of the anticipated future state of the market. They pay prices adjusted to future conditions as they themselves appraise them today. Errors committed in the past in the production of capital goods available today do not burden the buyer; their incidence falls endaural on the seller. In this sense the entrepreneur who proceeds to buy against money capital goods for future production crosses out the past. His entrepreneurial ventures are not affected by changes which in the past occurred in the valuation and the prices of the factors of production he acquires. In this sense alone one may say that the owner of ready cash owns liquid funds and is free.

6. The Influence of the Past Upon Action

The more the accumulation of capital goods proceeds, the greater becomes the problem of convertibility. The primitive methods of farmers and handcraftsmen of earlier ages could more easily be adjusted to new tasks

than modern capitalist methods. But it is precisely modern capitalism that is faced with rapid changes in conditions. Changes in technological knowledge and in the demand of the consumers as they occur daily in our time make obsolete many of the plans directing the course of production and raise the question whether or not one should pursue the path started on.

The spirit of sweeping innovation may get hold of men, may triumph over the inhibitions of sluggishness and indolence, may incite the slothful slaves of routine to a radical rescission of traditional valuations, and may peremptorily urge people to enter upon new paths leading to new goals. Doctrinaires may try to forget that we are in all our endeavors the heirs of our fathers, and that our civilization, the product of a long evolution, cannot be transformed at one stroke. But however strong the propensity for innovation may be, it is kept in bounds by a factor that forces men not to deviate too hastily from the course chosen by their forebears. All material wealth is a residuum of past activities and is embodied in concrete capital goods of limited convertibility. The capital goods accumulated direct the actions of the living into lines which they would not have chosen if their discretion had not been restricted by binding action accomplished in the past. The choice of ends and of the means for the attainment of these ends is influenced by the past. Capital goods are a conservative element. They force us to adjust our actions to conditions brought about by our own conduct in earlier days and by the thinking, choosing and acting of bygone generations.

We may picture to ourselves the image of how things would be if, equipped with our present knowledge of natural resources, geography, technology, and hygienics, we had arranged all processes of production and manufactured all capital goods accordingly. We would have located the centers of production in other places. We would have populated the earth's surface in a different way. Some areas which are today densely inhabited and full of plants and farms would be less occupied. We would have assembled more people and more shops and farms in other areas. All establishments would be equipped with the most efficient machines and tools. Each of them would be the size required for the most economical utilization of its capacity of production. In the world of our perfect planning there would be no technological backwardness, no unused capacity to produce, and no avoidable shipping of men or of goods. The productivity of human exertion would far surpass that prevailing in our actual, imperfect state.

The writings of the socialists are full of such utopian fancies. Whether

they call themselves Marxian or non-Marxian socialists, technocrats, or simply planners, they are all eager to show us how foolishly things are arranged in reality and how happily men could live if they were to invest the reformers with dictatorial powers. It is, they say, only the inadequacy of the capitalist mode of production that prevents mankind from enjoying all the amenities which could be produced under the contemporary state of technological knowledge.

The fundamental error involved in this rationalistic romanticism is the misconception of the character of the capital goods available and of their scarcity. The intermediary products available today were manufactured in the past by our ancestors and by ourselves. The plans which guided their production were an outgrowth of the then prevailing ideas concerning ends and technological procedures. If we consider aiming at different ends and choosing different methods of production, we are faced with an alternative. We must either leave unused a great part of the capital goods available and start afresh producing modern equipment, or we must adjust our production processes as far as possible to the specific character of the capital goods available. The choice rests, as it always does in the market economy, with the consumers. Their conduct in buying or not buying settles the issue. In choosing between old tenements and new ones equipped with all the gadgets of comfort, between railroad and motorcar, between gas and electric light, between cotton and rayon goods, between silk and nylon hosiery, they implicitly choose between a continued employment of previously accumulated capital goods and their scrapping. When an old building which could still be inhabited for years is not prematurely demolished and replaced by a modern house because the tenants are not prepared to pay higher rents and prefer to satisfy other wants instead of living in more comfortable homes, it is obvious how present consumption is influenced by conditions of the past.

The fact that not every technological improvement is instantly applied in the whole field is not more conspicuous than the fact that not everybody throws away his old car or his old clothes as soon as a better car is on the market or new patterns become fashionable. In all such things people are motivated by the scarcity of goods available.

A new machine, more efficient than those used previously, is constructed. Whether or not the plants equipped with the old, less efficient machines will discard them in spite of the fact that they are still utilizable and replace them by the new model depends on the degree of the new machine's superiority. Only if this superiority is great enough to compensate for the additional

expenditure required, is the scrapping of the old equipment economically sound. Let p be the price of the new machine, q the price that can be realized by selling the old machine as scrap iron, a the cost of producing one unit of product by the old machine, b the cost of producing one unit of product by the new machine without taking into account the costs required for its purchase. Let us further assume that the eminence of the new machine consists merely in a better utilization of raw material and labor employed and not in manufacturing a greater quantity of products and that thus the annual output z remains unchanged. Then the replacement of the old machine by the new one is advantageous if the yield $z(a-b)$ is large enough to make good for the expenditure of $p - q$. We may disregard the writing off of depreciation in assuming that the annual quotas are not greater for the new machine than for the old one. The same considerations hold true also for the transfer of an already existing plant from a place in which conditions of production are less favorable to a location offering more favorable conditions.

Technological backwardness and economic inferiority are two different things and must not be confused. It can happen that a production aggregate which from a merely technological point of view appears outclassed is in a position to compete successfully with aggregates better equipped or located at more favorable sites. The degree of the superiority provided by the technologically more efficient equipment or by the more propitious location as compared with the surplus expenditure required for the transformation decides the issue. This relation depends on the convertibility of the capital goods concerned.

The distinction between technological perfection and economic expediency is not, as romantic engineers would have us believe, a feature of capitalism. It is true that only economic calculation as possible solely in a market economy gives the opportunity to establish all the computations required for the cognition of the relevant facts. A socialist management would not be in a position to ascertain the state of affairs by arithmetical methods. It would therefore not know whether or not what it plans and puts into operation is the most appropriate procedure to employ the means available for the satisfaction of what it considers to be the most urgent of the still unsatisfied wants of the people. But if it were in a position to calculate, it would not proceed in a way different from that of the calculating businessman. It would not squander scarce factors of production for the satisfaction of wants deemed less urgent if this would prevent the satisfaction

of more urgent wants. It would not hurry to scrap still utilizable production facilities if the investment required would impair the expansion of the production of more urgently needed goods.

If one takes the problem of convertibility into proper account, one can easily explode many widespread fallacies. Take, for instance, the infant industries argument advanced in favor of protection. Its supporters assert that temporary protection is needed in order to develop processing industries in places in which natural conditions for their operation are more favorable or, at least, no less favorable than in the areas in which the already established competitors are located. These older industries have acquired an advantage by their early start. They are now fostered by a merely historical, accidental, and manifestly "irrational" factor. This advantage prevents the establishment of competing plants in areas the conditions of which give promise of becoming able to produce more cheaply than, or at least as cheaply as, the old ones. It may be admitted that protection for infant industries is temporarily expensive. But the sacrifices made will be more than repaid by the gains to be reaped later.

The truth is that the establishment of an infant industry is advantageous from the economic point of view only if the superiority of the new location is so momentous that it outweighs the disadvantages resulting from the abandonment of nonconvertible and nontransferable capital goods invested in the already established plants. If this is the case, the new plants will be able to compete successfully with the old ones without any aid given by the government. If it is not the case, the protection granted to them is wasteful, even if it is only temporary and enables the new industry to hold its own at a later period. The tariff amounts virtually to a subsidy which the consumers are forced to pay as a compensation for the employment of scarce factors of production for the replacement of still utilizable capital goods to be scrapped and the withholding of these scarce factors from other employments in which they could render services valued higher by the consumers. The consumers are deprived of the opportunity to satisfy certain wants because the capital goods required are directed toward the production of goods which were already available to them in the absence of tariffs.

There prevails a universal tendency for all industries to move to those locations in which the potentialities for production are most propitious. In the unhampered market economy this tendency is slowed down as much as due consideration to the inconvertibility of scarce capital goods requires. This historical element does not give a permanent superiority to the old

industries. It only prevents the waste originating from investments which bring about unused capacity of still utilizable production facilities on the one hand and a restriction of capital goods available for the satisfaction of unsatisfied wants on the other hand. In the absence of tariffs the migration of industries is postponed until the capital goods invested in the old plants are worn out or become obsolete by technological improvements which are so momentous as to necessitate their replacement by new equipment. The industrial history of the United States provides numerous examples of the shifting, within the boundaries of the country, of centers of industrial production which was not fostered by any protective measures on the part of the authorities. The infant industries argument is no less spurious than all the other arguments advanced in favor of protection.

Another popular fallacy refers to the alleged suppression of useful patents. A patent is a legal monopoly granted for a limited number of years to the inventor of a new contrivance. At this point we are not concerned with the question whether or not it is a good policy to grant such exclusive privileges to inventors.¹⁴ We have to deal only with the assertion that "big business" misuses the patent system to withhold from the public benefits it could derive from technological improvement.

In granting a patent to an inventor the authorities do not investigate the invention's economic significance. They are concerned merely with the priority of the idea and limit their examination to technological problems. They deal with the same impartial scrupulousness with an invention which revolutionizes a whole industry and with some trifling gadget, the uselessness of which is obvious. Thus patent protection is provided to a vast number of quite worthless inventions. Their authors are ready to overrate the importance of their contribution to the progress of technological knowledge and build exaggerated hopes upon the material gain it could bring them. Disappointed, they grumble about the absurdity of an economic system that deprives the people of the benefit of technological progress.

The conditions under which it is economical to substitute new improved equipment for still utilizable older tools have been pointed out above. If these conditions are absent, it does not pay, either for private enterprise in a market economy or for the socialist management of a totalitarian system, to adopt the new technological process immediately. The new machinery to be produced for new plants, the expansion of already existing plants and the replacement of old equipment torn out will be effected according to the new

14.Cf. above, pp. 385-386, and below, pp. 680-681.

design, but the still utilizable equipment will not be scrapped. The new process will be adopted only step by step. The plants equipped with the old devices are for some time still in a position to stand the competition of those equipped with the new ones. Those questioning the correctness of this statement should ask themselves whether they always throw away their vacuum cleaners or radio sets as soon as better models are offered for sale.

It does not make any difference in this regard whether the new invention is or is not protected by a patent. A firm that has acquired a license has already expended money for the new invention. If it nonetheless does not adopt the new method, the reason is that its adoption does not pay. It is of no avail that the government-created monopoly which the patent provides prevents competitors from applying it. what counts alone is the degree of superiority secured by the new invention as against old methods. Superiority means reduction in the cost of production per unit or such an improvement in the quality of the product that buyers are ready to pay adequately higher prices. The absence of a sufficient degree of superiority to make the cost of transformation profitable is proof of the fact that consumers are more intent upon acquiring other goods than upon enjoying the benefits of the new invention. It is the consumers with whom the ultimate decision rests.

Superficial observers sometimes fail to see these facts because they are deluded by the practice of many big enterprises of acquiring the rights granted by a patent in their field regardless of its usefulness. This practice stems from various considerations:

1. The economic significance of the innovation is not yet recognizable.
2. The innovation is obviously useless. But the firm believes that it could develop it in such a way as to make it useful.
3. The immediate application of the innovation does not pay. But the firm intends to apply it later when replacing its worn-out equipment.
4. The firm wants to encourage the inventor to continue his research in spite of the fact that up to now his endeavors have not resulted in a practically utilizable innovation.
5. The firm wants to placate litigious inventors in order to spare the money, time, and nervous strain which frivolous infringement suits bring about.
6. The firm resorts to hardly disguised bribery or yields to veiled blackmail when paying for quite useless patents to officers, engineers, or other

influential personnel of firms or institutions which are its customers or potential customers.

If an invention is so superior to the old processes that it makes the old equipment obsolete and peremptorily demands its immediate replacement by new machines, the transformation will be effected no matter whether the privilege conferred by the patent is in the hands of the owners of the old equipment or of an independent firm. The assertions to the contrary are based on the assumption that not only the inventor and his attorneys but also all people already active in the field of production concerned or prepared to enter into it if an opportunity is offered to them fail entirely to grasp the importance of the invention. The inventor sells his rights to the old firm for a trifling sum because no one else wants to acquire them. And this old firm is also too dull to see the advantage that it could derive from the application of the invention.

Now, it is true that an improvement cannot be adopted if people are blind to its usefulness. Under a socialist management the incompetence or stubbornness of the officers in charge of the department concerned would be enough to prevent the adoption of a more economical method of production. The same is the case with regard to inventions in fields dominated by the government. The most conspicuous examples are provided by the failure of eminent military experts to comprehend the significance of new devices. The great Napoleon did not recognize the help which steamboats could give to his plans to invade Great Britain; both Foch and the German general staff underestimated on the eve of the first World War the importance of aviation, and later the eminent pioneer of air power, General Billy Mitchell, had very unpleasant experiences. But things are entirely different in the orbit in which the market economy is not hampered by bureaucratic narrow-mindedness. There, a tendency to overrate rather than to underestimate the potentialities of an innovation prevails. The history of modern capitalism shows innumerable instances of abortive attempts to push innovations which proved futile. Many promoters have paid heavily for unfounded optimism. It would be more realistic to blame capitalism for its propensity to overvalue useless innovations than for its alleged suppression of useful innovations. It is a fact that large sums have been wasted for the purchase of quite useless patent rights and for fruitless ventures to apply them in practice.

It is absurd to speak of an alleged bias of modern big business against technological improvement. The great corporations spend huge sums in the search for new processes and new devices.

Those lamenting an alleged suppression of inventions on the part of free enterprise must not think that they have proved their case by referring to the fact that many patents are either never utilized at all or only used after a long delay. It is manifest that numerous patents, perhaps the far greater number of them, are quite useless. Those alleging suppression of useful innovations do not cite a single instance of such an innovation's being unused in the countries protecting it by a patent while it is used by the Soviets—no respecters of patent privileges.

The limited convertibility of capital goods plays an important role in human geography. The present distribution of human abodes and industrial centers over the earth's surface is to a certain degree determined by historical factors. The fact that definite sites were chosen in a distant past is still operative. There prevails, it is true, a universal tendency for people to move to those areas which offer the most propitious potentialities for production. However, this tendency is restrained not only by institutional factors, such as migration barriers. A historical factor also plays a momentous role. Capital goods of limited convertibility have been invested in areas which, from the point of view of our present knowledge, offer less favorable opportunities. Their immobilization counteracts the tendency to locate plants, farms, and dwelling places according to the state of our contemporary information about geography, geology, plant and animal physiology, climatology, and other branches of science. Against the advantages of moving toward sites offering better physical opportunities one must weigh the disadvantages of leaving unused capital goods of limited convertibility and transferability.

Thus the degree of convertibility of the supply of capital goods available affects all decisions concerning production and consumption. The smaller the degree of convertibility, the more realization of technological improvement is delayed. Yet it would be absurd to refer to this retarding effect as irrational and antiprogressive. To consider, in planning action, all the advantages and disadvantages expected and to weigh them against one another is a manifestation of rationality. Not the soberly calculating businessman, but the romantic technocrat is to blame for a delusive incomprehension of reality. What slows down technological improvement is not the imperfect convertibility of capital goods, but their scarcity. We are not rich enough to renounce the services which still utilizable capital goods could provide. The fact that a supply of capital goods is available does not check progress; it is, on the contrary, the indispensable condition of any improvement and progress. The heritage of the past embod-

ied in our supply of capital goods is our wealth and the foremost means of further advancement in well-being. It is true we would be still better off if our ancestors and we ourselves in our past actions had succeeded in better anticipating the conditions under which we must act today. The cognizance of this explains many phenomena of our time. But it does not cast any blame upon the past nor does it show any imperfection inherent in the market economy.

7. Accumulation, Maintenance and Consumption of Capital

Capital goods are intermediary products which in the further course of production activities are transformed into consumers' goods. All capital goods, including those not called perishable, perish either in wearing out their serviceableness in the performance of production processes or in losing their serviceableness, even before this happens, through a change in the market data. There is no question of keeping a stock of capital goods intact. They are transient.

The notion of wealth constancy is an outgrowth of deliberate planning and acting. It refers to the concept of capital as applied in capital accounting, not to the capital goods as such. The idea of capital has no counterpart in the physical universe of tangible things. It is nowhere but in the minds of planning men. It is an element in economic calculation. Capital accounting serves one purpose only. It is designed to make us know how our arrangement of production and consumption acts upon our power to satisfy future wants. The question it answers is whether a certain course of conduct increases or deceases the productivity of our future exertion.

The intention of preserving the available supply of capital goods in full power or of increasing it could also direct the actions of men who did not have the mental tool of economic calculation. Primitive fishermen and hunters were certainly aware of the difference between maintaining their tools and devices in good shape and serviceableness and wearing them out without providing for adequate replacements. An old-fashioned peasant, committed to traditional routine and ignorant of accountancy, knows very well the significance of maintaining intact his live and dead stock. Under the simple conditions of a stationary or slowly progressing economy it is feasible to operate successfully even in the absence of capital accounting. There the maintenance of a by and large unchanged supply of capital goods can be effected either by current production of pieces destined to replace those worn out or by the accumulation of a fund of consumers' goods which

makes it possible to devote effort at a later time toward the replacement of such capital goods without being forced to restrict consumption temporarily. But a changing industrial economy cannot do without economic calculation and its fundamental concepts of capital and income.

Conceptual realism has muddled the comprehension of the concept of capital. It has brought about a mythology of capital.¹⁵ An existence has been attributed to "capital," independent of the capital goods in which it is embodied. Capital, it is said, reproduces itself and thus provides for its own maintenance. Capital, says the Marxian, hatches out profit. All this is nonsense.

Capital is a praxeological concept. It is a product of reasoning, and its place is in the human mind. It is a mode of looking at the problems of acting, a method of appraising them from the point of view of a definite plan. It determines the course of human action and is, in this sense only, a real factor. It is inescapably linked with capitalism, the market economy.

The capital concept is operative as far as men in their actions let themselves be guided by capital accounting. If the entrepreneur has employed factors of production in such a way that the money equivalent of the products at least equals the money equivalent of the factors expended, he is in a position to replace the capital goods expended by new capital goods the money equivalent of which equals the money equivalent of those expended. But the employment of the gross proceeds, their allotment to the maintenance of capital, consumption, and the accumulation of new capital is always the outcome of purposive action on the part of the entrepreneurs and capitalists. It is not "automatic"; it is by necessity the result of deliberate action. and it can be frustrated if the computation on which it is based was vitiated by negligence, error, or misjudgment of future conditions.

Additional capital can be accumulated only by saving, i.e., a surplus of production over consumption. Saving may consist in a restriction of consumption. But it can also be brought about, without a further restriction in consumption and without a change in the input of capital goods, by an increase in net production. Such an increase can appear in different ways:

1. Natural conditions have become more propitious. Harvests are more plentiful. People have access to more fertile soil and have discovered mines yielding higher returns per unit of input. Cataclysms and catastrophes which in repeated occurrence frustrated human effort have become less frequent.

15.Cf. Hayek, "The Mythology of Capital," *The Quarterly Journal of Economics*, L (1936), 223 ff.

Epidemics and cattle plagues have subsided.

2. People have succeeded in rendering some production processes more fruitful without investing more capital goods and without a further lengthening of the period of production.
3. Institutional disturbances of production activities have become less frequent. The losses caused by war, revolutions, strikes, sabotage, and other crimes have been reduced.

If the surpluses thus brought about are employed as additional investments, they further increase future net proceeds. Then it becomes possible to expand consumption without prejudice to the supply of capital goods available and the productivity of labor.

Capital is always accumulated by individuals or groups of individuals acting in concert, never by the Volkswirtschaft or the society.¹⁶ It may happen that while some actors are accumulating additional capital, others are at the same time consuming capital previously accumulated. If these two processes are equal in amount, the sum of the capital funds available in the market system remains unaltered and it is as if no change in the total amount of capital goods available had occurred. The accumulation of additional capital on the part of some people merely removes the necessity of shortening the period of production of some processes. But no further adoption of processes with a longer period of production becomes feasible. If we look at affairs from this angle we may say that a transfer of capital took place. But one must guard oneself against confusing this notion of capital transfer with the conveyance of property from one individual or group of individuals to others.

The sale and purchase of capital goods and the loans granted to business are not as such capital transfer. They are transactions which are instrumental in conveying the concrete capital goods into the hands of those entrepreneurs who want to employ them for the performance of definite projects. They are only ancillary steps in the course of a long-range sequence of acts. Their composite effect decides the success or failure of the whole project. But neither profit nor loss directly brings about either capital accumulation or capital consumption. It is the way in which those in whose fortune profit or loss occurs arrange their consumption that alters the amount of capital available.

Capital transfer can be effected both without and with a conveyance in the ownership of capital goods. The former is the case when one man

16. The state and the municipalities, in the market economy, are also merely actors representing concerted action on the part of definite groups of individuals.

consumes capital while another man independently accumulates capital in the same amount. The latter is the case if the seller of capital goods consumes the proceeds while the buyer pays the price out of a nonconsumed—saved—surplus of net proceeds over consumption.

Capital consumption and the physical extinction of capital goods are two different things. All capital goods sooner or later enter into final products and cease to exist through use, consumption, wear and tear. What can be preserved by an appropriate arrangement of consumption is only the value of a capital fund, never the concrete capital goods. It may sometimes happen that acts of God or manmade destruction result in so great an extinction of capital goods that no possible restriction of consumption can bring about in a short time a replenishment of the capital funds to its previous level. But what brings about such a depletion is always the fact that the net proceeds of current production devoted to the maintenance of capital are not sufficiently large.

8. The Mobility of the Investor

The limited convertibility of the capital goods does not immovably bind their owner. The investor is free to alter the investment of his funds. If he is able to anticipate the future state of the market more correctly than other people, he can succeed in choosing only investments whose price will rise and in avoiding investments whose price will drop.

Entrepreneurial profit and loss emanate from the dedication of factors of production to definite projects. Stock exchange speculation and analogous transactions outside the securities market determine on whom the incidence of these profits and losses shall fall. A tendency prevails to make a sharp distinction between such purely speculative ventures and genuinely sound investment. The distinction is one of degree only. There is no such thing as a nonspeculative investment. In a changing economy action always involves speculation. Investments may be good or bad, but they are always speculative. A radical change in conditions may render bad even investments commonly considered perfectly safe.

Stock speculation cannot undo past action and cannot change anything with regard to the limited convertibility of capital goods already in existence. What it can do is to prevent additional investment in branches and enterprises in which, according to the opinion of the speculators, it would be misplaced. It points the specific way for a tendency, prevailing in the market economy, to expand profitable production ventures and to restrict the unprofitable. In

this sense the stock exchange becomes simply “the market,” the focal point of the market economy, the ultimate device to make the anticipated demand of the consumers supreme in the conduct of business.

The mobility of the investor manifests itself in the phenomenon misleadingly called capital flight. Individual investors can go away from investments which they consider unsafe provided that they are ready to take the loss already discounted by the market. Thus they can protect themselves against anticipated further losses and shift them to people who are less realistic in their appraisal of the future prices of the goods concerned. Capital flight does not withdraw inconvertible capital goods from the lines of their investment. It consists merely in a change of ownership.

It makes no difference in this regard whether the capitalist “flees” into another domestic investment or into a foreign investment. One of the main objectives of foreign exchange control is to prevent capital flight into foreign countries. However, foreign exchange control only succeeds in preventing the owners of domestic investments from restricting their losses by exchanging in time a domestic investment they consider unsafe for a foreign investment they consider safe.

If all or certain classes of domestic investment are threatened by partial or total expropriation, the market discounts the unfavorable consequences of this policy by an adequate change in their prices. When this happens, it is too late to resort to flight in order to avoid being victimized. Only those investors can come off with a small loss who are keen enough to forecast the disaster at a time when the majority is still unaware of its approach and its significance. Whatever the various capitalists and entrepreneurs may do, they can never make inconvertible capital goods mobile and transferable. While this, at least, is admitted by and large with regard to fixed capital, it is denied with regard to circulating capital. It is asserted that a businessman can export products and fail to reimport the proceeds. People do not see that an enterprise cannot continue its operations when deprived of its circulating capital. If a businessman exports his own funds employed for the current purchase of raw materials, labor, and other essential requirements, he must replace them by funds borrowed. The grain of truth in the fable of the mobility of circulating capital is the fact that it is possible for an investor to avoid losses menacing his circulating capital independently of the avoidance of such losses menacing his fixed capital. However, the process of capital flight is in both instances the same. It is a change in the person of the investor. The investment itself is not

affected; the capital concerned does not emigrate.

Capital flight into a foreign country presupposes the propensity of foreigners to exchange their investments abroad against those in the country from which capital flees. A British capitalist cannot flee from his British investments if no foreigner buys them. It follows that capital flight can never result in the much talked about deterioration of the balance of payments. Neither can it make foreign exchange rates rise. If many capitalists—whether British or foreign—want to get rid of British securities, a drop in their prices will ensue. But it will not affect the exchange ratio between the sterling and foreign currencies.

The same is valid with regard to capital invested in ready cash. The owner of French francs who anticipates the consequences of the French Government's inflationary policy can either flee into "real goods" by the purchase of goods or into foreign exchange. But he must find people who are ready to take francs in exchange. He can flee only as long as there are still people left who appraise the future of the franc more optimistically than he himself does. What makes commodity prices and foreign exchange rates rise is not the conduct of those ready to give away francs, but the conduct of those refusing to take them except at a low rate of exchange.

Governments pretend that in resorting to foreign exchange restrictions to prevent capital flight they are motivated by consideration of the nation's vital interests. What they really bring about is contrary to the material interests of many citizens without any benefit to any citizen or to the phantom of the Volkswirtschaft. If there is inflation going on in France, it is certainly not to the advantage either of the nation as a whole or of any citizen that all the disastrous consequences should affect Frenchmen only. If some Frenchmen were to unload the burden of these losses on foreigners by selling them French banknotes or bonds redeemable in such banknotes, a part of these losses would fall upon foreigners. The manifest outcome of the prevention of such transactions is to make some Frenchmen poorer without making any Frenchmen richer. From the nationalist point of view this hardly seems desirable.

Popular opinion finds something objectionable in every possible aspect of stock market transactions. If prices are rising, the speculators are denounced as profiteers who appropriate to themselves what by rights belongs to other people. If prices drop, the speculators are denounced for squandering the nation's wealth. The profits of the speculators are vilified as robbery and theft at the expense of the rest of the nation. It is insinuated that they are

the cause of the public's poverty. It is customary to draw a distinction between this dishonest bounty of the jobbers and the profits of the manufacturer who does not merely gamble but supplies the consumers. Even financial writers fail to realize that stock exchange transactions produce neither profits nor losses, but are only the consummation of profits and losses arising in trading and manufacturing. These profits and losses, the outgrowth of the buying public's approval or disapproval of the investments effected in the past, are made visible by the stock market. The turnover on the stock market does not affect the public. It is, on the contrary, the public's reaction to the mode in which investors arranged production activities that determines the price structure of the securities market. It is ultimately the consumers' attitude that makes some stocks rise, others drop. Those not saving and investing neither profit nor lose on account of fluctuations in stock exchange quotations. The trade on the securities market merely decides which investors shall earn profits and which shall suffer losses.¹⁷

9. Money and Capital; Saving and Investment

Capital is computed in terms of money and represents in such accounting a definite sum of money. But capital can also consist of amounts of money. As capital goods also are exchanged and as such exchanges are effected under the same conditions as the exchange of all other goods, here too indirect exchange and the use of money become peremptory. In the market economy no participant can forego the advantages which cash holding conveys. Not only in their capacity as consumers, but also in their capacity as capitalists and entrepreneurs, individuals are under the necessity of keeping cash holdings.

Those who have seen in this fact something puzzling and contradictory have been misled by a misconstruction of monetary calculation and capital accounting. They attempt to assign to capital accounting tasks which it can never achieve. Capital accounting is a mental tool of calculating and computing suitable for individuals and groups of individuals acting in the market economy. Only in the frame of monetary calculation can capital become computable. The sole task that capital accounting can perform is to show to the various individuals acting within a market economy whether the money equivalent of their funds devoted to acquisitive action has changed and to what extent. For all other purposes capital accounting is quite useless.

17. The popular doctrine that the stock exchange "absorbs" capital and money is critically analyzed and entirely refuted by F. Machlup, *The Stock Market, Credit and Capital Formation*, trans. by V. Smith (London, 1940), pp. 6-153.

If one tries to ascertain a magnitude called the *volkswirtschaftliche* capital or the social capital as distinct both from the acquisitive capital of various individuals and from the meaningless concept of the sum of the various individuals' acquisitive capital funds, then, of course, one is troubled by a spurious problem. What is the role of money, one asks, in such a concept of social capital? One discovers a momentous difference between capital as seen from the individual's point of view and as seen from the standpoint of society. However, this whole reasoning is utterly fallacious. It is obviously contradictory to eliminate reference to money from the computation of a magnitude which cannot be computed otherwise than in terms of money. It is nonsensical to resort to monetary calculation in an attempt to ascertain a magnitude which is meaningless in an economic system in which there cannot be any money and no money prices for factors of production. As soon as our reasoning passes beyond the frame of a market society, it must renounce every reference to money and money prices. The concept of social capital can only be thought of as a collection of various goods. It is impossible to compare two collections of this type otherwise than by declaring that one of them is more serviceable in removing the uneasiness felt by the whole of society than the other. (Whether or not such a comprehensive judgment can be pronounced by any mortal man is another question.) No monetary expression can be applied to such collections. Monetary terms are void of any meaning in dealing with the capital problems of a social system in which there is no market for factors of production.

In recent years economists have paid special attention to the role cash holding plays in the process of saving and capital accumulation. Many fallacious conclusions have been advanced about this role.

If an individual employs a sum of money not for consumption but for the purchase of factors of production, saving is directly turned into capital accumulation. If the individual saver employs his additional savings for increasing his cash holding because this is in his eyes the most advantageous mode of using them, he brings about a tendency toward a fall in commodity prices and a rise in the monetary unit's purchasing power. If we assume that the supply of money in the market system does not change, this conduct on the part of the saver will not directly influence the accumulation of capital and its employment for an expansion of production.¹⁸ The effect of our

18.Indirectly capital accumulation is affected by the changes in wealth and incomes which every instance of cash-induced change in the purchasing power of money brings about.

saver's saving, i.e., the surplus of goods produced over goods consumed, does not disappear on account of his hoarding. The prices of capital goods do not rise to the height they would have attained in the absence of such hoarding. But the fact that more capital goods are available is not affected by the striving of a number of people to increase their cash holdings. If nobody employs the goods—the nonconsumption of which brought about the additional saving—for an expansion of his consumptive spending, they remain as an increment in the amount of capital goods available, whatever their prices may be. The two processes—increased cash holding of some people and increased capital accumulation—take place side by side.

A drop in commodity prices, other things being equal, causes a drop in the money equivalent of the various individuals' capital. But this is not tantamount to a reduction in the supply of capital goods and does not require an adjustment of production activities to an alleged impoverishment. It merely alters the money items to be applied in monetary calculation.

Now let us assume that an increase in the quantity of credit money or of fiat money or credit expansion produces the additional money required for an expansion of the individuals' cash holdings. Then three processes take their course independently: a tendency toward a fall in commodity prices brought about by the increase in the amount of capital goods available and the resulting expansion of production activities, a tendency toward a fall in prices brought about by an increased demand of money for cash holding, and finally a tendency toward a rise in prices brought about by the increase in the supply of money (in the broader sense). The three processes are to some extent synchronous. Each of them brings about its particular effects which, according to the circumstances, may be intensified or weakened by the opposite effects originating from one of the other two. But the main thing is that the capital goods resulting from the additional saving are not destroyed by the coincident monetary changes—changes in the demand for and the supply of money (in the broader sense). Whenever an individual devotes a sum of money to saving instead of spending it for consumption, the process of saving agrees perfectly with the process of capital accumulation and investment. It does not matter whether the individual saver does or does not increase his cash holding. The act of saving always has its counterpart in a supply of goods produced and not consumed, of goods available for further production activities. A man's savings are always embodied in concrete capital goods.

The idea that hoarded money is a barren part of the total amount of wealth

and that its increase causes shrinkage in that part of wealth that is devoted to production is correct only to the extent that the rise in the monetary unit's purchasing power results in the employment of additional factors of production for the mining of gold and in the transfer of gold from industrial to monetary employment. But this is brought about by the striving after increased cash holdings and not by saving. Saving, in the market economy, is possible only through abstention from the consumption of a part of income. The individual saver's employment of his savings for hoarding influences the determination of money's purchasing power, and may thus reduce the nominal amount of capital, i.e., its money equivalent; it does not render any part of the accumulated capital sterile.

XIX. INTEREST

1. The Phenomenon of Interest

IT has been shown that time preference is a category inherent in every human action. Time preference manifests itself in the phenomenon of originary interest, i.e., the discount of future goods as against present goods.

Interest is not merely interest on capital. Interest is not the specific income derived from the utilization of capital goods. The correspondence between three factors of production labor, capital, and land—and three classes of income—wages, profit, and rent—as taught by the classical economists is untenable. Rent is not the specific revenue from land. Rent is a general catalactic phenomenon; it plays in the yield of labor and capital goods the same role it plays in the yield of land. Furthermore there is no homogeneous source of income that could be called profit in the sense in which the classical economists applied this term. Profit (in the sense of entrepreneurial profit) and interest are no more characteristic of capital than they are of land.

The prices of consumers' goods are by the interplay of the forces operation on the market apportioned to the various complementary factors cooperating in their production. As the consumers' goods are present goods, while the factors of production are means for the production of future goods, and as present goods are valued higher than future goods of the same kind and quantity, the sum thus apportioned, even in the imaginary construction of the evenly rotating economy, falls behind the present price of the consumers' goods concerned. This difference is the originary interest. It is not specifically connected with any of the three classes of factors of production which the classical economists distinguished. Entrepreneurial profit and loss are produced by changes in the data and the resulting price changes which occur in the passing of the period of production.

Naive reasoning does not see any problem in the current revenue derived from hunting, fishing, cattle breeding, forestry, and agriculture. Nature generates deer, fish, and cattle and makes them grow, causes the cows to give milk and the chickens to lay eggs, the trees to put on wood and to bear

fruit, and the seeds to shoot into ears. He who has a title to appropriate for himself this recurring wealth enjoys a steady income. Like a stream which continually carries new water, the "stream of income" flows continually and conveys again and again new wealth. The whole process appears as a natural phenomenon. But for the economist a problem is presented in the determination of prices for land, cattle, and all the rest. If future goods were not bought and sold at a discount as against present goods, the buyer of land would have to pay a price which equals the sum of all future net revenues and which would leave nothing for a current reiterated income.

The yearly recurring proceeds of the owners of land and cattle are not marked by any characteristic which would catalactically distinguish them from the proceeds stemming from produced factors of production which are used up sooner or later in the processes of production. The power of disposal over a piece of land is the control of this field's cooperation in the production of all the fruit which can ever be grown on it, and the power of disposal over a mine is the control of its cooperation in the extraction of all the minerals which can ever be brought to the surface from it. In the same way the ownership of a machine or a bale of cotton is the control of its cooperation in the manufacture of all goods which are produced with its cooperation. The fundamental fallacy implied in all the productivity and use approaches to the problem of interest was that they traced back the phenomenon of interest to these productive services rendered by the factors of production. However, the serviceableness of the factors of production determines the prices paid for them, not interest. These prices exhaust the whole difference between the productivity of a process aided by a definite factor's cooperation and that of a process lacking this cooperation. The difference between the sum of the prices of the complementary factors of production and the products which emerges even in the absence of changes in the market data concerned, is an outcome of the higher valuation of present goods as compared with future goods. As production goes on, the factors of production are transformed or ripen into present goods of a higher value. This increment is the source of specific proceeds flowing into the hands of the owners of the factors of production, of originary interest.

The owners of the material factors of production—as distinct from the pure entrepreneurs of the imaginary construction of an integration of catalactic functions—harvest two catalactically different items: the prices paid for the productive cooperation of the factors they control on the one hand and interest on the other hand. These two things must not be confused.

It is not permissible to refer, in the explanation of interest, to the services rendered by the factors of production in the turning out of products.

Interest is a homogeneous phenomenon. There are no different sources of interest. Interest on durable goods and interest on consumption-credit are like other kinds of interest an outgrowth of the higher valuation of present goods as against future goods.

2. Originary Interest

Originary interest is the ratio of the value assigned to want-satisfaction in the immediate future and the value assigned to want-satisfaction in remote periods of the future. It manifests itself in the market economy in the discount of future goods as against present goods. It is a ratio of commodity prices, not a price in itself. There prevails a tendency toward the equalization of this ratio for all commodities. In the imaginary construction of the evenly rotating economy the rate of originary interest is the same for all commodities.

Originary interest is not "the price paid for the services of capital."¹ The higher productivity of more time-consuming roundabout methods of production which is referred to by Bohm-Bawerk and by some later economists in the explanation of interest, does not explain the phenomenon. It is, on the contrary, the phenomenon of originary interest that explains why less time-consuming methods of production are resorted to in spite of the fact that more time-consuming methods would render a higher output per unit of input. Moreover, the phenomenon of originary interest explains why pieces of usable land can be sold and bought at finite prices. If the future services which a piece of land can render were to be valued in the same way in which its present services are valued, no finite price would be high enough to impel its owner to sell it. Land could neither be bought nor sold against definite amounts of money, nor bartered against goods which can render only a finite number of services. Pieces of land would be bartered only against other pieces of land. A superstructure that can yield during a period of ten years an annual revenue of one hundred dollars would be priced (apart from the soil on which it is built) at the beginning of the second year at none hundred dollars, and so on.

Originary interest is not a price determined on the market by the interplay

1. This is the popular definition of interest as, for instance, given by Ely, Adams, Lorenz, and Young, *Outlines of Economics* (3d ed. New York, 1920), p. 493.

of the demand for and the supply of capital or capital goods. Its height does not depend on the extent of this demand and supply. It is rather the rate of originary interest that determines both the demand for and the supply of capital and capital goods. It determines how much of the available supply of goods is to be devoted to consumption in the immediate future and how much to provision for remoter periods of the future.

People do not save and accumulate capital because there is interest. Interest is neither the impetus to saving nor the reward or the compensation granted for abstaining from immediate consumption. It is the ratio in the mutual valuation of present goods as against future goods.

The loan market does not determine the rate of interest. It adjusts the rate of interest on loans to the rate of originary interest as manifested in the discount of future goods.

Originary interest is a category of human action. It is operative in any valuation of external things and can never disappear. If one day the state of affairs were to return which was actual at the close of the first millennium of the Christian era when some people believed that the ultimate end of all earthly things was impending, men would stop providing for future secular wants. The factors of production would in their eyes become useless and worthless. The discount of future goods as against present goods would not vanish. It would, on the contrary, increase beyond all measure. On the other hand, the fading away of originary interest would mean that people do not care at all for want-satisfaction in nearer periods of the future. It would mean that they prefer to an apple available today, tomorrow, in one year or in ten years, tow apples available in a thousand or ten thousand years.

We cannot even think of a world in which originary interest would not exist as an inexorable element in every kind of action. Whether there is or is not division of labor and social cooperation and whether there is or is not division of labor and social cooperation and whether society is organized on the basis of private or of public control of the means of production, originary interest is always present. In a socialist commonwealth its role would not differ from that in the market economy.

Bohm-Bawerk has once for all unmasked the fallacies of the naive productivity explanations of interest, i.e., of the idea that interest is the expression of the physical productivity of factors of production. However, Bohm-Bawerk has himself based his own theory to some extent on the productivity approach. In referring in his explanation to the technological superiority of more time-consuming, roundabout processes of production, he avoids the crudity of the naive

productivity fallacies. But in fact he returns, although in a subtler form, to the productivity approach. Those later economists who, neglecting the time-preference idea, have stressed exclusively the productivity idea contained in Bohm-Bawerk's theory cannot help concluding that originary interest must disappear if men were one day to reach a state of affairs in which no further lengthening of the period of production could bring about a further increase in productivity.² This is, however, utterly wrong. Originary interest cannot disappear as long as there is scarcity and therefore action.

As long as the world is not transformed into a land of Cockaigne, men are faced with scarcity and must act and economize; they are forced to choose between satisfaction in nearer and in remoter periods of the future because neither for the former nor for the latter can full contentment be attained. Then a change in the employment of factors of production which withdraws such factors from their employment for want-satisfaction in the remoter future must necessarily impair the state of satisfaction in the nearer future and improve it in the remoter future. If we were to assume that this is not the case, we should become embroiled in insoluble contradictions. We may at best think of a state of affairs in which technological knowledge and skill have reached a point beyond which no further progress is possible for mortal men. No new processes increasing the output per unit of input can henceforth be invented. But if we suppose that some factors of production are scarce, we must not assume that all processes which—apart from the time they absorb—are the most productive ones are fully utilized, and that no process rendering a smaller output per unit of input is resorted to merely because of the fact that it produces its final result sooner than other, physically more productive processes. Scarcity of factors of production means that we are in a position to draft plans for the improvement of our well-being the realization of which is unfeasible because of the insufficient quantity of the means available. It is precisely the unfeasibility of such desirable improvements that constitutes the element of scarcity. The reasoning of the modern supporters of the productivity approach is misled by the connotations of Bohm-Bawerk's term *roundabout methods of production* and the idea of technological

2. Cf. Hayek, "The Mythology of Capital," *The Quarterly Journal of Economics*, L (1936), 223 ff. However Professor Hayek has since partly changed his point of view. (Cf. his article "Time-Preference and Productivity, a Reconsideration," *Economica*, XII [1945], 22-25.) But the idea criticized in the text is still widely held by economists.

improvement which it suggests. However, if there is scarcity, there must always be an unused technological opportunity to improve the state of well-being by a lengthening of the period of production in some branches of industry, regardless of whether or not the state of technological knowledge has changed. If the means are scarce, if the praxeological correlation of ends and means still exists, there are by logical necessity unsatisfied wants with regard both to nearer and to remoter periods of the future. There are always goods the procurement of which we must forego because the way that leads to their production is too long and would prevent us from satisfying more urgent needs. The fact that we do not provide more amply for the future is the outcome of a weighing of satisfaction in nearer periods of the future against satisfaction in remoter periods of the future. The ratio which is the outcome of this valuation is originary interest.

In such a world of perfect technological knowledge a promoter drafts a plan *A* according to which a hotel in picturesque, but not easily accessible, mountain districts and the roads leading to it should be built. In examining the practicability of this plan he discovers that the means available are not sufficient for its execution. Calculating the prospects of the profitability of the investment, he comes to the conclusion that the expected proceeds are not great enough to cover the costs of material and labor to be expended and interest on the capital to be invested. He renounces the execution of project *A* and embarks instead upon the realization of another plan, *B*. According to plan *B* the hotel is to be erected in a more easily accessible location which does not offer all the advantages of the picturesque landscape which plan *A* had selected, but in which it can be built either with lower costs of construction or finished in a shorter time. If no interest on the capital invested were to enter into the calculation, the illusion could arise that the state of the market data—supply of capital goods and the valuations of the public—allows for the execution of plan *A*. However, the realization of plan *A* would withdraw scarce factors of production from employments in which they could satisfy wants considered more urgent by the consumers. It would mean a manifest malinvestment, a squandering of the means available.

A lengthening of the period of production can increase the quantity of output per unit of input or produce goods which cannot be produced at all within a shorter period of production. But it is not true that the imputation of the value of this additional wealth to the capital goods required for the lengthening of the period of production generates interest. If one were to assume this, one would relapse into the crassest errors of the productivity

approach, irrefutably exploded by Bohm-Bawerk. The contribution of the complementary factors of production to the result of the process is the reason for their being considered as valuable; it explains the prices paid for them and is fully taken into account in the determination of these prices. No residuum is left that is not accounted for and could explain interest.

It has been asserted that in the imaginary construction of the evenly rotating economy no interest would appear.³ However, it can be shown that this assertion is incompatible with the assumptions on which the construction of the evenly rotating economy is based.

We begin with the distinction between two classes of saving: plain saving and capitalist saving. Plain saving is merely the piling up of consumers' goods for later consumption. Capitalist saving is the accumulation of goods which are designed for an improvement of production processes. The aim of plain saving is later consumption; it is merely postponement of consumption. Sooner or later the goods accumulated will be consumed and nothing will be left. The aim of capitalist saving is first an improvement in the productivity of effort. It accumulates capital goods which are employed for further production and are not merely reserves for later consumption. The boom derived from capitalist saving is the increase of the quantity of goods produced or the production of goods which could not be produced at all without its aid. In constructing the image of an evenly rotating (static) economy, economists disregard the process of capital accumulation; the capital goods are given and remain, as, according to the underlying assumptions, no changes occur in the data. There is neither accumulation of new capital through saving, nor consumption of capital available through a surplus of consumption over income, i.e., current production minus the funds required for the maintenance of capital. It is now our task to demonstrate that these assumptions are incompatible with the idea that there is no interest.

There is no need to dwell, in this reasoning, upon plain saving. The objective of plain saving is to provide for a future in which the saver could possibly be less amply supplied than in the present. Yet, one of the fundamental assumptions characterizing the imaginary construction of the evenly rotating economy is that the future does not differ at all from the present, that the actors are fully aware of this fact and act accordingly.

3. Cf. J. Schumpeter, *The Theory of Economic Development*, trans. by R. Opie (Cambridge, 1934), pp. 34-46, 54.

Hence, in the frame of this construction, no room is left for the phenomenon of plain saving.

It is different with the fruit of capitalist saving, the accumulated stock of capital goods. There is in the evenly rotating economy neither saving and accumulation of additional capital goods nor eating up of already existing capital goods. Both phenomena would amount to a change in the data and would thus disturb the even rotation of such an imaginary system. Now, the magnitude of saving and capital accumulation in the past—i.e., in the period preceding the establishment of the evenly rotating economy—was adjusted to the height of the rate of interest. If—with the establishment of the conditions of the evenly rotating economy—the owners of the capital goods were no longer to receive any interest, the conditions which were operative in the allocation of the available stocks of goods to the satisfaction of wants in the various periods of the future would be upset. The altered state of affairs requires a new allocation. Also in the evenly rotating economy the difference in the valuation of want-satisfaction in various periods of the future cannot disappear. Also in the frame of this imaginary construction, people will assign a higher value to an apple available today as against an apple available in ten or a hundred years. If the capitalist no longer receives interest, the balance between satisfaction in nearer and remoter periods of the future is disarranged. The fact that a capitalist has maintained his capital at just 100,000 dollars was conditioned by the fact that 100,000 present dollars were equal to 105,000 dollars available twelve months later. These 5,000 dollars were in his eyes sufficient to outweigh the advantages to be expected from an instantaneous consumption of a part of this sum. If interest payments are eliminated, capital consumption ensues.

This is the essential deficiency of the static system as Schumpeter depicts it. It is not sufficient to assume that the capital equipment of such a system has been accumulated in the past, that it is now available to the extent of this previous accumulation and is henceforth unalterably maintained at this level. We must also assign in the frame of this imaginary system a role to the operation of forces which bring about such a maintenance. If one eliminates the capitalist's role as receiver of interest, one replaces it by the capitalist's role as consumer of capital. There is no longer any reason why the owner of capital goods should abstain from employing them for consumption. Under the assumptions implied in the imaginary construction of static conditions (the evenly rotating economy) there is no need to keep them in reserve for rainy days. But even if, inconsistently enough, we were to

assume that a part of them is devoted to this purpose and therefore withheld from current consumption, at least that part of capital will be consumed which corresponds to the amount that capitalist saving exceeds plain saving.⁴

If there were no originary interest, capital goods would not be devoted to immediate consumption and capital would not be consumed. On the contrary, under such an unthinkable and unimaginable state of affairs there would be no consumption at all, but only saving, accumulation of capital, and investment. Not the impossible disappearance of originary interest, but the abolition of payment of interest to the owners of capital, would result in capital consumption. The capitalists would consume their capital goods and their capital precisely because there is originary interest and present want-satisfaction is preferred to later satisfaction.

Therefore there cannot be any question of abolishing interest by any institutions, laws, or devices of bank manipulation. He who wants to "abolish" interest will have to induce people to value an apple available in a hundred years no less than a present apple. What can be abolished by laws and decrees is merely the right of the capitalists to receive interest. But such decrees would bring about capital consumption and would very soon throw mankind back into the original state of natural poverty.

3. The Height of Interest Rates

In plain saving and in the capitalist saving of isolated economic actors the difference in the valuation of want-satisfaction in various periods of the future manifests itself in the extent to which people provide in a more ample way for nearer than for remoter periods of the future. Under the conditions of a market economy the rate of originary interest is, provided the assumptions involved in the imaginary construction of the evenly rotating economy are present, equal to the ratio of a definite amount of money available today and the amount available at a later date which is considered as its equivalent.

The rate of originary interest directs the investment activities of the entrepreneurs. It determines the length of waiting time and of the period of production in every branch of industry.

People often raise the question of which rate of interest, a "high" or a "low," stimulates saving and capital accumulation more and which less. The question makes no sense. The lower the discount attached to future goods is, the lower is the rate of originary interest. People do not save more because

4. Cf. Robbins, "On a Certain Ambiguity in the Conception of Stationary Equilibrium," *The Economic Journal*, XL (1930), 211 ff.

the rate of originary interest rises, and the rate of originary interest does not drop on account of an increase in the amount of saving. Changes in the originary rates of interest and in the amount of saving are—other things, especially the institutional conditions, being equal—two aspects of the same phenomenon. The disappearance of originary interest would be tantamount to the disappearance of consumption. The increase of originary interest beyond all measure would be tantamount to the disappearance of saving and any provision for the future.

The quantity of the available supply of capital goods influences neither the rate of originary interest nor the amount of further saving. Even the most plentiful supply of capital need not necessarily bring about either a lowering of the rate of originary interest or a drop in the propensity to save. The increase in capital accumulation and the per capita quota of capital invested which is a characteristic mark of economically advanced nations does not necessarily either lower the rate of originary interest or weaken the propensity of individuals to make additional savings. People are, in dealing with these problems, for the most part misled by comparing merely the market rates of interest as they are determined on the loan market. However, these gross rates are not merely expressive of the height of originary interest. They contain, as will be shown later, other elements besides, the effect of which accounts for the fact that the gross rates are as a rule higher in poorer countries than in richer ones.

It is generally asserted that, other things being equal, the better individuals are supplied for the immediate future, the better they provide for wants for the remoter future. Consequently, it is said, the amount of total saving and capital accumulation within an economic system depends on the arrangement of the population into groups of different income levels. In a society with approximate income equality there is, it is said, less saving than in a society in which there is more inequality. There is a grain of truth in such observations. However, they are statements about psychological facts and as such lack the universal validity and necessity inherent in praxeological statements. Moreover, the other things the equality of which they presuppose comprehend the various individuals' valuations, their subjective value judgment in weighing the pros and cons of immediate consumption and of postponement of consumption. There are certainly many individuals whose behavior they describe correctly, but there also are other individuals who act in a different way. The French peasants, although for the most part people of moderate wealth and income, were in the nineteenth century widely

known for their parsimonious habits, while wealthy members of the aristocracy and heirs of huge fortunes amassed in commerce and industry were no less renowned for their profligacy.

It is therefore impossible to formulate any praxeological theorem concerning the relation of the amount of capital available in the whole nation or to individual people on the one hand and the amount of saving or capital consumption and the height of the originary rate of interest on the other hand. The allocation of scarce resources to want-satisfaction in various periods of the future is determined by value judgments and indirectly by all those factors which constitute the individuality of the acting man.

4. Originary Interest in the Changing Economy

So far we have dealt with the problem of originary interest under certain assumptions: that the turnover of goods is effected by the employment of neutral money; that saving, capital accumulation, and the determination of interest rates are not hampered by institutional obstacles; and that the whole economic process goes on in the frame of an evenly rotating economy. We shall drop the first two of these assumptions in the following chapter. Now we want to deal with originary interest in a changing economy.

He who wants to provide for the satisfaction of future needs must correctly anticipate these needs. If he fails in this understanding of the future, his provision will prove less satisfactory or totally futile. There is no such thing as an abstract saving that could provide for all classes of want-satisfaction and would be neutral with regard to changes occurring in conditions and valuations. Originary interest can therefore in the changing economy never appear in a pure unalloyed form. It is only in the imaginary construction of the evenly rotating economy that the mere passing of time matures originary interest; in the passage of time and with the progress of the process of production more and more value accrues, as it were, to the complementary factors of production; with the termination of the process of production the lapse of time has generated in the price of the product the full quota of originary interest. In the changing economy during the period of production there also arise synchronously other changes in valuations. Some goods are valued higher than previously, some lower. These alterations are the source from which entrepreneurial profits and losses stem. Only those entrepreneurs who in their planning have correctly anticipated the future state of the market are in a position to reap, in selling the products, an excess over the costs of production (inclusive of net originary interest) expended. An

entrepreneur who has failed in his speculative understanding of the future can sell his products, if at all, only at prices which do not cover completely his expenditures plus originary interest on the capital invested.

Like entrepreneurial profit and loss, interest is not a price, but a magnitude which is to be disengaged by a particular mode of computation from the price of the products of successful business operations. The gross difference between the price at which a commodity is sold and the costs expended in its production (exclusive of interest on the capital invested) was called profit in the terminology of British classical economics.⁵ Modern economics conceives this magnitude as a complex of catalactically disparate items. The excess of gross receipts over expenditures which the classical economists called profit includes the price for the entrepreneur's own labor employed in the process of production, interest on the capital invested, and finally entrepreneurial profit proper. If such an excess has not been reaped at all in the sale of the products, the entrepreneur not only fails to get profit proper, he receives neither an equivalent for the market value of the labor he has contributed nor interest on the capital invested.

The breaking down of gross profit (in the classical sense of the term) into managerial wages, interest, and entrepreneurial profit is not merely a device of economic theory. It developed, with progressing perfection in business practices of accountancy and calculation, in the field of commercial routine independently of the reasoning of the economists. The judicious and sensible businessman does not attach practical significance to the confused and garbled concept of profit as employed by the classical economists. His notion of costs of production includes the potential market price of his own services contributed, the interest paid on capital borrowed, and the potential interest he could earn, according to the conditions of the market, on his own capital invested in the enterprise by lending it to other people. Only the excess of proceeds over the costs so calculated is in his eyes entrepreneurial profit.⁶

The precipitation of entrepreneurial wages from the complex of all the other items included in the profit concept of classical economics presents no particular problem. It is more difficult to sunder entrepreneurial profit from originary interest. In the changing economy interest stipulated in loan

5. Cf. R. Whatley, *Elements of Logic* (9th ed. London, 1848), pp. 354 ff.; E. Cannan, *A History of the Theories of Production and Distribution in English Political Economy from 1776 to 1848* (3d ed. London, 1924), pp. 189 ff.

6. But, of course, the present-day intentional confusion of all economic concepts is conducive to obscuring this distinction. Thus, in the United States, in dealing with the dividends paid by corporations people speak of "profits."

contracts is always a gross magnitude out of which the pure rate of originary interest must be computed by a particular process of computation and analytical repartition. It has been shown already that in every act of lending, even apart from the problem of changes in the monetary unit's purchasing power, there is an element of entrepreneurial venture. The granting of credit is necessarily always an entrepreneurial speculation which can possibly result in failure and the loss of a part or of the total amount lent. Every interest stipulated and paid in loans includes not only originary interest but also entrepreneurial profit.

This fact for a long time misled the attempts to construct a satisfactory theory of interest. It was only the elaboration of the imaginary construction of the evenly rotating economy that made it possible to distinguish precisely between originary interest and entrepreneurial profit and loss.

5. The Computation of Interest

Originary interest is the outgrowth of valuations unceasingly fluctuating and changing. It fluctuates and changes with them. The custom of computing interest pro anno is merely commercial usage and a convenient rule of reckoning. It does not affect the height of the interest rates as determined by the market.

The activities of the entrepreneurs tend toward the establishment of a uniform rate of originary interest in the whole market economy. If there turns up in one sector of the market a margin between the prices of present goods and those of future goods which deviates from the margin prevailing in other sectors, a trend toward equalization is brought about by the striving of businessmen to enter those sectors in which this margin is higher and to avoid those in which it is lower. The final rate of originary interest is the same in all parts of the market of the evenly rotating economy.

The valuations resulting in the emergence of originary interest prefer satisfaction in a nearer period of the future to satisfaction of the same kind and extent in a remoter period of the future. Nothing would justify the assumption that this discounting of satisfaction in remoter periods progresses continuously and evenly. If we were to assume this, we would imply that the period of provision is infinite. However, the mere fact that individuals differ in their provision for future needs and that even to the most provident actor provision beyond a definite period appears supererogatory, forbids us to think of the period of provision as infinite.

The usages of the loan market must not mislead us. It is customary to

stipulate a uniform rate of interest for the whole duration of a loan contract.⁷ and to apply a uniform rate in computing compound interest. The real determination of interest rates is independent of these and other arithmetical devices of interest computation. If the rate of interest is unalterably fixed by contract for a period of time, intervening changes in the market rate of interest are reflected in corresponding changes in the prices paid for the principal, due allowance being made for the fact that the amount of principal to be paid back at the maturity of the loan is unalterably stipulated. It does not affect the result whether one calculates with an unchanging rate of interest and changing prices of the principal or with changing interest rates and an unchanging amount of the principal, or with changes in both magnitudes.

The terms of a loan contract are not independent of the stipulated duration of the loan. Not only because those components of the gross rate of market interest which made it deviate from the rate of originary interest are affected by differences in the duration of the loan, but also on account of factors which bring about changes in the rate of originary interest, loan contracts are valued and appraised differently according to the duration of the loan stipulated.

7. There are, of course, also deviations from this usage.

XX. INTEREST, CREDIT EXPANSION, AND THE TRADE CYCLE

1. The Problems

IN 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 originary interest, i.e., the difference between the valuation of present and future goods? Can events on the loan market partially or totally eliminate originary 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 originary 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.¹

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 originary 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.²

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*, originary interest increases beyond all measure because future goods become entirely worthless; in case *b*, originary 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 originary 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 originary 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 originary interest; there only prevails a tendency toward the establishment of such uniformity. Before the final state of originary 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.³

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 *catalactic 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, *catalactic 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 originary 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 originary interest may correspond. In the rate of originary 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 originary interest has taken place. If this happens, the market rate deviates from the height which the state of originary 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 Originary Interest

Like every change in the market data, changes in the money relation can possibly influence the rate of originary 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 originary 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 originary 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.⁴

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 originary 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 originary 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 originary 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 originary 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 originary rate of interest, and forces come into operation which tend to adjust it anew to the ratio which corresponds to that of originary interest. It may happen that in the period of time which this adjustment requires, the height of originary 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 originary 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 originary 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.⁵ 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 originary 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 originary 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.⁶ 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.

INTEREST, CREDIT EXPANSION, AND THE TRADE CYCLE 555

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 counter-balances 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 originary 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 originary 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 $r + p1 + p2 + p2 + p3 + p4$ 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 1926-29.⁷

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 $r + p_1 + p_2$ as if it were $r + p_1 + p_2 + p_3 + p_4$. 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).