oneself against the fallacy that this necessarily implies a decrease in the average cost of production. It is true that within the aggregate of imperfectly divisible factors each of them is now better utilized, that therefore costs of production as far as they are caused by the cooperation of these factors remain unchanged, and that the quotas falling to a unit of output are decreasing. But on the other hand an increase in the employment of the perfectly factors of production can be attained only by withdrawing them from other employments. The value of these other employments increases, other things being equal, with their shrinking; the price of these perfectly divisible factors tends to rise as more of them are used for the better utilization of the productive capacity of the aggregate of the not further divisible factors in question. One must not limit the consideration of our problem to the case in which the additional quantity of *p* is withdrawn from other enterprises producing the same product in a less efficient way and forces these enterprises to restrict their output. It is obvious that in this case—competition between a more and a less efficient enterprise producing the same article out of the same raw materials—the average cost of production is decreasing in the expanding plant. A more general scrutiny of the problem leads to a different result. If the units of *p* are withdrawn from other employments in which they would have been utilized for the production of other articles, there emerges a tendency toward an increase in the price of these units. This tendency may be compensated by accidental tendencies operating in the opposite direction; it may sometimes by so feeble that its effects are negligible. But it is always present and potentially influences the configuration of costs.

Finally we consider—as case *C*—a state of affairs in which various imperfectly divisible factors of production can be divided only in such a way that, given the conditions of the market, any size which can be chosen for their assemblage in a production aggregate does not allow for a combination in which full utilization of the productive capacity of one factor makes possible full utilization of the productive capacity of the other imperfectly divisible factors. This case *c* alone is of practical significance, while the cases *A* and *B* hardly play any role in real business. The characteristic feature of case *C* is that the configuration of production costs varies unevenly. If all imperfectly divisible factors are utilized to less than full capacity, an expansion of production results in a decrease of average costs of production unless a rise in the prices to be paid for the perfectly divisible factors counterbalances this outcome. But as soon as full utilization of the capacity of one of the imperfectly divisible factors is attained, further

expansion of production causes a sudden sharp rise in costs. Then again a tendency toward a decrease in average production costs sets in and goes on working until full utilization of one of the imperfectly divisible factors is attained anew.

Other things being equal, the more production of a certain article increases, the more factors of production must be withdrawn from other employments in which they would have been used for the production of other articles. Hence—other things being equal—average production costs increase with the increase in the quantity produced. But this general law is by sections superseded by the phenomenon that not all factors of production are perfectly divisible and that, as far as they can be divided, they are not divisible in such a way that full utilization of one of them results in full utilization of the other imperfectly divisible factors.

The planning entrepreneur is always faced with the question: To what extent will the anticipated prices of the products exceed the anticipated costs? If the entrepreneur is still free with regard to the project in question, because he has not yet made any inconvertible investments for its realization, it is average costs that count for him. But if he has already a vested interest in the line of business concerned, he sees things from the angle of additional costs to be expended. He who already owns a not fully utilized production aggregate does not take into account average cost of production but marginal cost. Without regard to the amount already expended for inconvertible investments he is merely interested in the question whether or not the proceeds from the sale of an additional quantity of products will exceed the additional cost incurred by their production. Even if the whole amount invested in the inconvertible production facilities must be wiped off as a loss, he goes on producing provided he expects a reasonable[4] surplus of proceeds over current costs.

With regard to popular errors it is necessary to emphasize that if the conditions required for the appearance of monopoly prices are not present, an entrepreneur is not in a position to increase his net returns by restricting production beyond the amount conforming with consumers' demand. But this problem will be dealt with later in section 6.

That a factor of production is not perfectly divisible does not always mean that it can be constructed and employed in one size only. This, of course, may occur in some cases. But as a rule it is possible to vary the dimensions

4. Reasonable means in this connection that the anticipated returns on the convertible capital used for the continuation of production are at least not lower than the anticipated returns on its use for other projects.

of these factors. If out of the various dimensions which are possible for such a factor—e.g., a machine—one dimension is distinguished by the fact that the costs incurred by its production and operation are rendered lower per unit of the productive services than those for other dimensions, things are essentially identical. Then the superiority of the bigger plant does not consist in the fact that it utilizes a machine to full capacity while the smaller plant utilizes only a part of the capacity of a machine of the same size. It consists rather in the fact that the bigger p;ant employs a machine which operates with a better utilization of the factors of production required for its construction and operation than does the smaller machine employed by the smaller plant.

The role played in all branches of production by the fact that many factors of production are not perfectly divisible is very great. It is of paramount importance in the course of industrial affairs. But one must guard oneself against many misinterpretations of its significance.

One of these errors was the doctrine according to which in the processing industries there prevails a law of increasing returns, while ion agriculture and mining a law of decreasing returns prevails. The fallacies implied have been exploded above.[5] As far as there is a difference in this regard between conditions in agriculture and those in the processing industries, differences in the data bring them about. The immobility of the soil and the fact that the performance of the various agricultural operations depends on the seasons make it impossible for farmers to take advantage of the capacity of many movable factors of production to the degree which conditions in manufacturing for the most part allow. The optimum size of a production outfit in agricultural production is as a rule much smaller than in the processing industries. It is obvious and does not need any further explanation why the concentration of farming cannot be pushed to anything near the degree obtaining in the processing industries.

However, the inequality in the distribution of natural resources over the earth's surface, which is one of the two factors making for the higher productivity of the division of labor, puts a limit to the progress of concentration in the processing industries also. The tendency toward a progressive specialization and the concentration of integrated industrial processes in only a few plants is counteracted by the geographical dispersion of natural resources. The fact that the production of raw materials and foodstuffs cannot be centralized and forces people to disperse over the various parts of

5. Cf. above, p. 130.

the earth's surface enjoins also upon the processing industries a certain degree of decentralization. It makes it necessary to consider the problems of transportation as a particular factor of production costs. The costs of transportation must be weighed against the economies to be expected from more thoroughgoing specialization. While in some branches of the processing industries the utmost concentration is the most adequate method or reducing costs, in other branches a certain degree of decentralization is more advantageous. In the servicing trades the disadvantages of concentration become so great that they almost entirely overweigh the advantages derived.

Then a historical factor comes into play. In the past capital goods were immobilized on sites on which our contemporaries would not have set them. It is immaterial whether or not this immobilization was the most economical procedure to which the generations that brought it about could resort. In any event the present generation is faced with a *fait accompli*. It must adjust its operations to the fact and it must take it into account in dealing with problems of the location of the processing industries.[6]

Finally there are institutional factors. There are trade and migration barriers. There are differences in political organization and methods of government between various countries. Vast areas are administered in such a way that it is practically out of the question to choose them as a seat for any capital investment no matter how favorable their physical conditions may be.

Entrepreneurial cost accounting must deal with all these geographical, historical and institutional factors. But even apart from them there are purely technical factors limiting the optimum size of plants and firms. The greater plant or firm may require provisions and procedures which the smaller plant or firm can avoid. In many instances the outlays caused by such provisions and procedures may be overcompensated by the reduction in costs derived from better utilization of the capacity of some of the not perfectly divisible factors employed. In other instances this may not be the case.

Under capitalism the arithmetical operations required for cost accounting and the confrontation of costs and proceeds can easily be effected as there are methods of economic calculation available. However, cost accounting and calculation of the economic significance of business projects under consideration is not merely a mathematical problem which can be solved satisfactorily by all those familiar with the elementary rules of arithmetic.

6. For a thoroughgoing treatment of the conservatism enjoined upon men by the limited convertibility of many capital goods, the historically determined element in production, see below, pp. 503-514.

The main question is the determination of the money equivalents of the items which are to enter into the calculation. It is a mistake to assume, as many economists do, that these equivalents are given magnitudes, uniquely determined by the state of economic conditions. They are speculative anticipations of uncertain future conditions and as such depend on the entrepreneur's understanding of the future state of the market. The term *fixed* costs is also in this regard somewhat misleading.

Every action aims at the best possible supplying of future needs. To achieve these ends it must make the best possible use of the available factors of production. However, the historical process which brought about the present state of factors available is beside the point. What counts and influences the decisions concerning future action is solely the outcome of this historical process, the quantity and the quality of the factors available today. These factors are appraised only with regard to their ability to render productive services for the removal of future uneasiness. The amount of money spent in the past for their production and acquisition is immaterial.

It has already been pointed out that an entrepreneur who by the time he has to make a new decision has expended money for the realization of a definite project is in a different position from that of a man who starts afresh. The former owns a complex of inconvertible factors of production which he can employ for certain purposes. His decisions concerning further action will be influenced by this fact. But he appraises this complex not according to what he expended in the past for its acquisition. He appraises it exclusively from the point of view of its usefulness for future action. The fact that he has spent more or less for its acquisition is insignificant. This fact is only a factor in determining the amount of the entrepreneur's past losses or profits and the present state of his fortune. It is an element in the historical process that brought about the present state of the supply of factors of production and as such it is of importance for future action. But it does not count for the planning of future action and the calculation regarding such action. It is irrelevant that the entries in the firm's books differ from the actual price of such inconvertible factors of production.

Of course, such consummated losses or profits may motivate a firm to operate in a different way from which it would if it were not affected by them. Past losses may render a firm's financial position precarious, especially if they bring about indebtedness and burden it with payments of interest and installments on the principal. However, it is not correct to refer to such payments as a part of fixed costs. They have no relation whatever to

the current operations. They are not caused by the process of production, but by the methods employed by the entrepreneur in the past for the procurement of the capital and capital goods needed. They ar only accidental with reference to the going concern. But they may enforce upon the firm in question a conduct of affairs which it would not adopt if it were financially stronger. The urgent need for cash in order to meet payments due does not affect its cost accounting, but its appraisal of ready cash as compared with cash that can only be received at a later day. It may impel the firm to sell inventories at an inappropriate moment and to use its durable production equipment in a way that unduly neglects its conservation for later use.

It is immaterial for the problems of cost accounting whether a firm owns the capital invested in its enterprise or whether it has borrowed a greater or smaller part of it and is bound to comply with the terms of a loan contract rigidly fixing the rate of interest and the dates of maturity for interest and principal. The costs of production include only the interest on the capital which is still existent and working in the enterprise. It does not include interest on capital squandered in the past by bad investment or by inefficiency in the conduct of current business operations. The task incumbent upon the businessman is always to use the supply of capital goods *now* available in the best possible way for the satisfaction of future needs. In the pursuit of this aim he must not be misled by past errors and failures the consequences of which cannot be brushed away. A plant may have been constructed in the past which would not have been built if one had better forecast the present situation. It is vain to lament this historical fact. The main thing is to find out whether or not the plant can still render any service and, if this question is answered in the affirmative, how it can be best utilized. It is certainly sad for the individual entrepreneur that he did not avoid errors. The losses incurred impair his financial situation. They do not affect the costs to be taken into account in planning further action.

It is important to stress this point because it has been distorted in the current interpretation and justification of various measures. One does not "reduce costs" by alleviating some firms' and corporations' burden of debts. A policy of wiping out debts or the interest due on them totally or in part does not reduce costs. It transfers wealth from creditors to debtors; it shifts the incidence of losses incurred in the past from one group of people to another group, e.g., from the owners of common stock to those of preferred stock and corporate bonds. This argument of cost reduction is often ad-

vanced in favor of currency devaluation. It is no less fallacious in this case than all the other arguments brought forward for this purpose.

What are commonly called fixed costs are also costs incurred by the exploitation of the already available factors of production which are either rigidly inconvertible or can be adapted for other productive purposes only at a considerable loss. These factors are of a more durable character than the other factors of production required. But they are not permanent. They are used up in the process of production. With each unit of product turned out a part of the machine's power to produce is exhausted. The extant of this attrition can be precisely ascertained by technology and can be appraised accordingly in terms of money.

However, it is not only this money equivalent of the machine's wearing out which the entrepreneurial calculation has to consider. The businessman is not merely concerned with the duration of the machine's technological life. He must take into account the future state of the market. Although a machine may still be technologically perfectly utilizable, market conditions may render it obsolete and worthless. If the demand for its products drops considerably or disappears altogether or if more efficient methods for supplying the consumers with these products appear, the machine is economically merely scrap iron. In planning the conduct of his business the entrepreneur must pay full regard to the anticipated future state of the market. The amount of "fixed" costs which enter into his calculation depends on his understanding of future events. It is not to be fixed simply by technological reasoning.

The technologist may determine the optimum for a production aggregate's utilization. But this technological optimum may differ from that which the entrepreneur on the ground of his judgment concerning future market conditions enters into his economic calculation. Let us assume that a factory is equipped with machines which can be utilized for a period of ten years. Every year 10 per cent of their prime costs is laid aside for depreciation. In the third year market conditions place a dilemma before the entrepreneur. He can double his output for the year and sell it at a price which (apart from covering the increase in variable costs) exceeds the quota of depreciation for the current year and the present value of the last depreciation quota. But this doubling of production trebles the wearing out of the equipment and the surplus proceeds from the sale of the double quantity of products are not great enough to make good also for the present value of the depreciation quota of the ninth year. If the entrepreneur were to consider the annual depreciation quota as a rigid element for his

calculation, he would have to deem the doubling of production as not profitable, as additional proceeds lag behind additional cost. He would abstain from expanding production beyond the technological optimum. But the entrepreneur calculates in a different way, although in his accountancy he may lay aside the same quota for depreciation every year. Whether or not the entrepreneur prefers a fraction of the present value of the ninth year's depreciation quota to the technological services which the machines could render him in the ninth year, depends on his opinion concerning the future state of the market.

Public opinion, governments and legislators, and the tax laws look upon a business outfit as a source of permanent revenue. They believe that the entrepreneur who makes due allowance for capital maintenance by annual depreciation quotas will always be in a position to reap a reasonable return from the capital invested in his durable producers' goods. Real conditions are different. A production aggregate such as a plant and its equipment is a factor of production whose usefulness depends on changing market conditions and the skill of the entrepreneur in employing it in accordance with the change in conditions.

There is in the field of economic calculation nothing that is certain in the sense in which this term is used with regard to technological facts. The essential elements of economic calculation are speculative anticipations of future conditions. Commercial usages and customs and commercial laws have established definite rules for accountancy and auditing. There is accuracy in the keeping of books. But they are accurate only with regard to these rules. The book values do not reflect precisely the real state of affairs. The market value of an aggregate of durable producers' goods may differ from the nominal figures the books show. The proof is that the Stock Exchange appraises them without any regard to these figures.

Cost accounting is therefore not an arithmetical process which can be established and examined by an indifferent umpire. It does not operate with uniquely determined magnitudes which can be found out in an objective way. Its essential items are the result of an understanding of future conditions, necessarily always colored by the entrepreneur's opinion about the future state of the market.

Attempts to establish cost accounts on an "impartial" basis are doomed to failure. Calculating costs is a mental tool of action, the purposive design to make the best of the available means for an improvement of future conditions. It is necessarily volitional, not factual. In the hands of an indifferent umpire it

changes its character entirely. The umpire does not look forward to the future. He looks backward to the dead past and to rigid rules which are useless for real life and action. He does not anticipate changes. He is unwittingly guided by the prepossession that the evenly rotating economy is the normal and most desirable state of human affairs. Profits do not fit into his scheme. He has a confused idea about a "fair" rate of profit or a "fair" return on capital invested. However, there are no such things. In the evenly rotating economy there are no profits. In a changing economy profits are not determined with reference to any set of rules by which they could be classified as fair or unfair. Profits are never normal. Where there is normality, i.e., absence of change, no profits can emerge.

5. Logical Catallactics Versus Mathematical Catallactics

The problems of prices and costs have been treated also with mathematical methods. There have even been economists who held that the only appropriate method of dealing with economic problems is the mathematical method and who derided the logical economists as "literary" economists.

If this antagonism between the logical and the mathematical economists were merely a disagreement concerning the most adequate procedure to be applied in the study of economics, it would be superfluous to pay attention to it. The better method would prove its preeminence by bringing about better results. It may also be that different varieties of procedure are necessary for the solution of different problems and that for some of them one method is more useful than the other.

However, this is not a dispute about heuristic questions, but a controversy concerning the foundations of economics. The mathematical method must be rejected not only on account of its barrenness. It is an entirely vicious method, starting from false assumptions and leading to fallacious inferences. Its syllogisms are not only sterile; they divert the mind from the study of the real problems and distort the relations between the various phenomena.

The ideas and procedures of the mathematical economists are not uniform. There are three main currents of thought which must be dealt with separately.

The first variety is represented by the statisticians who aim at discovering economic laws from the study of economic experience. They aim to transform economics into a "quantitative" science. Their program is condensed in the motto of the Econometric Society: Science is measurement.

The fundamental error implied in this reasoning has been shown above.[7] Experience of economic history is always experience of complex phenomena. It can never convey knowledge of the kind the experimenter abstracts from a laboratory experiment. statistics is a method for the presentation of historical facts concerning prices and other relevant data of human action. It is not economics and cannot produce economic theorems and theories. The statistics of prices is economic history. The insight that, *ceteris paribus*, an increase in demand must result in an increase in prices is not derived from experience. Nobody ever was or ever will be in a position to observe a change in one of the market data *ceteris paribus*. There is no such thing as quantitative economics. All economic quantities we know about are data of economic history. No reasonable man can contend that the relation between price and supply is in general, or in respect of certain commodities, constant. We know, on the contrary, that external phenomena affect different people in different ways, that the reactions of the same people to the same external events vary, and that it is not possible to assign individuals to classes of men reacting in the same way. This insight is a product of our aprioristic theory. It is true the empiricists reject this theory; they pretend that they aim to learn only from historical experience. However, they contradict their own principles as soon as they pass beyond the unadulterated recording of individual single prices and begin to construct series and to compute averages. A datum of experience and a statistical fact is only a price paid at a definite time and a definite place for a definite quantity of a certain commodity. The arrangement of various price data in groups and the computation of averages are guided by theoretical deliberations which are logically and temporally antecedent. The extent to which certain attending features and circumstantial contingencies of the price data concerned are taken or not taken into consideration depends on theoretical reasoning of the same kind. Nobody is so bold as to maintain that a rise of a per cent in the supply of any commodity must always—in every country and at any time—result in a fall of b per cent in its price. But as no quantitative economist ever ventured to define precisely on the ground of statistical experience the special conditions producing a definite deviation from the ratio a : b, the futility of his endeavors is manifest. Moreover, money is not a standard for the measurement of prices; it is a medium whose exchange ration varies in the same way, although as a rule not with the same speed and to the same

7. Cf. Above, pp. 31, 55-56.

extent, in which the mutual exchange ratios of the vendible commodities and services vary.

There is hardly any need to dwell longer upon the exposure of the claims of quantitative economics. In spite of all the high-sounding pronouncements of its advocates, nothing has been done for the realization of its program. The late Henry Schultz devoted his research to the measurement of elasticities of demand for various commodities. Professor Paul H. Douglas has praised the outcome of Schultz's studies as "a work as necessary to help make economics a more or less exact science as was the determination of atomic weights for the development of chemistry."[8] The truth is that Schultz never embarked upon a determination of the elasticity of demand for any commodity as such; the data he relied upon were limited to certain geographical areas and historical periods. His result for a definite commodity, for instance potatoes, do not refer to potatoes in general, but to potatoes in the United States in the years from 1875 to 1929.[9] They are, at best, rather questionable and unsatisfactory contributions to various chapters of economic history. They are certainly not steps toward the realization of the confused and contradictory program of quantitative economics. It must be emphasized that the two other varieties of mathematical economics are fully aware of the futility of quantitative economics. For they have never ventured to make any magnitudes as found by the econometricians enter into their formulas and equations and thus to adapt them for the solution of particular problems. There is in the field of human action no means for dealing with future events other than that provided by understanding.

The second field treated by mathematical economists is that of the relation of prices and costs. In dealing with these problems the mathematical economists disregard the operation of the market process and moreover pretend to abstract from the use of money inherent in all economic calculations. However, as they speak of prices and costs in general and confront prices and costs, they tacitly imply the existence and the use of money. Prices are always money prices, and costs cannot be taken into account in economic calculation if not expressed in terms of money. If one does not resort to terms of money, costs are expressed in complex quantities of diverse goods and services to be expended for the procurement of a product. On the other hand prices—if this term is applicable at all to exchange ration determined by

8. Cf. Paul H. Douglas in *Econometrica*, VII, 105.

9. Cf. Henry Schultz, *The Theory and Measurement of Demand* (University of Chicago Press, 1938), pp. 405-427.

barter—are the enumeration of quantities of various goods against which the "seller" can exchange a definite supply. The goods which are referred to in such "prices" are not the same to which the "costs" refer. A comparison of such prices in kind and costs in kind is not feasible. That the seller values the goods he gives away less than those he receives in exchange for them, that the seller and the buyer disagree with regard to the subjective valuation of the two goods exchanged, and that an entrepreneur embarks upon a project only if he expected to receive for the product goods that he values higher than those expended in their production, all this we know already on the ground of praxeological comprehension. It is this aprioristic knowledge that enables us to anticipate the conduct of an entrepreneur who is in a position to resort to economic calculation. But the mathematical economist deludes himself when he pretends to treat these problems in a more general way by omitting any reference to terms of money. It is vain to investigate instances of nonperfect divisibility of factors of production without reference to economic calculation in terms of money. Such a scrutiny can never go beyond the knowledge already available; namely that every entrepreneur is intent upon producing those articles the sale of which will bring him proceeds that he values higher than the total complex of goods expended in their production. But if there is no indirect exchange and if no medium of exchange is in common use, he can succeed, provided he has correctly anticipated the future state of the market, only if he is endowed with a superhuman intellect. He would have to take in at a glance all exchange ratios determined at the market in such a way as to assign in his deliberations precisely the place due to every good according to these ratios.

It cannot be denied that all investigations concerning the relation of prices and costs presuppose both the use of money and the market process. But the mathematical economists shut their eyes to this obvious fact. They formulate equations and draw curves which are supposed to describe reality. In fact they describe only a hypothetical and unrealizable state of affairs, in no way similar to the catallactic problems in question. They substitute algebraic symbols for the determinate terms of money as used in economic calculation and believe that this procedure renders their reasoning more scientific. They strongly impress the gullible layman. In fact they only confuse and muddle things which sare satisfactorily dealt with in textbooks of commercial arithmetic and accountancy.

Some of these mathematicians have gone so far as to declare that economic calculation could be established on the basis of units of utility. They call their methods utility analysis. Their error is shared by the third

variety of mathematical economics.

The characteristic mark of this third group is that they are openly and consciously intent upon solving catallactic problems without any reference to the market process. Their ideal is to construct an economic theory according to the pattern of mechanics. They again and again resort to analogies with classical mechanics which in their opinion is the unique and absolute model of scientific inquiry. There is no need to explain again why this analogy is superficial and misleading and in what respects purposive human action radically differs from motion, the subject matter of mechanics. It is enough to stress one point, viz., the practical significance of the differential equations in both fields.

The deliberations which result in the formulation of an equation are necessarily of a nonmathematical character. The formulation of the equation is the consummation of our knowledge; it does not directly enlarge our knowledge. Yet, in mechanics the equation can render very important practical services. As there exist constant relations between various mechanical elements and as these relations can be ascertained by experiments, it becomes possible to use equations for the solution of definite technological problems. Our modern industrial civilization is mainly an accomplishment of this utilization of the differential equations of physics. No such constant relations exist, however, between economic elements. The equations formulated by mathematical economics remain a useless piece of mental gymnastics and would remain so even it they were to express much more than they really do.

A sound economic deliberation must never forget these two fundamental principles of the theory of value: First, valuing that results in action always means preferring and setting aside; it never means equivalence or indifference. Second, there is no means of comparing the valuations of different individuals or the valuations of the same individuals at different instants other than by establishing whether or not they arrange the alternatives in question in the same order of preference.

In the imaginary construction of the evenly rotating economy all factors of production are employed in such a way that each of them renders the most valuable service. No thinkable and possible change could improve the state of satisfaction; no factor is employed for the satisfaction of a need *a* if this employment prevents the satisfaction of a need *b* that is considered more valuable than the satisfaction of *a*. It is, of course, possible to describe this imaginary state of the allocation of resources in differential equations and

to visualize it graphically in curves. But such devices do not assert anything about the market process. They merely mark out an imaginary situation in which the market process would cease to operate. The mathematical economists disregard the whole theoretical elucidation of the market process and evasively amuse themselves with an auxiliary notion employed in its contest and devoid of any sense when used outside of this context.

In physics we are faced with changes occurring in various sense phenomena. We discover a regularity in the sequence of these changes and these observations lead us to the construction of a science of physics. We know nothing about the ultimate forces actuating these changes. They are for the searching mind ultimately given and defy any further analysis. What we know from observation is the regular concatenation of various observable entities and attributes. It is this mutual interdependence of data that the physicist describes in differential equations.

In praxeology the first fact we know is that men are purposively intent upon bringing about some changes. It is this knowledge that integrates the subject matter of praxeology and differentiates it from the subject matter of the natural sciences. We know the forces behind the changes, and this aprioristic knowledge leads us to a cognition of the praxeological processes. The physicist does not know what electricity "is." He knows only phenomena attributed to something called electricity. But the economist knows what actuates the market process. It is only thanks to this knowledge that he is in a position to distinguish market phenomena from other phenomena and to describe the market process.

Now, the mathematical economist does not contribute anything to the elucidation of the market process. He merely describes an auxiliary makeshift employed by the logical economists as a limiting notion, the definition of a state of affairs in which there is no longer any action and the market process has come to a standstill. That is all he can say. What the logical economist sets forth in words when defining the imaginary constructions of the final state of rest and the evenly rotating economy and what the mathematical economist himself must describe in words before he embarks upon his mathematical work, is translated into algebraic symbols. A superficial analogy is spun out too long, that is all.

Both the logical and the mathematical economists assert that human action ultimately aims at the establishment of such a state of equilibrium and would reach it if all further changes in data were to cease. But the logical economist knows much more than that. He shows how the

activities of enterprising men, the promoters and speculators, eager to profit from discrepancies in the price structure, tend toward eradicating such discrepancies and thereby also toward blotting out the sources of entrepreneurial profit and loss. He shows how this process would finally result ion the establishment of the evenly rotating economy. This is the task of economic theory. The mathematical description of various states of equilibrium is mere play. The problem is the analysis of the market process.

A comparison of both methods of economic analysis makes us understand the meaning of the often raised request to enlarge the scope of economic science by the construction of a dynamic theory instead of the mere occupation with static problems. With regard to logical economics this postulate is devoid of any sense. Logical economics is essentially a theory of processes and changes. It resorts to the imaginary constructions of changelessness merely for the elucidation of the phenomena of change. But it is different with mathematical economics. Its equations and formulas are limited to the description of states of equilibrium and nonacting. It cannot assert anything with regard to the formation of such states and their transformation into other states as long as it remains in the realm of mathematical procedures. As against mathematical economics the request for a dynamic theory is will substantiated. But there is no means for mathematical economics to comply with this request. The problems of process analysis, i.e., the only economic problems that matter, defy any mathematical approach. The introduction of time parameters into the equations is no solution. It does not even indicate the essential shortcomings of the mathematical method. The statements that every change involves time and that change is always in the temporal sequence are merely a way of expressing the fact that as far as there is rigidity and unchangeability there is no time. The main deficiency of mathematical economics is not the fact that it ignores the temporal sequence, but that it ignores the operation of the market process.

The mathematical method is at a loss to show how from a state of nonequilibrium those actions spring up which tend toward the establishment of equilibrium. It is, of course, possible to indicate the mathematical operations required for the transformation of the mathematical description of a definite state of nonequilibrium into the mathematical description of the state of equilibrium. But these mathematical operations by no means describe the market process actuated by the discrepancies in the price structure. The differential equations

of mechanics are supposed to describe precisely the motions concerned at any instant of the time interval between the state of nonequilibrium and that of equilibrium. Only those entirely blinded by the prepossession that economics must be a pale replica of mechanics will underrate the weight of this objection. A very imperfect and superficial metaphor is not a substitute for the services rendered by logical economics.

In every chapter of catallactics the devastating consequences of the mathematical treatment of economics can be tested. It is enough to refer to two instances only. One is provided by the so-called equation of exchange, the mathematical economists' futile and misleading attempt to deal with changes in the purchasing power of money.[10] The second can be best expressed in referring to Professor Schumpeter's dictum according to which consumers in evaluating consumers' goods "*ipso facto* also evaluate the means of production which enter into the production of these goods."[11] It is hardly possible to construe the market process in a more erroneous way.

Economics is not about goods and services, it is about the actions of living men. Its goal is not to dwell upon imaginary constructions such as equilibrium. These constructions are only tools of reasoning. The sole task of economics is analysis of the actions of men, is the analysis of processes.

6. Monopoly Prices

Competitive prices are the outcome of a complete adjustment of the sellers to the demand of the consumers. Under the competitive price the whole supply available is sold, and the specific factors of production are employed to the extent permitted by the prices of the nonspecific complementary factors. No part of a supply available is permanently withheld from the market, and the marginal unit of specific factors of production employed does not yield any net proceed. The whole economic process is conducted for the benefit of the consumers. There is no conflict between the interests of the buyers and those of the sellers, between the interests of the producers and those of the consumers. The owners of the various commodities are not in a position to divert consumption and production from the lines enjoined by the valuations of the consumers, the state of supply of goods and services

10.Cf. below, p. 399.

11.Cf. Joseph A. Schumpeter, *Capitalism, Socialism and Democracy* (New York, 1942), p. 175. For a critique of this statement, cf. Hayek, "The Use of Knowledge in Society," *Individualism and the Social Order* (Chicago, 1948), pp. 89 ff.

of all orders and the state of technological knowledge.

Every single seller would see his own proceeds increased if a fall in the supply at the disposal of his competitors were to increase the price at which he himself could sell his own supply. But on a competitive market he is not in a position to bring about this outcome. Except for a privilege derived from government interference with business he must submit to the state of the market as it is.

The entrepreneur in his entrepreneurial capacity is always subject to the full supremacy of the consumers. It is different with the owners of vendible goods and factors of production and, of course, with the entrepreneurs in their capacity as owners of such goods and factors. Under certain conditions they fare better by restricting supply and selling it at a higher price per unit. The prices thus determined, the monopoly prices, are an infringement of the supremacy of the consumers and the democracy of the market.

The special conditions and circumstances required for the emergence of monopoly prices and their catallactic features are:

1. There must prevail a monopoly of supply. The whole supply of the monopolized commodity is controlled by a single seller or a group of sellers acting in concert. The monopolist—whether one individual or a group of individuals—is in a position to restrict the supply offered for sale or employed for production in order to raise the price per unit sold and need not fear that his plan will be frustrated by interference on the part of other sellers of the same commodity.

2. Either the monopolist is not in a position to discriminate among the buyers of he voluntarily abstains from such discrimination.[12]

3. The reaction of the buying public to the rise in prices beyond the potential competitive price, the fall in demand, is not such as to render the proceeds resulting from total sales at any price exceeding the competitive price smaller than total proceeds resulting from total sales at the competitive price. Hence it is superfluous to enter into sophisticated disquisitions concerning what must be considered the mark of the sameness of an article. It is not necessary to raise the question whether all neckties are to be called specimens of the *same* article or whether one should distinguish them with regard to fabric, color, and pattern. An academic delimitation of various articles is useless. The only point that counts is the way in which the buyers react to the rise in prices. For the theory of monopoly prices it is irrelevant to observe that every necktie manufacturer turns out different articles and to

12.Price discrimination is dealt with below, pp. 388-391.

call each of them a monopolist. Catallactics does not deal with monopoly as such but with monopoly prices. A seller of neckties which are different from those offered for sale by other people could attain monopoly prices only if the buyers did not react to any rise in prices in such a way as to make such a rise disadvantageous for him.

Monopoly is a prerequisite for the emergence of monopoly prices, but it is not the only prerequisite. There is a further condition required, namely a certain shape of the demand curve. The mere existence of monopoly does not mean anything in this regard. The publisher of a copyright book is a monopolist. But he may not be able to sell a single copy, no matter how low the price he asks. Not every price at which a monopolist sells a monopolized commodity is a monopoly price. Monopoly prices are only prices at which it is more advantageous for the monopolist to restrict the total amount to be sold than to expand his sales to the limit which a competitive market would allow. They are the outcome of a deliberate design tending toward a restriction of trade.

4. It is a fundamental mistake to assume that there is a third category of prices which are neither monopoly prices nor competitive prices. If we disregard the problem of price discrimination to be dealt with later, a definite price is either a competitive price or a monopoly price. The assertions to the contrary are due to the erroneous belief that competition is not free or perfect unless everybody is in a position to present himself as a seller of a definite commodity.

The available supply of every commodity is limited. If it were not scarce with regard to the demand of the public, the thing in question would not be considered an economic good, and no price would be paid for it. It is therefore misleading to apply the concept of monopoly in such a way as to make it cover the entire field of economic goods. Mere limitation of supply is the source of economic value and of all prices paid; as such it is not yet sufficient to generate monopoly prices.[13]

The term monopolist or imperfect competition is applied today to cases in which there are some differences in the products of different producers and sellers. This means that almost all consumers' goods are included in the class of monopolized goods. However, the only question relevant in the study of the determination of prices is whether these differences can be used by the seller for a scheme of deliberate restriction of supply for the sake of increasing his total net proceeds. Only if this is possible and put into effect,

13.Cf. the refutation of the misleading extension of the concept of monopoly by Richard T. Ely, *Monopolies and Trusts* (New York, 1906), pp. 1-36.

can monopoly prices emerge as differentiated from competitive prices. It may be true that every seller has a clientele which prefers his brand to those of his competitors and would not stop buying it even if the price were higher. But the problem for the seller is whether the number of such people is great enough to overcompensate the reduction of total sales which the abstention from buying on the part of other people would bring about. Only if this is the case, can he consider the substitution of monopoly prices for competitive prices advantageous.

Considerable confusion stems from a misinterpretation of the term *control of supply*. Every producer of every product has his share in controlling the supply of the commodities offered for sale. If he had produced more *a*, he would have increased supply and brought about a tendency toward a lower price. But the question is why he did not produce more of *a*. Was he in restricting his production of *a* to the amount of *p* intent upon complying to the best of his abilities with the wishes of the consumers? Or was he intent upon defying the orders of the consumers for his own advantage? In the first case he did not produce more of *a*, because increasing the quantity of *a* beyond *p* would have withdrawn scarce factors of production from other branches in which they would have been employed for the satisfaction of more urgent needs of the consumers. He does not produce *p* + *r*, but merely *p*, because such an increase would have rendered his business unprofitable or less profitable, while there are still other more profitable employments available for capital investment. In the second case he did not produce *r*, because it was more advantageous for him to leave a part of the available supply of a monopolized specific factor of production *m* unused. If *m* were not monopolized by him, it would have been impossible for him to expect any advantage from restricting his production of *a*. His competitors would have filled the gap and he would not have been in a position to ask higher prices.

In dealing with monopoly prices we must always search for the monopolized factor *m*. If no such factor is in the case, no monopoly prices can emerge. The first requirement for monopoly prices is the existence of a monopolized good. If no quantity of such a good *m* is withheld, there is no opportunity for an entrepreneur to substitute monopoly prices for competitive prices.

Entrepreneurial profit has nothing at all to do with monopoly. If an entrepreneur is in a position to sell at monopoly prices, he owes this advantage to his monopoly with regard to a monopolized factor *m*. He earns the specific monopoly gain from his ownership of *m*, not from his specific entrepreneurial activities.

Let us assume that an accident cuts a city's electrical supply for several days and forces the residents to resort to candlelight only. The price of candles rises to *s*; at this price the whole supply available is sold out. The stores selling candles reap a high profit in selling their whole supply at *s*. But it could happen that the storekeepers combine in order to withhold a part of their stock from the market and to sell the rest at a price $s + t$. While *s* would have been the competitive price, $s + t$ is a monopoly price. The surplus earned by the storekeepers at the price $s + t$ over the proceeds they would have earned when selling at *s* only is their specific monopoly gain.

It is immaterial in what way the storekeepers bring about the restriction of the supply offered for sale., The physical destruction of a part of the supply available is the classical case of monopolistic action. Only a short time ago it was practiced by the Brazilian government in burning large quantities of coffee. But the same effect can be attained by leaving a part of the supply unused.

While profits are incompatible with the imaginary construction of the evenly rotating economy, monopoly prices and specific monopoly gains are not.

5. If the available quantities of the good *m* are owned not by just one man, firm, corporation, or institution but by several owners who want to cooperate in the substitution of a monopoly price for the competitive price, an agreement among them (commonly called a cartel and branded in the American antitrust legislation as a conspiracy) is required to assign to each party the amount of *m* it is allowed to sell, viz., at the monopoly price. The essential part of any cartel agreement is the assignment of definite quotas to the partners. The art of cartel-making consists in skill in bringing about an agreement about the quotas. A cartel collapses as soon as the members are no longer prepared to cling to a quota agreement. Mere talk among the owners of *m* about the desirability of higher prices is of no avail.

As a rule the state of affairs that makes the emergence of monopoly prices possible is brought about by government policies, e.g., customs barriers. If the owners of *m* do not take advantage of the opportunity to combine for the achievement of monopoly prices offered to them, governments frequently take upon themselves the organization of what the American law calls "restraint of trade." The police power forces the owners of *m*--mostly land and mining and fishing facilities—to restrict output. The most eminent examples of this method are provided on the national level by the American farm policy and on the international level by the treaties euphemistically styled Inter-governmental Commodity Control Agreements. There has de-

veloped a new semantics to describe this branch of government interference with business. The restriction of output, and consequently of the consumption involved, is called "avoidance of surpluses" and the effect aimed at, a higher price for the unit sold, is called "stabilization." It is obvious that these quantities of *m* did not appear as "surpluses" in the eyes of those who would have consumed them. It is also obvious that these people would have preferred a lower price to the "stabilization" of a higher price.

6. The concept of competition does not include the requirement that there should be a multitude of competing units. Competing is always the competition of one man or firm against another man or firm, no matter how many others are striving after the same prize. Competition among the few is not a kind of competition praxeologically different from competition among the many. Nobody ever maintained that the competition for elective office is under a two-party system less competitive than under a system of many parties. The number of competitors plays a role in the analysis of monopoly prices only as far as it is one of the factors upon which the success of the endeavors to unite competitors into a cartel depends.

7. If it is possible for the seller to increase his net proceeds by restricting sales and increasing the price of the units sold, there are usually several monopoly prices that satisfy this condition. As a rule *one* of these monopoly prices yields the highest net proceeds. But it may also happen that various monopoly prices are equally advantageous to the monopolist. We may call this monopoly price or these monopoly prices most advantageous to the monopolist the optimum monopoly price or the optimum monopoly prices.

8. The monopolist does not know beforehand in what way the consumers will react to a rise in prices. He must resort to trial and error in his endeavors to find out whether the monopolized good can be sold to his advantage at any price exceeding the competitive price and, if this is so, which of various possible monopoly prices is the optimum monopoly price or one of the optimum monopoly prices. This is in practice much more difficult than the economist assumes when, in drawing demand curves, he ascribes perfect foresight to the monopolist. We must therefore list as a special condition required for the appearance of monopoly prices the monopolist's ability to discover such prices.

9. A special case is provided by the incomplete monopoly. The greater part of the total supply available is owned by the monopolist; the rest is owned by one or several men who are not prepared to cooperate with the monopolist in a scheme for restricting sales and bringing about monopoly prices. However, the reluctance of these outsiders does not prevent the establishment of monopoly

prices if the portion *p1* controlled by the monopolist is large enough when compared with the sum of the outsiders' portions *p2*. Let us assume that the whole supply ($p = p1 + p2$) can be sold at the price *c* per unit and a supply of $p - z$ at the monopoly price *d*. If $d\,(p1 - z)$ is higher than $c\,p1$, it is to the advantage of the monopolist to embark upon a monopolistic restriction of his sales, no matter what the conduct of the outsiders may be. They may go on selling at the price *c* or they may raise their prices up to the maximum of *d*. The only point that counts is that the outsiders are not willing to put up with a reduction in the quantity which they themselves are selling. The whole reduction required must be borne by the owner of *p1*. This influences his plans and will as a rule result in the emergence of a monopoly price which is different from that which would have been established under complete monopoly.[14]

10. Duopoly and oligopoly are not special varieties of monopoly prices, but merely a variety of the methods applied for the establishment of a monopoly price. Two or several men own the whole supply. They all are prepared to sell at monopoly prices and to restrict their total sales accordingly. But for some reason they do not want to act in concert. Each of them goes his own way without any formal or tacit agreement with his competitors. But each of them knows also that his rivals are intent upon a monopolistic restriction of their sales in order to reap higher prices per unit and specific monopoly gains. Each of them watches carefully the conduct of his rivals and tries to adjust his own plans to their actions. a succession of moves and countermoves, a mutual outwitting results, the outcome of which depends on the personal cunning of the adverse parties. The duopolists and oligopolists have two objectives in mind: to find out the monopoly price most advantageous to the sellers on the one hand and to shift as much as possible of the burden of restricting the amount of sales to their rivals. Precisely because they do not agree with regard to the quotas of the reduced amount sales to be allotted to each party, they do not act in concert as the members of a cartel do.

One must not confuse duopoly and oligopoly with the incomplete monopoly or with competition aiming at the establishment of monopoly. In the case of incomplete monopoly only the monopolistic group is prepared to restrict its sales in order to make a monopoly price prevail; the other sellers decline to restrict their sales. But duopolists and oligopolists are ready to withhold a part of their supply from the market. In the case of price slashing one group *A* plans to attain

14.It is obvious that an incomplete monopoly scheme is bound to collapse if the outsiders come into a position to expand their sales.

full monopoly or incomplete monopoly by forcing all or most of its competitors, the *B*'s, to go out of business. It cuts prices to a level which makes selling ruinous to its more vulnerable competitors. *A* may also incur losses by selling at this low rate; but it is in a position to undergo such losses for a longer time than the others and it is confident that it will make good for them later by ample monopoly gains. This process has nothing to do with monopoly prices. It is a scheme for the attainment of a monopoly position.

One may wonder whether duopoly and oligopoly are of practical significance. As a rule the parties concerned will come to at least a tacit understanding concerning their quotas of the reduced amount of sales.

11. The monopolized good by whose partial withholding from the market the monopoly prices are made to prevail can be either a good of the lowest order or a good of a higher order, a factor of production. It may consist in the control of the technological knowledge required for production, the "recipe." Such recipes are as a rule free goods as their ability to produce definite effects is unlimited. They can become economic goods only if they are monopolized and their use is restricted. Any price paid for the services rendered by a recipe is always a monopoly price. It is immaterial whether the restriction of a recipe's use is made possible by institutional conditions—such as patents and copyright laws—or by the fact that a formula is kept secret and other people fail to guess it.

The complementary factor of production the monopolization of which can result in the establishment of monopoly prices may also consist in a man's opportunity to make his cooperation in the production of a good known to consumers who attribute to this cooperation a special significance. This opportunity may be given either by the nature of the commodities or services in question or by institutional provisions such as protection of trademarks. The reasons why the consumers value the contribution of a man or a firm so highly are manifold. They may be: special confidence placed on the individual or firm concerned on account of previous experience;[15] merely baseless prejudice or error; snobbishness; magic or metaphysical prepossessions whose groundlessness is ridiculed by more reasonable people. A drug marked by a trademark may not differ in its chemical structure and its physiological efficacy from other compounds not marked with the same label. However, if the buyers attach a special significance to this label and are ready to pay higher prices for the product marked with it, the seller can, provided the configuration of demand is propitious, reap monopoly

15. Cf. below, pp. 379-383, on good will.

prices.

The monopoly which enables the monopolist to restrict the amount offered without counteraction on the part of other people can consist in the greater productivity of a factor which he has at his disposal as against the lower productivity of the corresponding factor at the disposal of his potential competitors. If the margin between the higher productivity of his supply of the monopolized factor and that of his potential competitors is broad enough for the emergence of a monopoly price, a situation results which we may call margin monopoly.[16]

Let us illustrate margin monopoly by referring to its most frequent instance in present-day conditions, the power of a protective tariff to generate a monopoly price under special circumstances. Atlantis puts a tariff *t* on the importation of each unit of the commodity *p*, the world market price of which is *s*. If domestic consumption of *p* in Atlantis at the price $s + t$ is *a* and domestic production of *p* is *b*, *b* being smaller than *a*, then the costs of the marginal dealer are $s + t$. The domestic plants are in a position to sell their total output at the price $s + t$. The tariff is effective and offers to domestic business the incentive to expand the production of *p* from *b* to a quantity slightly smaller than *a*. But if *b* is greater than *a*, things are different. If we assume that *b* is so large that even at the price *s* domestic consumption lags behind it and the surplus must be exported and sold abroad, the imposition of a tariff does not affect the price of *p*. Both the domestic and the world market price of *p* remain unchanged. However the tariff, in discriminating between domestic and foreign production of *p*, accords to the domestic plants a privilege which can be used for a monopolistic combine, provided certain further conditions are present. If it is possible to find within the margin between $s + t$ and *s* a monopoly price, it becomes lucrative for the domestic enterprises to form a cartel. The cartel sells in the home market of Atlantis at a monopoly price and disposes of the surplus abroad at the world market price. Of course, as the quantity of *p* offered at the world market increases as a consequence of the restriction of the quantity sold in Atlantis, the world market price drops from *s* to *s1*. It is therefore a further requirement for the emergence of the domestic monopoly price that the total restriction in proceeds resulting from this fall in the world market price is not so great as to absorb the whole monopoly gain of the domestic cartel.

16.The use of this term "margin monopoly" is, like that of any other, optional. It would be vain to object that every other monopoly which results in monopoly prices could also be called a margin monopoly.

In the long run such a national cartel cannot preserve its monopolistic position if entrance into its branch of production is free to newcomers. The monopolized factor the services of which the cartel restricts (as far as the domestic market is concerned) for the sake of monopoly prices is a geographical condition which can easily be duplicated by every new investor who establishes a new plant within the borders of Atlantis. Under modern industrial conditions, the characteristic feature of which is steady technological progress, the latest plant will as a rule be more efficient than the older plants and produce at lower average costs. The incentive to prospective newcomers is therefore twofold. It consists not only in the monopoly gain of the cartel members, but also in the possibility of outstripping them by lower costs of production.

Here again institutions come to the aid of the old firms that form the cartel. The patents give them a legal monopoly which nobody may infringe. Of course, only some of their production processes may be protected by patents. But a competitor who is prevented from resorting to these processes and to the production of the articles concerned may be handicapped in such a serious way that he cannot consider entrance into the field of the cartelized industry.

The owner of a patent enjoys a legal monopoly which, other conditions being propitious, can be used for the attainment of monopoly prices. Beyond the field covered by the patent itself a patent may render auxiliary services in the establishment and preservation of margin monopoly where the primary institutional conditions for the emergence of such a monopoly prevail.

We may assume that some world cartels would exist even in the absence of any government interference which provides for other commodities the indispensable conditions required for the construction of a monopolistic combine. There are some commodities, e.g., diamonds and mercury, the supply of which is by nature limited to a few sources. The owners of these resources can easily be united for concerted action. But such cartels would play only a minor role in the setting of world production. Their economic significance would be rather small. The important place that cartels occupy in our time is an outcome of the interventionist policies adopted by the governments of all countries. The monopoly problem mankind has to face today is not an outgrowth of the operation of the market economy. It is a product of purposive action on the part of governments. It is not one of the evils inherent in capitalism as the demagogues trumpet. It is, on the contrary, the fruit of policies hostile to capitalism and intent upon sabotaging and destroying its operation.

The classical country of the cartels was Germany. In the last decades of

the nineteenth century the German Reich embarked upon a vast scheme of *Sozialpolitic*. The idea was to raise the income and the standard of living of the wage earners by various measures of what is called prolabor legislation, by the much glorified Bismarck scheme of social security, and by labor-union pressure and compulsion for the attainment of higher wage rates. The advocates of this policy defied the warnings of the economists. There is no such thing as economic law, they announced.

In stark reality the Sozialpolitik raised costs of production within Germany. Every progress of the alleged prolabor legislation and every successful strike disarranged industrial conditions to the disadvantage of the German enterprises. It made it harder for them to outdo foreign competitors for whom the domestic events of Germany did not raise costs of production. If the Germans had been in a position to renounce the export of manufactures and to produce only for the domestic market, the tariff could have sheltered the German plants against the intensified competition of foreign business. They would have been in a position to sell at higher prices. What the wage earner would have profited from the achievements of the legislature and the unions, would have been absorbed by the higher prices he would have had to pay for the articles he bought. Real wage rates would have risen only to the extent the entrepreneurs could improve technological procedures and thereby increase the productivity of labor. The tariff would have rendered the Sozialpolitik harmless.

But Germany is, and was already at the time Bismark inaugurated his prolabor policy, a predominantly industrial country. Its plants exported a considerable part of their total output. These exports enabled the Germans to import the foodstuffs and raw materials they could not grow in their own country, comparatively overpopulated and poorly endowed with natural resources as it was. This situation could not be remedied simply by a protective tariff. Only cartels could free Germany from the catastrophic consequences of its "progressive" prolabor policies. The cartels charged monopoly prices at home and sold abroad at cheaper prices. The cartels are the necessary accompaniment and upshot of a "progressive" labor policy as far as it affects industries dependent for their sales on foreign markets. The cartels do not, of course, safeguard for the wage earners the illusory social gains which the labor politicians and the union leaders promise them. There is no means of raising wage rates for all those eager to earn wages above the height determined by the productivity of each kind of labor. What the cartels achieved was merely to counterbalance the apparent gains in nominal wage rates by corresponding increases in domestic commodity prices. But the

most disastrous effect of minimum wage rates, permanent mass unemployment, was at first avoided.

With all industries which cannot content themselves with the domestic market and are intent upon selling a part of their output abroad the function of the tariff, in this age of government interference with business, is to enable the establishment of domestic monopoly prices. Whatever the purpose and the effects of tariffs may have been in the past, as soon as an exporting country embarks upon measures designed to increase the revenues of the wage earners or the farmers above the potential market rates, it must foster schemes which result in domestic monopoly prices for the commodities concerned. A national government's might is limited to the territory subject to its sovereignty. It has the power to raise domestic costs of production. It does not have the power to force foreigners to pay correspondingly higher prices for the products. If exports are not to be discontinued, they must be subsidized. The subsidy can be paid openly by the treasury or its burden can be imposed upon the consumers by the cartel's monopoly prices.

The advocates of government interference with business ascribe to the "State" the power to benefit certain groups within the framework of the market by a mere *fiat*. In fact this power is the government's power to foster monopolistic combines. The monopoly gains are the funds out of which the "social gains" are financed. As far as these monopoly gains do not suffice, the various measures of interventionism immediately paralyze the operation of the market; mass unemployment, depression, and capital consumption appear. This explains the eagerness of all contemporary governments to foster monopoly in all those sectors of the market which are in some way or other connected with export trade.

If a government does not or cannot succeed in attaining its monopolistic aims indirectly, it resorts to other means. In the field of coal and potash the Imperial Government of Germany fostered compulsory cartels. The American New Deal was prevented by the opposition of business from organizing the nation's great industries on an obligatory cartel basis. It fared better in some vital branches of farming with measures designed to restrict output for the sake of monopoly prices. A long series of agreements concluded between the world's most prominent governments aimed at the establishment of world-market monopoly prices for various raw materials and foodstuffs.[17] It is the avowed purpose of the United Nations to continue these plans.

17.A collection of these agreements was published in 1943 by the International Labor Office under the title *Intergovernmental Commodity Control Agreements*.

12. It is necessary to view this promonopoly policy of the contemporary governments as a uniform phenomenon in order to discern the reasons which motivated it. From the catallactic point of view these monopolies are not uniform. The contractual cartels into which entrepreneurs enter in taking advantage of the incentive offered by protective tariffs are instances of margin monopoly. Where the government directly fosters monopoly prices we are faced with instances of license monopoly. The factor of production by the restriction of the use of which the monopoly price is brought about is the license[18] which the laws make a requisite for supplying the consumers.

Such licenses may be granted in different ways:

(*a*) An unlimited license is granted to practically every applicant. This amounts to a state of affairs under which no license at all is required.

(*b*) Licenses are granted only to selected applicants. Competition is restricted. However, monopoly prices can emerge only if the licensees act in concert and the configuration of demand is propitious.

(*c*) There is only one license. The licensee, e.g., the holder of a patent or a copyright, is a monopolist. If the configuration of the demand is propitious and if the licensee wants to reap monopoly gains, he can ask monopoly prices.

(*d*) The licenses granted are limited. They confer upon the licensee only the right to produce or to sell a definite quantity, in order to prevent him from disarranging the authority's scheme. The authority itself directs the establishment of monopoly prices.

Finally there are the instances in which a government establishes a monopoly for fiscal purposes. The monopoly gains go to the treasury. Many European governments have instituted tobacco monopolies. Others have monopolized salt, matches, telegraph and telephone service, broadcasting, and so on. Without exception every country has a government monopoly of the postal service.

13. Margin monopoly need not always owe its appearance to an institutional factor such as tariffs. It can also be produced by sufficient differences in the fertility or productivity of some factors of production.

It has already been said that it is a serious blunder to speak of a land monopoly and to refer to monopoly prices and monopoly gains in explaining the prices of agricultural products and the rent of land. As far as history is confronted with instances of monopoly prices for agricultural products, it was license monopoly fostered by government decree. However, the ac-

18.The terms *license* and *licensee* are not employed here in the technical sense of patent legislation.

knowledgement of these facts does not mean that differences in the fertility of the soil could never bring about monopoly prices. If the difference between the fertility of the poorest soil still tilled and the richest fallow fields available for an expansion of production were so great as to enable the owners of the already exploited soil to find an advantageous monopoly price within this margin, they could consider restricting production by concerted action in order to reap monopoly prices. But it is a fact that physical conditions in agriculture do not comply with these requirements. It is precisely on account of this fact that farmers longing for monopoly prices do not resort to spontaneous action but ask for the interference of governments.

In various branches of mining conditions are often more propitious for the emergence of monopoly prices based on margin monopoly.

14. It has been asserted again and again that the economies of big-scale production have generated a tendency toward monopoly prices in the processing industries. Such a monopoly would be called in our terminology a margin monopoly.

Before entering into a discussion of this topic one must clarify the role an increase or decrease in the unit's average cost of production plays in the considerations of a monopolist searching for the most advantageous monopoly price. We consider a case in which the owner of a monopolized complementary factor of production, e.g., a patent, at the same time manufactures the product *p*. If the average cost of production of one unit of *p*, without any regard to the patent, decreases with the increase in the quantity produced, the monopolist must weigh this against the gains expected from the restriction of output. If, on the other hand, cost of production per unit decreases with the restriction of total production, the incentive to embark upon monopolistic restraint is augmented. It is obvious that the mere fact that big-scale production tends as a rule to lower average costs of production is in itself not a factor driving toward the emergence of monopoly prices. It is rather a checking factor.

What those who blame the economies of big-scale production for the spread of monopoly prices are trying to say is that the higher efficiency of big-scale production makes it difficult or even impossible for small-scale plants to compete successfully. A big-scale plant could, they believe, resort to monopoly prices with impunity because small business is not in a position to challenge its monopoly. Now, it is certainly true that in many branches of the processing industries it would be foolish to enter the market with the high-cost products of small, inadequate plants. A modern cotton mill does

not need to fear the competition of old-fashioned distaffs; its rivals are other more or less adequately equipped mills. But this does not mean that it enjoys the opportunity of selling at monopoly prices. There is competition between beg businesses too. If monopoly prices prevail in the sale of the products of big-size business, the reasons are either patents or monopoly in the ownership of mines or other sources of raw material or cartels based on tariffs.

One must not confuse the notions of monopoly and of monopoly prices. Mere monopoly as such is catallactically of no importance if it does not result in monopoly prices. Monopoly prices are consequential only because they are the outcome of a conduct of business defying the supremacy of the consumers and substituting the private interests of the monopolist for those of the public. They are the only instance in the operation of a market economy in which the distinction between production for profit and production for use could to some extent be made if one were prepared to disregard the fact that monopoly gains have nothing at all to do with profits proper. They are not a part of what catallactics can call profits; they are an increase in the price earned from the sale of the services rendered by some factors of production, some of these factors being physical factors, some of them merely institutional. If the entrepreneurs and capitalists in the absence of a monopoly price constellation abstain from expanding production in a certain branch of industry because the opportunities offered to them in other branches are more attractive, they do not act in defiance of the wants of the consumers. On the contrary, they follow precisely the line indicated by the demand as expressed on the market.

The political bias which has obfuscated the discussion of the monopoly problem has neglected to pay attention to the essential issues involved. In dealing with every case of monopoly prices one must first of all raise the question of what obstacles restrain people from challenging the monopolists. In answering this question one discovers the role played in the emergence of monopoly prices by institutional factors. It was nonsense to speak of conspiracy with regard to the deals between American firms and German cartels. If an American wanted to manufacture an article protected by a patent owned by Germans, he was compelled by the American law to come to an arrangement with German business.

15. A special case is what may be called the failure monopoly. In the past capitalists invested funds in a plant designed for the production of the article *p*. Later events proved the investment a failure. The prices which can be obtained in selling *p* are so low that the capital invested in

the plant's inconvertible equipment does not yield a return. It is lost. However, these prices are high enough to yield a reasonable return for the variable capital to be employed for the current production of *p*. If the irrevocable loss of the capital invested in the inconvertible equipment is written off on the books and all corresponding alterations are made in the accounts, the reduced capital working in the conduct of the business is by and large so profitable that it would be a new mistake to stop production altogether. The plant works at full capacity producing the quantity *q* of *p* and selling the unit at the price *s*.

But conditions may be such that it is possible for the enterprise to reap a monopoly gain by restricting output to *q/2* and selling the unit of *q* at the price *3 s*. Then the capital invested in the inconvertible equipment no longer appears completely lost. It yields a modest return, namely, the monopoly gain.

This enterprise now sells at monopoly prices and reaps monopoly gains although the total capital invested yields little when compared with what the investors would have earned if they had invested in other lines of business. The enterprise withholds from the market the services which the unused production capacity of its durable equipment could render and fares better than it would by producing at full capacity. It defies the orders of the public. The public would have been in a better position if the investors had avoided the mistake of immobilizing a part of their capital in the production of *p*. However, as things are now after this irreparable fault has been committed, they want to get more of *p* and are ready to pay for it what is now its potential competitive market price, namely, *s*. They do not approve, as conditions are now, the action of the enterprise in withholding an amount of variable capital from employment for the production of *p*. This amount certainly does not remain unused. It goes into other lines of business and produces there something else, namely, *m*. But as conditions are now, the consumers would prefer an increase of the available quantity of *p* to an increase in the available quantity of *m*. The proof is that in the absence of a monopolistic restriction of the capacity for the production of *p*, as it is under given conditions, the profitability of a production of the quantity *q* selling at the price *s* would be such that it would pay better than an increase in the quantity of the article *m* produced.

There are two distinctive features of this case. First, the monopoly prices paid by the buyers are still lower than the total cost of production of *p* would

be if full account is taken of the whole input of the investors. Second, the monopoly gains of the firm are so small that they do not make the total venture appear a good investment. It remains malinvestment. It is precisely this fact that constitutes the monopolistic position of the firm. No outsider wants to enter its field of entrepreneurial activity because the production of *p* results in losses.

Failure monopoly is by no means a merely academic construction. It is, for instance, actual today in the case of some railroad companies. But one must guard against the mistake of interpreting every instance of unused production capacity as a failure monopoly. Even in the absence of monopoly it may be more profitable to employ variable capital for other purposes instead of expanding a firm's production to the limit fixed by the capacity of its durable inconvertible equipment; then the output restriction complies precisely with the state of the competitive market and the wishes of the public.

16. Local monopolies are, as a rule, of institutional origin, But there are also local monopolies which originate out of conditions of the unhampered market. Often the institutional monopoly is designed to deal with a monopoly which came into existence or would be likely to come into existence without any authoritarian interference with the market.

A catallactic classification of local monopolies must distinguish three groups: margin monopoly, limited-space monopoly and license monopoly.

A *local margin monopoly* is characterized by the fact that the barrier preventing outsiders from competing on the local market and breaking the monopoly of the local sellers is the comparative height of transportation costs. No tariffs are needed to grant limited protection to a firm which owns all the adjacent natural resources required for the production of bricks against the competition of far distant tile works. The costs of transportation provide them with a margin in which, the configuration of demand being propitious, an advantageous monopoly price can be found.

So far local margin monopolies do not differ catallactically from other instances of margin monopoly. What distinguishes them and makes it necessary to deal with them in a special way is their relation to the rent of urban land on the one hand and their relation to city development on the other.

Let us assume that an area *A* offering favorable conditions for the aggregation of an increasing urban population is subject to monopoly prices for building materials. Consequently building costs are higher than they

would be in the absence of such a monopoly. But there is no reason for those weighing the pros and cons of choosing the location of their homes and their workshops in *A* to pay higher prices for the purchase or the renting of such houses and workshops. These prices are determined on the one hand by the corresponding prices in other areas and on the other by the advantages which settling in *A* offers when compared with settling somewhere else. The higher expenditure required for construction does not affect these prices; its incidence falls upon the yield of land. The burden of the monopoly gains of the sellers of building materials falls on the owners of the urban soil. These gains absorb proceeds which in their absence would go to these owners. Even in the—not very likely—case that the demand for houses and workshops is such as to make it possible for the owners of the land to attain monopoly prices in selling and leasing, the monopoly prices of the building materials would affect only the proceeds of the landowners, not the prices to be paid by the buyers or tenants.

The fact that the burden of the monopoly gains reverts to the price of urban employment of the land does not mean that it does not check growth of the city. It postpones the employment of the peripheral land for the expansion of the urban settlement . The instant at which it becomes advantageous for the owner of a piece of suburban land to withdraw it from agricultural or other nonurban employment and to use it for urban development appears at a later date.

Now arresting a city's development is a two-edged action. Its usefulness for the monopolist is ambiguous. He cannot know whether future conditions will be such as to attract more people to *A*, the only market for his products. One of the attractions a city offers to newcomers is its bigness, the multitude of its population. Industry and commerce tend toward centers. If the monopolist's action delays the growth of the urban community, it may direct the stream toward other places. An opportunity may be missed which never comes back. Greater proceeds in the future may be sacrificed to comparatively small short-run gains.

It is therefore at least questionable whether the owner of a local margin monopoly in the long run serves his own interests well by embarking upon selling at monopoly prices. It would often be more advantageous for him to discriminate between the various buyers. He could sell at higher prices for construction projects in the central parts of the city and at lower prices for such projects in peripheral districts. The range of local margin monopoly is more restricted than is generally assumed.

Limited-space monopoly is the outcome of the fact that physical conditions restrict the field of operation in such a way that only one or a few enterprises can enter it. Monopoly emerges when there is only one enterprise in the field or when the few operating enterprises combine for concerted action.

It is sometimes possible for two competing trolley companies to operate in the same streets of a city. There were instances in which two or even more companies shared in supplying the residents of an area with gas, electricity, and telephone service. But even in such exceptional cases there is hardly any real competition. Conditions suggest to the rivals that they combine at least tacitly. The narrowness of the space results, one way or another, in monopoly.

In practice limited-space monopoly is closely connected with license monopoly. It is practically impossible to enter the field without an understanding with the local authorities controlling the streets and their subsoil. Even in the absence of laws requiring a franchise for the establishment of public utility services, it would be necessary for the enterprises to come to an agreement with the municipal authorities. Whether or not such agreements are to be legally described as franchises is unimportant.

Monopoly, of course, need not result in monopoly prices. It depends on the special data of each case whether or not a monopolistic public utility company could resort to monopoly prices. But there are certainly cases in which it can. It may be that the company is ill-advised in choosing a monopoly-price policy and that it would better serve its long-run interests by lower prices. But there is no guarantee that a monopolist will find out what is most advantageous for him.

One must realize that limited-space monopoly may often result in monopoly prices. In this case we are confronted with a situation in which the market process does not accomplish its democratic function.[19]

Private enterprise is very unpopular with our contemporaries. Private ownership of the means of production is especially disliked in those fields in which limited-space monopoly emerges even if the company does not charge monopoly prices and even if its business yields only small profits or results in losses. A "public utility" company is in the eyes of the interventionist and socialist politicians a public enemy. The voters approve of any evil inflicted upon it by the authorities. It is generally assumed that these enterprises should be nationalized or municipalized. Monopoly gains, it is

19.About the significance of this fact see below, pp. 680-682.

said, must never go to private citizens. They should go to the public funds exclusively.

The outcome of the municipalization and nationalization policies of the last decades was almost without exception financial failure, poor service, and political corruption. Blinded by their anticapitalistic prejudices people condone poor service and corruption and for a long time did not bother about the financial failure. However, this failure is one of the factors which contributed to the emergence of the present-day crisis of interventionism.[20]

17. It is customary to characterize labor-union policies as monopolistic schemes aiming at the substitution of monopoly wage rates for competitive wage rates. However, as a rule labor unions do not aim at monopoly wage rates. A union is intent upon restricting competition on its own sector of the labor market in order to raise its wage rates. But restriction of competition and monopoly price must not be confused. The characteristic feature of monopoly prices is the fact that the sale of only a part *p* of the total supply *P* available nets higher proceeds than the sale of *P*. The monopolist earns a monopoly gain by withholding *P* - *p* from the market. It is not the height of this gain that marks the monopoly price situation as such, but the purposive action of the monopolists in bringing it about. The monopolist is concerned with the employment of the whole stock available. He is equally interested in every fraction of this stock. If a part of it remains unsold, it is his loss. Nonetheless he chooses to have a part unused because under the prevailing configuration of demand it is more advantageous for him to proceed in this way. It is the peculiar state of the market that motivates his decision. The monopoly which is one of the two indispensable conditions of the emergence of monopoly prices may be—and is as a rule—the product of an institutional interference with the market data. But these external forces do not directly result in monopoly prices. Only if a second requirement is fulfilled is the opportunity for monopolistic action set.

It is different in the case of simple supply restriction. Here the authors of the restriction are not concerned with what may happen to the part of the supply they bar from access to the market. The fate of the people who own this part does not matter to them. They are looking only at that part of the supply which remains on the market. Monopolistic action is advantageous for the monopolist only if total net proceeds at a monopoly price exceed total net proceeds at the potential competitive price. Restrictive action on the other

20.See below, pp. 855-857.

hand is always advantageous for the privileged group and disadvantageous for those whom it excludes from the market. It always raises the price per unit and therefore the total net proceeds of the privileged group. The losses of the excluded group are not taken into account by the privileged group.

It may happen that the benefits which the privileged group derives from the restriction of competition are much more lucrative for them than any imaginable monopoly price policy could be. But this is another question. It does not blot out the catallactic differences between these two modes of action.

The labor unions aim at a monopolistic position on the labor market. But once they have attained it, their policies are restrictive and not monopoly price policies. They are intent upon restricting the supply of labor in their field without bothering about the fate of those excluded. They have succeeded in every comparatively underpopulated country in erecting immigration barriers. Thus they preserve their comparatively high wage rates. The excluded foreign workers are forced to stay in their countries in which the marginal productivity of labor, and consequently wage rates, are lower. The tendency toward an equalization of wage rates which prevails under free mobility of labor from country to country is paralyzed. On the domestic market the unions do not tolerate the competition of non-unionized workers and admit only a restricted number to union membership. Those not admitted must go into less remunerative jobs or must remain unemployed. The unions are not interested in the fate of these people.

Even if a union takes over the responsibility for its unemployed members and pays them, out of contributions of its employed members, unemployment doles not lower than the earnings of the employed members, its action is not a monopoly price policy. For the unemployed union members are not the only people whose earning power is adversely affected by the union's policy of substituting higher rates for the potential lower market rates. The interests of those excluded from membership are not taken into account.

The Mathematical Treatment of the Theory of Monopoly Prices

Mathematical economists have paid special attention to the theory of monopoly prices. It looks as if monopoly prices would be a chapter of catallactics for which mathematical treatment is more appropriate than it is for other chapters of catallactics. However, the services which mathematics can render in this field are rather poor too.

With regard to competitive prices mathematics cannot give more than a mathematical description of various states of equilibrium and of conditions

in the imaginary construction of the evenly rotating economy. It cannot say anything about the actions which would finally establish these equilibria and this evenly rotating system if no further changes in the data were to occur.

In the theory of monopoly prices mathematics comes a little nearer to the reality of action. It shows how the monopolist could find out the optimum monopoly price provided he had at his disposal all the data required. But the monopolist does not know the shape of the curve of demand. What he knows is only points at which the curves of demand and supply intersected one another in the past. He is therefore not in a position to make use of the mathematical formulas in order to discover whether there is any monopoly price for his monopolized article and, if so, which of various monopoly prices is the optimum price. The mathematical and graphical disquisitions are therefore no less futile in this sector of action than in any other sector. But, at least, they schematize the deliberations of the monopolist and do not, as in the case of competitive prices, satisfy themselves in describing a merely auxiliary construction of theoretical analysis which does not play a role in real action.

Contemporary mathematical economists have confused the study of monopoly prices. They consider the monopolist not as the seller of a monopolized commodity, but as an entrepreneur and producer. However, it is necessary to distinguish the monopoly gain clearly from entrepreneurial profit. Monopoly gains can only be reaped by the seller of a commodity or a service. An entrepreneur can reap them only in his capacity as seller of a monopolized commodity, not in his entrepreneurial capacity. The advantages and disadvantages which may result from the fall or rise in cost of production per unit with increasing total production, diminish or increase the monopolist's total net proceeds and influence his conduct. But the catallactic treatment of monopoly prices must not forget that the specific monopoly gain stems, with due allowance made to the configuration of demand, only from the monopoly of a commodity or a right. It is this alone which affords to the monopolist the opportunity to restrict supply without fear that other people can frustrate his action by expanding the quantity they offer for sale. Attempts to define the conditions required for the emergence of monopoly prices by resorting to the configuration of production costs are vain.

It is misleading to describe the market situation resulting in competitive prices by declaring that the individual producer could sell at the market price also a greater quantity than what he really sells. This is true only when two special conditions are fulfilled: the producer concerned, *A*, is not the marginal producer, and expanding production does not require additional costs which cannot be recovered in selling the additional quantity of products.

Then *A's* expansion forces the marginal producer to discontinue production; the supply offered for sale remains unchanged.

The characteristic mark of the competitive price as distinguished from the monopoly price is that the former is the outcome of a situation under which the owners of goods and services of all orders are compelled to serve best the wishes of the consumers. On a competitive market there is no such thing as a price policy of the sellers. They have no alternative other than to sell as much as they can at the highest price offered to them. But the monopolist fares better by withholding from the market a part of the supply at his disposal in order to make specific monopoly gains.

7. Good Will

It must be emphasized again that the market is peopled by men who are not omniscient and have only a more or less defective knowledge of prevailing conditions.

The buyer must always rely upon the trustworthiness of the seller. Even in the purchase of producers' goods the buyer, although as a rule an expert in the field, depends to some extent on the reliability of the seller. This is still more the case on the market for consumers' goods. Here the seller for the most part excels the buyer in technological and commercial insight. The salesman's task is not simply to sell what the customer is asking for. He must often advise the customer how to choose the merchandise which can best satisfy his needs. The retailer is not only a vendor; he is also a friendly helper. The public does not heedlessly patronize every shop. If possible, a man prefers a store or a brand with which he himself or trustworthy friends have had good experience in the past.

Good will is the renown a business acquires on account of past achievements. It implies the expectation that the bearer of the good will in the future will live up to his earlier standards. Good will is not a phenomenon appearing only in business relations. It is present in all social relations. It determines a person's choice of his spouse and of his friends and his voting for a candidate in elections. Catallactics, of course, deals only with commercial good will.

It does not matter whether the good will is based on real achievements and merits or whether it is only a product of imagination and fallacious ideas. What counts in human action is not truth as it may appear to an omniscient being, but the opinions of people liable to error. There are some instances in which customers are prepared to pay a higher price for a special brand of a compound although the branded article does not differ in its physical and chemical structure from another cheaper product. Experts may deem such

conduct unreasonable. But no man can acquire expertness in all fields which are relevant for his choices. He cannot entirely avoid substituting confidence in men for knowledge of the true state of affairs. The regular customer does not always select the article or the service, but the purveyor whom he trusts. He pays a premium to those whom he considers reliable.

The role which good will plays on the market does not impair or restrict competition. Everybody is free to acquire good will, and every bearer of good will can lose good will once acquired. Many reformers, impelled by their bias for paternal government, advocate authoritarian grade labeling as a substitute for trademarks. They would be right if rulers and bureaucrats were endowed with omniscience and perfect impartiality. But as officeholders are not free from human weakness, the realization of such plans would merely substitute the defects of government appointees for those of individual citizens. One does not make a man happier by preventing him from discriminating between a brand of cigarettes or canned food he prefers and another brand he likes less.

The acquisition of good will requires not only honesty and zeal in attending to the customers, but no less money expenditure. It takes time until a firm has acquired a steady clientele. In the interval it must often put up with losses against which it balances expected later profits.

From the point of view of the seller good will is, as it were, a necessary factor of production. It is appraised accordingly. It does not matter that as a rule the money equivalent of the good will does not appear in book entries and balance sheets. If a business is sold, a price is paid for the good will provided it is possible to transfer it to the acquirer.

It is consequently a problem of catallactics to investigate the nature of this peculiar thing called good will. In this scrutiny we must distinguish three different cases.

Case 1. The good will gives to the seller the opportunity to sell at monopoly prices or to discriminate among various classes of buyers. This does not differ from other instances of monopoly prices or price discrimination.

Case 2. The good will gives to the seller merely the opportunity to sell at prices corresponding to those which his competitors attain. If he had no good will, he would not sell at all or only by cutting prices. Good will is for him no less necessary than the business premises, the keeping of a well-assorted stock of merchandise and the hiring of skilled helpers. The costs incurred by the acquisition of good will play the same role as any

other business expenses. They must be defrayed in the same way by an excess of total proceeds over total costs.

Case 3. The seller enjoys within a limited circle of staunch patrons such a brilliant reputation that he can sell to them at higher prices than those paid to his less renowned competitors. However, these prices are not monopoly prices. They are not the result of a deliberate policy aiming at a restriction in total sales for the sake of raising total net proceeds. It may be that the seller has no opportunity whatsoever to sell a larger quantity, as is the case for example, with a doctor who is busy to the limit of his powers although he charges more than his less popular colleagues. It may also be that the expansion of sales would require additional capital investment and that the seller either lacks this capital or believes that he has a more profitable employment for it. What prevents an expansion of output and of the quantity of merchandise or services offered for sale is not a purposive action on the part of the seller, but the state of the market.

As the misinterpretation of these facts has generated a whole mythology of "imperfect competition" and "monopolistic competition," it is necessary to enter into a more detailed scrutiny of the considerations of an entrepreneur who is weighing the pros and cons of an expansion of his business.

Expansion of a production aggregate, and no less increasing production from partial utilization of such an aggregate to full capacity production, requires additional capital investment which is reasonable only if there is no more profitable investment available.[21] It does not matter whether the entrepreneur is rich enough to invest his own funds or whether he would have to borrow the funds needed. Also that part of an entrepreneur's own capital which is not employed for the expansion of the business concerned these funds must be withdrawn from their present employment.[22] The entrepreneur will only embark upon this change of investment if he expects from it an increase in his net returns. In addition there are other doubts which may check the propensity to expand a prospering enterprise even if the market situation seems to offer propitious chances. The entrepreneur may mistrust his own ability to manage

21.Expenditure for additional advertising also means additional input of capital.

22.Cash holding, even if it exceeds the customary amount and is called "hoarding," is a variety of employing funds available. Under the prevailing state of the market the actor considers cash holding the most appropriate employment of a part of his assets.

a bigger outfit successfully. He may also be frightened by the example provided by once prosperous enterprises for which expansion resulted in failure.

A businessman who, thanks to his splendid good will, is in a position to sell at higher prices than less renowned competitors, could, of course, renounce his advantage and reduce his prices to the level of his competitors. Like every seller of commodities or of labor he could abstain from taking fullest advantage of the state of the market and sell at a price at which demand exceeds supply. In doing so he would be making presents to some people. The donees would be those who could buy at this lowered price. Others, although ready to buy at the same price, would have to go away empty-handed because the supply was not sufficient.

The restriction of the quantity of every article produced and offered for sale is always the outcome of the decisions of entrepreneurs intent upon reaping the highest possible profit and avoiding losses. The characteristic mark of monopoly prices is not to be seen in the fact that the entrepreneurs did not produce more of the article concerned and thus did not bring about a fall in its price. Neither is it to be seen in the fact that complementary factors of production remain unused although their fuller employment would have lowered the price of the product. The only relevant question is whether or not the restriction of production is the outcome of the action of the—monopolistic—owner of a supply of goods and services who withholds a part of this supply in order to attain higher prices for the rest. The characteristic feature of monopoly prices is the monopolist's defiance of the wishes of the consumers. A competitive price for copper means that the final price of copper tends toward a point at which the deposits are exploited to the extent permitted by the prices of the required nonspecific complementary factors of production; the marginal mine does not yield mining rent. The consumers are getting as much copper as they themselves determine by the prices they allow for copper and all other commodities. A monopoly price of copper means that the deposits of copper are utilized only to a smaller degree because this is more advantageous to the owners; capital and labor which, if the supremacy of the consumers were not infringed, would have been employed for the production of additional copper, are employed for the production of other articles for which the demand of the consumers is less intense. The interests of the owners of the copper deposits take precedence over those of the consumers. The available resources of copper are not employed according to the wishes and plans of the public.

Profits are, of course, also the outcome of a discrepancy between the wishes of the consumers and the actions of the entrepreneurs. If all entrepreneurs had had in the past perfect foresight of the present state of the market, no profits and losses would have emerged. Their competition would have already adjusted in the past—due allowance being made for time preference—the prices of the complementary factors of production to the present prices of the products. But this statement cannot brush away the fundamental difference between profits and monopoly gains. The entrepreneur profits to the extent he has succeeded in serving the consumers better than other people have done. The monopolist reaps monopoly gains through impairing the satisfaction of the consumers.

8. Monopoly of Demand

Monopoly prices can emerge only from a monopoly of supply. A monopoly of demand does not bring about a market situation different from that under not monopolized demand. The monopolist buyer—whether he is an individual or a group of individuals acting in concert—cannot reap a specific gain corresponding to the monopoly gains of monopolistic sellers. If he restricts demand, he will buy at a lower price. But then the quantity bought will drop too.

In the same way in which governments restrict competition in order to improve the position of privileged sellers, they can also restrict competition for the benefit of privileged buyers. Again and again governments have put an embargo on the export of certain commodities. Thus by excluding foreign buyers they have aimed at lowering the domestic price. But such a lower price is not a counterpart of monopoly prices.

What is commonly dealt with as monopoly of demand are certain phenomena of the determination of prices for specific complementary factors of production.

The production of one unit of the commodity *m* requires, besides the employment of various nonspecific factors, the employment of one unit of each of the two absolutely specific factors *a* and *b*. Neither *a* nor *b* can be replaced by any other factor; on the other hand *a* is of no use when not combined with *b* and vice versa. The available supply of *a* by far exceeds the available supply of *b*. It is therefore not possible for the owners of *a* to attain any price for *a*. The demand for *a* is always lags behind the supply; *a* is not an economic good. If *a* is a mineral deposit the extraction of which requires the use of capital and labor, the ownership of the deposits does not yield a royalty. There is no mining rent.

But if the owners of *a* form a cartel, they can turn the tables. They can restrict the supply of *a* offered for sale to such a fraction that the supply of *b* exceeds the supply of *a*. Now *a* becomes an economic good for which prices are paid while the price of *b* dwindles to zero. If then the owners of *b* react by forming a cartel too, a price struggle develops between the two monopolistic combines about the outcome of which catallactics can make no statements. As has already been pointed out, the pricing process does not bring about a uniquely determined result in cases in which more than one of the factors of production required is of an absolutely specific character.

It does not matter whether or not the market situation is such that the factors *a* and *b* together could be sold at monopoly prices. It does not make any difference whether the price for a lot including one unit of both *a* and *b* is a monopoly price or a competitive price.

Thus what is sometimes viewed as a monopoly of demand turns out to be a monopoly of supply formed under particular conditions. The sellers of *a* and *b* are intent upon selling at monopoly prices without regard to the question whether or not the price of *m* can be come a monopoly price. What alone matters for them is to obtain as great a share as possible of the joint price which the buyers are ready to pay for *a* and *b* together. The case does not indicate any feature which would make it permissible to apply to it the term *monopoly of demand*. This mode of expression becomes understandable, however, if one takes into account the accidental features marking the contest between the two groups. If the owners of *a* (or *b*) are at the same time the entrepreneurs conduction the processing of *m*, their cartel takes on the outward appearance of a monopoly of demand. But this personal union combining two separate catallactic functions does not alter the essential issue; what is at stake is the settlement of affairs between two groups of monopolistic sellers.

Our example fits, *mutatis mutandis*, the case in which *a* and *b* can also be employed for purposes other than the production of *m*, provided these other employments only yield smaller returns.

9. Consumption as Affected by Monopoly Prices

The individual consumer may react to monopoly prices in different ways.

1. Notwithstanding the rise in price, the individual consumer does not restrict his purchases of the monopolized article. He prefers to restrict the purchase of other goods. (If all consumers were to react in this way, the competitive price would have already risen to the height of the monopoly price.)

2. The consumer restricts his purchase of the monopolized article to such an extent that he does not spend for it more than he would have spent—for the purchase of a larger quantity—under the competitive price. (If all people were to react in this way, the seller would not get more under the monopoly price than he did under the competitive price; he would not derive any gain by deviating from the competitive price.)

3. The consumer restricts his purchase of the monopolized commodity to such an extent that he spends less for it than he would have spent under the competitive price; he buys with the money thus saved goods which he would not have bought otherwise. (If all people were to react in this way, the seller would harm his interests by substituting a higher price for the competitive price; no monopoly price could emerge. Only a benefactor who wanted to wean his fellow men from the consumption of pernicious drugs would in this case raise the price of the article concerned above the competitive level.)

4. The consumer spends more for the monopolized commodity than he would have spent under the competitive price and acquires only a smaller quantity of it.

However the consumer may react, his satisfaction appears to be impaired from the viewpoint of his own valuations. He is not so well served under monopoly prices as under competitive prices. The monopoly gain of the seller is borne by a monopoly deprivation of the buyer. Even if some consumers (as in case 3) acquire goods which they would not have bought in the absence of the monopoly price, their satisfaction is lower than it would have been under a different state of prices. Capital and labor which are withdrawn from the production of products which drops on account of the monopolistic restriction of the supply of one of the complementary factors required for their production, are employed for the production of other things which would otherwise not have been produced. But the consumers value these other things less.

Yet there is an exception to this general rule that monopoly prices benefit the seller and harm the buyer and infringe the supremacy of the consumers' interests. If on a competitive market one of the complementary factors, namely *f*, needed for the production of the consumers' good *g*, does not attain any price at all, although the production of *f* requires various expenditures and consumers are ready to pay for the consumers' good *g* a price which makes its production profitable on a competitive market, the monopoly price for *f* becomes a necessary requirement for the production of *g*. It is this idea

that people advance in favor of patent and copyright legislation. If inventors and authors were not is a position to make money by inventing and writing, they would be prevented from devoting their time to these activities and from defraying the costs involved. The public would not derive any advantage from the absence of monopoly prices for *f*. It would, on the contrary, miss the satisfaction it could derive from the acquisition of *g*.[23]

Many people are alarmed by the reckless use of the deposits of minerals and oil which cannot be replaced. Our contemporaries, they say, squander an exhaustible stock without any regard for the coming generations. We are consuming our own birthright and that of the future. Now these complaints make little sense. We do not know whether later ages will still rely upon the same raw materials on which we depend today. It is true that the exhaustion of the oil deposits and even those of coal is progressing at a quick rate. But it is very likely that in a hundred or five hundred years people will resort to other methods of producing heat and power. Nobody knows whether we, in being less profligate with these deposits, would not deprive ourselves without any advantage to men of the twenty-first or of the twenty-fourth centuries. It is vain to provide for the needs of ages the technological abilities of which we cannot even dream.

But it is contradictory if the same people who lament the depletion of some natural resources are no less vehement in indicting monopolistic restraint in their present-day exploitation. The effect of monopoly prices of mercury is certainly a slowing down of the rate of depletion. In the eyes of those frightened by the aspect of a future scarcity of mercury this effect must appear highly desirable.

Economics in unmasking such contradictions does not aim at a "justification" of monopoly prices for oil, minerals, and ore. Economic has neither the task of justifying nor of condemning. It has merely to scrutinize the effects of all modes of human action. It does not enter the arena in which friends and foes of monopoly prices are intent upon pleading their causes.

Both sides in this heated controversy resort to fallacious arguments. The antimonopoly party is wrong in attributing to every monopoly the power to impair the situation of the buyers by restricting supply and bringing about monopoly prices. It is no less wrong in assuming that there prevails within a market economy, not hampered and sabotaged by government interference, a general tendency toward the formation of monopoly. It is a grotesque distortion of the true state of affairs to speak

23.See below, pp. 680-681.

of *monopoly capitalism* instead of *monopoly interventionism* and of *private cartels* instead of *government-made cartels*. Monopoly prices would be limited to some minerals which can be mined in only a few places and to the field of local limited-space monopolies if the governments were not intent upon fostering them.[24]

The promonopoly party is wrong in crediting to the cartels the economics of big-scale production. Monopolistic concentration of production on one hand, they say, as a rule reduces average costs of production and thus increases the amount of capital and labor available for additional production. However, no cartel is needed in order to eliminate the plants producing at higher costs. Competition on the free market achieves this effect in the absence of any monopoly and of any monopoly prices. It is,on the contrary, often the purpose of government-sponsored cartelization to preserve the existence of plants and farms which the free market would force to discontinue operations precisely because they are producing at too high costs of production. The free market would have eliminated, for example, the submarginal farms and preserved only those for which production pays under the prevailing market price. But the New Deal preferred a different arrangement. It forced all farmers to a proportional restriction of output. It raised by its monopolistic policy the price of agricultural products to such a height that production became reasonable again on submarginal soil.

No less erroneous are the conclusions derived from a confusion of the economies of product standardization and monopoly. If men asked only for one standard type of a definite commodity, production of some articles could be arranged in a more economical way and costs would be lowered accordingly. But if people were to behave in such a manner, standardization and the corresponding cost reduction would emerge also in the absence of monopoly. If, on the other hand, one *forces* the consumers to be content with one standard type only, one does not increase their satisfaction; one impairs it. A dictator may deem the conduct of the consumers rather foolish. Why should they be so crazy about individually fashioned clothes? He may be right from the point of view of his own value judgments. But the trouble is that valuation is personal, individual, and arbitrary. The democracy of the market consists in the fact that people themselves make their choices and that no dictator has the power to force them to submit to his value judgments.

24. See above, p. 366.

10. Price Discrimination on the Part of the Seller

Both competitive prices and monopoly prices are the same for all buyers. There prevails on the market a permanent tendency to eliminate all discrepancies in prices for the same commodity or service. Although the valuations of the buyers and the intensity of their demand as effective on the market are different, they pay the same prices. The wealthy man does not pay more for bread than the less wealthy man, although he would be ready to pay a higher price if he could not buy it cheaper. The enthusiast who would rather restrict his consumption of food than miss a performance of a Beethoven symphony pays no more for admission than a man for whom music is merely a pastime and who would not care for the concert if he could attend it only by renouncing his desire for some trifles. The difference between the price one must pay for a good and the highest amount one would be prepared to pay for it has sometimes been called consumers' surplus.[25]

But there can appear on the market conditions which make it possible for the seller to discriminate between the buyers. He can sell a commodity or a service at different prices to different buyers. He can obtain prices which may sometimes even rise to the point at which the whole consumers' surplus of a buyer disappears. Two conditions must coincide in order to make price discrimination advantageous to the seller.

The first condition is that those buying at a cheaper price are not in a position to resell the commodity or the service to people to whom the discriminating seller sells only at a higher price. If such reselling cannot be prevented, the first seller's intention would be thwarted. The second condition is that the public does not react in such a way that the total net proceeds of the seller lag behind the total net proceeds he would obtain under price uniformity. This second condition is always present under conditions which would make it advantageous to a seller to substitute monopoly prices for competitive prices. But it can also appear under a market situation which would not bring about monopoly gains. For price discrimination does not enjoin upon the seller the necessity of restricting the amount sold. He does not lose any buyer completely; he must merely take into account that some buyers may restrict the amount of their purchases. But as a rule he has the opportunity to sell the remainder of his supply to people who would not have bought at all or would have bought only smaller quantities if they had had

25.Cf. A. Marshall, *Principles of Economics* (8th ed. London, 1930), pp. 124-127.

to pay the uniform competitive price.

Consequently the configuration of production costs plays no role in the considerations of the discriminating seller. Production costs are not affected as the total amount produced and sold remains unaltered.

The most common case of price discrimination is that of physicians. A doctor who can perform 80 treatments in a week and charges $3 for each treatment is fully employed by attending to 30 patients and makes $240 a week. If he charges the 10 wealthiest patients, who together consume 50 treatments, $4 instead of $3, they will consume only 40 treatments. The doctor sells the remaining 10 treatments at $2 each to patients who would not have expended $3 for his professional services. Then his weekly proceeds rise to $270.

As price discrimination is practiced by the seller only if it is more advantageous to him than selling at a uniform price, it is obvious that it results in an alteration of consumption and the allocation of factors of production to various employments. The outcome of discrimination is always that the total amount expended for the acquisition of the good concerned increases. The buyers must provide for their excess expenditure by cutting down other purchases. As it is very unlikely that those benefitted by price discrimination will spend their gains for the purchase of the same goods as those the other people no longer buy in the same quantity, changes in the market data and in production become unavoidable.

In the above example the 10 wealthiest patients are damaged; they pay $4 for a service for which they used to pay only $3. But it is not only the doctor who derives advantage from the discrimination; the patients whom he charges $2 are benefitted too. It is true they must provide the doctor's fees by renouncing other satisfactions. However, they value these other satisfactions less than that conveyed to them by the doctor's treatment. Their degree of contentment attained is increased.

For a full comprehension of price discrimination it is well to remember that, under the division of labor, competition among those eager to acquire the same product does not necessarily impair the individual competitor's position. The competitors' interests are antagonistic only with regard to the services rendered by the complementary nature-given factors of production. This inescapable natural antagonism is superseded by the advantages derived from the division of labor. As far as average costs of production can be reduced by big-scale production, competition among those eager to acquire the same commodity brings about an improvement in the individual competitor's situ-

ation. The fact that not only a few people but a great number are eager to acquire the commodity c makes it possible to manufacture it in cost-saving processes; then even people with modest means can afford it. In the same way it can sometimes happen that price discrimination renders the satisfaction of a need possible which would have remained unsatisfied in its absence.

There live in a city *p* lovers of music, each of whom would be prepared to spend $2 for the recital of a virtuoso. But such a concert requires an expenditure greater than 2 *p* dollars and can therefore not be arranged. But if discrimination of admission fees is possible and among the *p* friends of music *n* are ready to spend $4, the recital becomes feasible, provided that the amount 2 (*n* + *p*) dollars is sufficient. Then *n* people spend $4 each and (*p* - *n*) people $2 each for the admission and forego the satisfaction of the least urgent need they would have satisfied if they had not preferred to attend the recital. Each person in the audience fares better than he would have if the unfeasibility of price discrimination had prevented the performance. It is to the interest to the organizers to enlarge the audience to the point at which the admission of additional customers involves higher costs than the fees they are ready to spend.

Things would be different if the recital could have been arranged even if no more than $2 was charged for admission. Then price discrimination would have impaired the satisfaction of those who are charged $4.

The most common practices in selling admission tickets for artistic performances and railroad tickets at different rates are not the outcome of price discrimination in the catallactic sense of the term. He who pays a higher rate gets something appreciated more than he who pays less. He gets a better seat, a more comfortable traveling opportunity, and so on. Genuine price discrimination is present in the case of physicians who, although attending to each patient with the same care, charge the wealthier clients more than the less wealthy. It is present in the case of railroads charging more for the shipping of goods the transportation of which adds more to their value than for others although the costs incurred by the railroad are the same. It is obvious that both the doctor and the railroad can practice discrimination only within the limits fixed by the opportunity given to the patient and the shipper to find another solution of their problems that is more to their advantage. But this refers to one of the two conditions required for the emergence of price discrimination.

It would be idle to point out a state of affairs in which price discrimination could be practiced by all sellers of all kinds of commodities and services. It is

more important to establish the fact that within a market economy not sabotaged by government interference the conditions required for price discrimination are so rare that it can fairly be called an exceptional phenomenon.

11. Price Discrimination on the Part of the Buyer

While monopoly prices and monopoly gains cannot be realized to the advantage of a monopolistic buyer, the case is different with price discrimination. There is only one condition required for the emergence of price discrimination on the part of a monopolistic buyer on a free market, namely, crass ignorance of the state of the market on the part of the sellers.As such ignorance is unlikely to last for any length of time, price discrimination can only be practiced if the government interferes.

The Swiss Government has established a government owned and operated trade monopoly for cereals. It buys cereals at world-market prices on foreign markets and at higher prices from domestic farmers. In domestic purchases it pays a higher price to farmers producing at higher costs on the rocky soil of the mountain districts and a lower price—although still higher than the world-market price—to the farmers tilling more fertile land.

12. The Connexity of Prices

If a definite process of production brings about the products *p* and *q* simultaneously, the entrepreneurial decisions and actions are directed by weighing the sum of the anticipated prices of *p* and *q*. The prices of *p* and *q* are particularly connected with one another as changes in the demand for *p* (or for *q*) generate changes in the supply of *q* (or for *p*). The mutual relation of the prices of *p* and *q* can be called connexity of production. The businessman calls *p* (or *q*) a by-product of *q* (or *p*).

The production of the consumers' good *z* requires the employment of the factors *p* and *q*, the production of *p* the employment of the factors *a* and *b*, and the production of *q* the employment of the factors *c* and *d*. Then changes in the supply of *p* (or for *q*) bring about changes in the demand for *q* (or for *p*). It does not matter whether the process of producing *z* out of *p* and *q* is accomplished by the same enterprises which produce *p* out of *a* and *b* and *q* out of *c* and *d*, or by entrepreneurs financially independent of one another, or by the consumers themselves as a preliminary step in their consuming. The prices of *p* and *q* are particularly connected with one another because *p*

is useless or of a smaller utility without *q* and vice versa. The mutual relation of the prices of *p* and *q* can be called connexity of consumption.

If the services rendered by a commodity *b* can be substituted, even though in a not perfectly satisfactory way, for those rendered by another commodity *a*, a change in the price of one of them affects the price of the other too. The mutual relation of the prices of *a* and *b* can be called connexity of substitution.

Connexity of production, connexity of consumption, and connexity of substitution are particular connexities of the prices of a limited number of commodities. From these particular connexities one must distinguish the general connexity of the prices of all goods and services. This general connexity is the outcome of the fact that for every kind of want-satisfaction, besides various more or less specific factors, one scarce factor is required which,in spite of the differences in its qualitative power to produce, can, within the limits precisely defined above,[26] be called a nonspecific factor—namely, labor.

Within a hypothetical world in which all factors of production are absolutely specific, human action would operate in a multiplicity of fields of want-satisfaction independent of one another. What links together in our actual world the various fields of want-satisfaction is the existence of a great many nonspecific factors, suitable to be employed for the attainment of various ends and to be substituted in some degree for one another. The fact that *one* factor, labor, is on the one hand required for every kind of production and on the other hand is, within the limits defined, nonspecific, brings about the general connexity of all human activities. It integrates the pricing process into a whole in which all gears work on one another. It makes the market a concatenation of mutually interdependent phenomena.

It would be absurd to look upon a definite price as if it were an isolated object in itself. A price is expressive of the position which acting men attach to a thing under the present state of their efforts to remove uneasiness. It does not indicate a relationship to something unchanging, but merely the instantaneous position in a kaleidoscopically changing assemblage. In this collection of things considered valuable by the value judgments of acting men each particle's place is interrelated with those of all other particles. What is called a price is always a relationship within an integrated system which is the composite effect of human relations.

26. Cf. above, pp. 133-135.

13. Prices and Income

A market price is a real historical phenomenon, the quantitative ratio at which at a definite place and at a definite date two individuals exchanged definite quantities of two definite goods. It refers to the special conditions of the concrete act of exchange. It is ultimately determined by the value judgments of the individuals involved. It is not derived from the general price structure or from the structure of the prices of a special class of commodities or services. What is called the price structure is an abstract notion derived from a multiplicity of individual concrete prices. The market does not generate prices of land or motorcars in general nor wage rates in general, but prices for a certain piece of land and for a certain car and wage rates for a performance of a certain kind. It does not make any difference for the pricing process to what class the things exchanged are to be assigned from any point of view. However they may differ in other regards, in the very act of exchange they are nothing but commodities, i.e., things valued on account of their power to remove felt uneasiness.

The market does not create or determine incomes. It is not a process of income formation. If the owner of a piece of land and the worker husband the physical resources concerned, the land and the man will renew and preserve their power to render services; the agricultural and urban land for a practically indefinite period, the man for a number of years. If the market situation for these factors of production does not deteriorate, it will be possible in the future too to attain a price for their productive employment. Land and working power can be considered as sources of income if they are dealt with as such, that is, if their capacity to produce is not prematurely exhausted by reckless exploitation. It is provident restraint in the use of factors of production, not their natural and physical properties, which convert them into somewhat durable sources of income. There is in nature no such thing as a stream of income. Income is a category of action; it is the outcome of careful economizing of scarce factors. This is still more obvious in the case of capital goods. The produced factors of production are not permanent. Although some of them may have a life of many years, all of them eventually become useless through wear and tear, sometimes even by the mere passing of time. They become durable sources of income only if their owners treat them as such. Capital can be preserved as a source of income if the consumption of its products, market conditions remaining unchanged, is restricted in such a way as not to impair the replacement of the worn out parts.

Changes in the market data can frustrate every endeavor to perpetuate a source of income. Industrial equipment becomes obsolete if demand changes or if it is superseded by something better. Land becomes useless if more fertile soil is made accessible in sufficient quantities. Expertness and skill for the performance of special kinds of work lose their remunerativeness when new fashions or new methods of production narrow the opportunity for their employment. The success of any provision for the uncertain future depends on the correctness of the anticipations which guided it. No income can be made safe against changes not adequately foreseen.

Neither is the pricing process a form of distribution. As has been pointed out already, there is nothing in the market economy to which the notion of distribution could be applied.

14. Prices and Production

The pricing process of the unhampered market directs production into those channels in which it best serves the wishes of the consumers as manifested on the market. Only in the case of monopoly prices have the monopolists the power to divert production, within a limited range, from this line into other lines to their own benefit.

The prices determine which of the factors of production should be employed and which should be left unused. The specific factors of production are employed only if there is no more valuable employment available for the complementary nonspecific factors. There are technological recipes, land, and nonconvertible capital goods whose capacity to produce remains unused because their employment would mean a waste of the scarcest of all factors, labor. While under the conditions present in our world there cannot be in the long run unemployment of labor in a free labor market, unused capacity of land and of inconvertible industrial equipment is a regular phenomenon.

It is nonsense to lament the fact of unused capacity. The unused capacity of equipment made obsolete by technological improvement is a landmark of material progress. It would be a blessing if the establishment of durable peace would render munitions plants unused or if the discovery of an efficient method of preventing and curing tuberculosis would render obsolete sanatoria for the treatment of people affected by this evil. It would be sensible to deplore the lack of provision in the past which resulted in malinvestment of capital goods. Yet, men are not infallible. A certain amount of malinvestment is unavoidable. What has to be done is to shun policies that like credit expansion artificially foster malinvestment.

Modern technology could easily grow oranges and grapes in hot-houses in the arctic and subarctic countries. Everybody would call such a venture lunacy. But it is essentially the same to preserve the growing of cereals in rocky mountain valleys by tariffs and other devices of protectionism while elsewhere there is plenty of fallow fertile land. The difference is merely one of degree.

The inhabitants of the Swiss Jura prefer to manufacture watches instead of growing wheat. Watchmaking is for them the cheapest way to acquire wheat. On the other hand the growing of wheat is the cheapest way for the Canadian farmer to acquire watches. The fact that the inhabitants of the Jura do not grow wheat and the Canadians do not manufacture watches is not more worthy of notice than the fact that tailors do not make their shoes and shoemakers do not make their clothes.

15. The Chimera of Nonmarket Prices

Prices are a market phenomenon. They are generated by the market process and are the pith of the market economy. There is no such thing as prices outside the market. Prices cannot be constructed synthetically, as it were. They are the resultant of a certain constellation of market data, of actions and reactions of the members of a market society. It is vain to meditate what prices would have been if some of their determinants had been different. Such fantastic designs are no more sensible than whimsical speculations about what the course of history would have been if Napoleon had been killed in the battle of Arcole or if Lincoln had ordered Major Anderson to withdraw from Fort Sumter.

It is no less vain to ponder on what prices ought to be. Everybody is pleased if the prices of things he wants to buy drop and the prices of the things he wants to sell rise. In expressing such wishes a man is sincere if he admits that his point of view is personal. It is another question whether, from his personal point of view, he would be well advised to prompt the government to use its power of coercion and oppression to interfere with the market's price structure. It will be shown in the sixth part of this book what the inescapable consequences of such a policy of interventionism must be.

But one deludes oneself or practices deception if one calls such wishes and arbitrary value judgments the voice of objective truth. In human action nothing counts but the various individuals' desires for the attainment of ends. With regard to the choice of these ends there is no question of truth; all that matters is value. Value judgments are necessarily always subjective, whether they are passed by one man only or by many men,

by a blockhead, a professor, or a statesman.

Any price determined on a market is the necessary outgrowth of the interplay of the forces operating, that is, demand and supply. Whatever the market situation which generated this price may be, with regard to it the price is always adequate, genuine, and real. It cannot be higher if no bidder ready to offer a higher price turns up, and it cannot be lower if no seller ready to deliver at a lower price turns up. Only the appearance of such people ready to buy or to sell can alter prices.

Economics analyzes the market process which generates commodity prices, wage rates, and interest rates. It does not develop formulas which would enable anybody to compute a "correct" price different from that established on the market by the interaction of buyers and sellers.

At the bottom of many efforts to determine nonmarket prices is the confused and contradictory notion of real costs. If costs were a real thing, i.e., a quantity independent of personal value judgments and objectively discernible and measurable, it would be possible for a disinterested arbiter to determine their height and thus the correct price. There is no need to dwell any longer on the absurdity of this idea. Costs are a phenomenon of valuation. Costs are the value attached to the most valuable want-satisfaction which remains unsatisfied because the means required for its satisfaction are employed for that want-satisfaction the cost of which we are dealing with. The attainment of an excess of the value of the product over the costs, a profit, is the goal of every production effort. Profit is the pay-off of successful action. It cannot be defined without reference to valuation. It is a phenomenon of valuation and has no direct relation to physical and other phenomena of the external world.

Economic analysis cannot help reducing all items of cost to value judgments. The socialists and interventionists call entrepreneurial profit, interest on capital, and rent of land "unearned" because they consider that only the toil and trouble of the worker is real and worthy of being rewarded. However, reality does not reward toil and trouble. If toil and trouble is expended according to well-conceived plans, its outcome increases the means available for want-satisfaction. Whatever some people may consider as just and fair, the only relevant question is always the same. What alone matters is which system of social organization is better suited to attain those ends for which people are ready to expend toil and trouble. The question is: market economy, or socialism? There is no third solution. The notion of a market economy with nonmarket prices is absurd. The very idea of cost

prices is unrealizable. Even if the cost price formula is applied only to entrepreneurial profits, it paralyzes the market. If commodities and services are to be sold below the price the market would have determined for them, supply always lags behind demand. Then the market can neither determine what should or should not be produced, nor to whom the commodities and services should go. Chaos results.

This refers also to monopoly prices. It is reasonable to abstain from all policies which could result in the emergence of monopoly prices. But whether monopoly prices are brought about by such promonopoly government policies or in spite of the absence of such policies, no alleged "fact finding" and no armchair speculation can discover another price at which demand and supply would become equal. The failure of all experiments to find a satisfactory solution for the limited-space monopoly of public utilities clearly proves this truth.

It is the very essence of prices that they are the offshoot of the actions of individuals and groups of individuals acting on their own behalf. The catallactic concept of exchange ratios and prices precludes anything that is the effect of actions of a central authority, of people resorting to violence and threats in the name of society or the state or of an armed pressure group. In declaring that it is not the business of the government to determine prices, we do not step beyond the borders of logical thinking. A government can no more determine prices than a goose can lay hen's eggs.

We can think of a social system in which there are no prices at all, and we can think of government decrees which aim at fixing prices at a height different from that which the market would determine. It is one of the tasks of economics to study the problems implied. However, precisely because we want to examine these problems it is necessary clearly to distinguish between prices and government decrees. Prices are by definition determined by peoples' buying and selling or abstention from buying and selling. They must not be confused with fiats issued by governments or other agencies enforcing their orders by an apparatus of coercion and compulsion.[27]

27. In order not to confuse the reader by the introduction of too many new terms, we shall keep to the widespread usage of calling such fiats *prices, interest rates, wage rates decreed and enforced by governments or other agencies of compulsion (e.g., labor unions)*. But one must never lose sight of the fundamental difference between the market phenomena of prices, wages, and interest rates on the one hand, and the legal phenomena of maximum of minimum prices, wages, and interest rates, designed to nullify these market phenomena, on the other hand.

XVII. INDIRECT EXCHANGE

1. Media of Exchange and Money

INTERPERSONAL exchange is called indirect exchange if, between the commodities and services the reciprocal exchange of which is the ultimate end of exchanging, one or several media of exchange are interposed. The subject matter of the theory of indirect exchange is the study of the ration of exchange between the media of exchange on the one hand and the goods and services of all orders on the other hand. The statements of the theory of indirect exchange refer to all instances of indirect exchange and to all things which are employed as media of exchange.

A medium of exchange which is commonly used as such is called money. The notion of money is vague, as its definition refers to the vague term "commonly used." There ar borderline cases in which it cannot be decided whether a medium of exchange is or is not "commonly" used and should be called money. But this vagueness in the denotation of money in no way affects the exactitude and precision required by praxeological theory. For all that is to be predicated of money is valid for every medium of exchange. It is therefore immaterial whether one preserves the traditional term *theory of money* or substitutes for it another term. The theory of money was and is always the theory of indirect exchange and of the medial of exchange.[1]

2. Observations on Some Widespread Errors

The fateful errors of popular monetary doctrines which have led astray the monetary policies of almost all governments would hardly have come into existence if many economists had not themselves committed blunders in dealing with monetary issues and did not stubbornly cling to them.

There is first of all the spurious idea of the supposed neutrality of money.[2] An outgrowth of this doctrine was the notion of the "level" of prices that

1. The theory of monetary calculation does not belong to the theory of indirect exchange. It is a part of the general theory of praxeology.

2. Cf. above, p. 202. Important contributions to the history and terminology of this doctrine are provided by Hayek, *Prices and Production* (rev. ed. London, 1935), pp. 1 ff., 129 ff.

rises or falls proportionately with the increase or decrease in the quantity of money in circulation. It was not realized that changes in the quantity of money can never affect the prices of all goods and services at the same time and to the same extent. Nor was it realized that changes in the purchasing power of the monetary unit are necessarily linked with changes in the mutual relations between those buying and selling. In order to prove the doctrine that the quantity of money and prices rise and fall proportionately, recourse was had in dealing with the theory of money to a procedure entirely different from that modern economics applies in dealing with all its other problems. Instead of starting from the actions of individuals, as catallactics must do without exception, formulas were constructed designed to comprehend the whole of the market economy. Elements of these formulas were: the total supply of money available in the *Volkswirtschaft*; the volume of trade—i.e., the money equivalent of all transfers of commodities and services as effected in the Volkswirtschaft; the average velocity of circulation of the monetary units; the level of prices. These formulas seemingly provided evidence of the correctness of the price level doctrine. In fact, however, this whole mode of reasoning is a typical case of arguing in a circle. For the equation of exchange already involves the level doctrines which it tries to prove. It is essentially nothing but a mathematical expression of the—untenable—doctrine that there is proportionality in the movements of the quantity of money and of prices.

In analyzing the equation of exchange one assumes that one of its elements—total supply of money, volume of trade, velocity of circulation—changes, without asking how such changes occur. It is not recognized that changes in these magnitudes do not emerge in the Volkswirtschaft as such, but in the individual actors' conditions, and that it is the interplay of the reactions of these actors that results in alterations of the price structure. The mathematical economists refuse to start from the various individuals' demand for and supply of money. They introduce instead the spurious notion of velocity of circulation fashioned according to the patterns of mechanics.

There is at this point of our reasoning no need to deal with the question of whether or not the mathematical economists are right in assuming that the services rendered by money consist wholly or essentially in its turnover, in its circulation. Even if this were true, it would still be faulty to explain the purchasing power—the price—of the monetary unit on the basis of its services. The services rendered by water, whisky, and coffee do not explain the prices paid for these things. What they explain is only why people, as

far as they recognize these services, under certain further conditions demand definite quantities of these things. It is always demand that influences the price structure, not the objective value in use.

It is true that with regard to money the task of catallactics is broader than with regard to vendible goods. It is not the task of catallactics, but of psychology and physiology, to explain why people are intent on securing the services which the various vendible commodities can render. It *is* a task of catallactics, however, to deal with this question with regard to money. Catallactics alone can tell us what advantages a man expects from holding money. But it is not these expected advantages which determine the purchasing power of money. The eagerness to secure these advantages is only one of the factors in bringing about the demand for money. It is demand, a subjective element whose intensity is entirely determined by value judgments, and not any objective fact, any power to bring about a certain effect, that plays a role in the formation of the market's exchange ratios.

The deficiency of the equation of exchange and its basic elements is that they look at market phenomena from a holistic point of view. They are deluded by their prepossession with the Volkswirtschaft notion. But where there is, in the strict sense of the term, a Volkswirtschaft, there is neither a market or prices and money. On a market there are only individuals or groups of individuals acting in concert. What motivate these actors are their own concerns, not those of the whole market economy. If there is any sense in such notions as volume of trade and velocity of circulation, then they refer to the resultant of the individuals' actions. It is not permissible to resort to these notions in order to explain the actions of the individuals. The first question that catallactics must raise with regard to changes in the total quantity of money available in the market system is how such changes affect the various individuals' conduct. Modern economics does not ask what "iron" or "bread" is worth, but what a definite piece of iron or of bread is worth to an acting individual at a definite date and a definite place. It cannot help proceeding in the same way with regard to money. The equation of exchange is incompatible with the fundamental principles of economic thought. It is a relapse to the thinking of ages in which people failed to comprehend praxeological phenomena because they were committed to holistic notions. It is sterile, as were the speculations of earlier ages concerning the value of "iron" and "bread" in general.

The theory of money is an essential part of the catallactic theory. It must

be dealt with in the same manner which is applied to all other catallactic problems.

3. Demand for Money and Supply of Money

In the marketability of the various commodities and services there prevail considerable differences. There are goods for which it is not difficult to find applicants ready to disburse the highest recompense which, under the given state of affairs, can possibly be obtained, or a recompense only slightly smaller. There are other goods for which it is very hard to find a customer quickly, even if the vendor is ready to be content with a compensation much smaller than he could reap if he could find another aspirant whose demand is more intense. It is these differences in the marketability of the various commodities and services which created indirect exchange. A man who at the instant cannot acquire what he wants to get for the conduct of his own household or business, or who does not yet know what kind of goods he will need in the uncertain future, comes nearer to his ultimate goal if he exchanges a less marketable good he wants to trade against a more marketable one. It may also happen that the physical properties of the merchandise he wants to give away (as, for instance, its perishability or the costs incurred by its storage or similar circumstances) impel him not to wait longer. Sometimes he may be prompted to hurry in giving away the good concerned because he is afraid of a deterioration of its market value. In all such cases he improves his own situation in acquiring a more marketable good, even if this good is not suitable to satisfy directly any of his own needs.

A medium of exchange is a good which people acquire neither for their own consumption nor for employment in their own production activities, but with the intention of exchanging it at a later date against those goods which they want to use either for consumption or for production.

Money is a medium of exchange. It is the most marketable good which people acquire because they want to offer it in later acts of interpersonal exchange. Money is the thing which serves as the generally accepted and commonly used medium of exchange. This is its only function. All the other functions which people ascribe to money are merely particular aspects of its primary and sole function, that of a medium of exchange.[3]

Media of exchange are economic goods. They are scarce; there is a demand for them. There are on the market people who desire to acquire them

3. Cf. Mises, *The Theory of Money and Credit*, trans. by H. E. Batson (London and New York, 1934), pp. 34-37.

and are ready to exchange goods and services against them. Media of exchange have value in exchange. People make sacrifices for their acquisition; they pay "prices" for them. The peculiarity of these prices lies merely in the fact that they cannot be expressed in terms of money. In reference to the vendible goods and services we speak of prices or of money prices. In reference to money we speak of its purchasing power with regard to various vendible goods.

There exists a demand for media of exchange because people want to keep a store of them. Every member of a market society wants to have a definite amount of money in his pocket or box, a cash holding or cash balance of a definite height. Sometimes he wants to keep a larger cash holding, sometimes a smaller; in exceptional cases he may even renounce any cash holding. At any rate, the immense majority of people aim not only to own various vendible goods; they want no less to hold money. Their cash holding is not merely a residuum, an unspent margin of their wealth. It is not an unintentional remainder left over after all intentional acts of buying and selling have been consummated. Its amount is determined by a deliberate demand for cash. And as with all other goods, it is the changes in the relation between demand for and supply of money that bring about changes in the exchange ratio between money and the vendible goods.

Every piece of money is owned by one of the members of the market economy. The transfer of money from the control of one actor into that of another is temporally immediate and continuous. There is no fraction of time in between in which the money is not a part of an individual's or a firm's cash holding, but just in "circulation."[4] It is unsound to distinguish between circulating and idle money. It is no less faulty to distinguish between circulating money and hoarded money. What is called hoarding is a height of cash holding which—according to the personal opinion of an observer—exceeds what is deemed normal and adequate. However, hoarding is cash holding. Hoarded money is still money and it serves in the hoards the same purposes which it serves in cash holdings called normal. He who hoards money believes that some special conditions make it expedient to accumulate a cash holding which exceeds the amount he himself would keep under different conditions, or other people keep, or an economist censuring his action considers appropriate. That he acts in this way influences the config-

4. Money can be in the process of transportation, it can travel in trains, ships, or planes from one place to another. But it is in this case, too, always subject to somebody's control, is somebody's property.

uration of the demand for money in the same way in which every "normal" demand influences it.

Many economists avoid applying the terms demand and supply in the sense of demand for and supply of money for cash holding because they fear a confusion with the current terminology as used by the bankers. It is, in fact, customary to call demand for money the demand for short-term loans and supply of money the supply of such loans. Accordingly, one calls the market for short-term loans the money market. One says money is scarce if there prevails a tendency toward a rise in the rate of interest for short-term loans, and one says money is plentiful if the rate of interest for such loans is decreasing. These modes of speech are so firmly entrenched that it is out of the question to venture to discard them. But they have favored the spread of fateful errors. They made people confound the notions of money and of capital and believe that increasing the quantity of money could lower the rate of interest lastingly. But it is precisely the crassness of these errors which makes it unlikely that the terminology suggested could create any misunderstanding. It is hard to assume that economists could err with regard to such fundamental issues.

Others maintained that one should not speak of the demand for and supply of money because the aims of those demanding money differ from the aims of those demanding vendible commodities. Commodities, they say, are demanded ultimately for consumption, while money is demanded in order to be given away in further acts of exchange. This objection is no less invalid. The use which people make of a medium of exchange consists eventually in its being given away. But first of all they are eager to accumulate a certain amount of it in order to be ready for the moment in which a purchase may be accomplished. Precisely because people do not want to provide for their own needs right at the instant at which they give away the goods and services they themselves bring to the market, precisely because they want to wait or are forced to wait until propitious conditions for buying appear, they barter not directly but indirectly through the interposition of a medium of exchange. The fact that money is not worn out by the use one makes of it and that it can render its services practically for an unlimited length of time is an important factor in the configuration of its supply. But it does not alter the fact that the appraisement of money is to be explained in the same way as the appraisement of all other goods: by the demand on the part of those who are eager to acquire a definite quantity of it.

Economists have tried to enumerate the factors which within the whole

economic system may increase or decrease the demand for money. Such factors are: the population figure; the extent to which the individual households provide for their own needs by autarkic production and the extent to which they produce for other people's needs, selling their products and buying for their own consumption on the market; the distribution of business activity and the settlement of payments over the various seasons of the year; institutions for the settlement of claims and counterclaims by mutual cancellation, such as clearinghouses. All these factors indeed influence the demand for money and the height of the various individuals' and firms' cash holding. But they influence them only indirectly by the role they play in the considerations of people concerning the determination of the amount of cash balances they deem appropriate. What decides the matter is always the value judgments of the men concerned. The various actors make up their minds about what they believe the adequate height of their cash holding should be. They carry out their resolution by renouncing the purchase of commodities, securities, and interest-bearing claims, and by selling such assets or conversely by increasing their purchases. With money, things are not different from what they are with regard to all other goods and services. The demand for money is determined by the conduct of people intent upon acquiring it for their cash holding.

Another objection raised against the notion of the demand for money was this: The marginal utility of the money unit decreases much more slowly than that of the other commodities; in fact its decrease is so slow that it can be practically ignored. With regard to money nobody ever says that his demand is satisfied, and nobody ever forsakes an opportunity to acquire more money provided the sacrifice required is not too great. It is therefore impermissible to consider the demand for money as limited. The very notion of an unlimited demand is, however, contradictory. This popular reasoning is entirely fallacious. It confounds the demand for money for cash holding with the desire for more wealth as expressed in terms of money. He who says that his thirst for more money can never be quenched, does not mean to say that his cash holding can never be too large. What he really means is that he can never be rich enough. If additional money flows into his hands, he will not use it for an increase of his cash balance or he will use only a part of it for this purpose. He will expend the surplus either for instantaneous consumption or for investment. Nobody ever keeps more money than he wants to have as cash holding.

The insight that the exchange ratio between money on the one hand and

the vendible commodities and services on the other is determined, in the same way as the mutual exchange ration between the various vendible goods, by demand and supply was the essence of the *quantity theory of money*. This theory is essentially an application of the general theory of supply and demand to the special instance of money. Its merit was the endeavor to explain the determination of money's purchasing power by resorting to the same reasoning which is employed for the explanation of all other exchange ratios. Its shortcoming was that it resorted to a holistic interpretation. It looked at the total supply of money in the Volkswirtschaft and not at the actions of the individual men and firms. An outgrowth of this erroneous point of view was the idea that there prevails a proportionality in the changes of the—total—quantity of money and of money prices. But the older critics failed in their attempts to explode the errors inherent in the quantity theory and to substitute a more satisfactory theory for it. They did not fight what was wrong in the quantity theory; they attacked, on the contrary, its nucleus of truth. They were intent upon denying that there is a causal relation between the movements of prices and those of the quantity of money. This denial led them into a labyrinth of errors, contradictions, and nonsense. Modern monetary theory takes up the thread of the traditional quantity theory as far as it starts from the cognition that changes in the purchasing power of money must be dealt with according to the principles applied to all other market phenomena and that there exists a connection between the changes in the demand for and supply of money on the none hand and those of purchasing power on the other. In this sense one may call the modern theory of money an improved variety of the quantity theory.

The Epistemological Import of Carl Menger's Theory of the Origin of Money

Carl Menger has not only provided an irrefutable praxeological theory of the origin of money. He has also recognized the import of his theory for the elucidation of fundamental principles of praxeology and its methods of research.[5]

There were authors who tried to explain the origin of money by decree or covenant. The authority, the state, or a compact between citizens has purposively and consciously established indirect exchange and money. The main deficiency of this doctrine is not to be seen in the assumption that people of an age unfamiliar with indirect exchange and money could design

5. Cf. Carl Menger's books *Grundsatze der Volkswirtschaftslehre* (Vienna, 1871), pp. 250 ff.; *ibid*. (2d ed. Vienna, 1923), pp. 241 ff.; *Untersuchungen uber die Methode der Sozialwissenschaften* (Leipzig, 1883), p. 171 ff.

a plan of a new economic order, entirely different from the real conditions of their own age, and could comprehend the importance of such a plan. Neither is it to be seen in the fact that history does not afford a clue for the support of such statements. There are more substantial reasons for rejecting it.

If it is assumed that the conditions of the parties concerned are improved by every step that leads from direct exchange to indirect exchange and subsequently to giving preference for use as a medium of exchange to certain goods distinguished by their especially high marketability, it is difficult to conceive why one should, in dealing with the origin of indirect exchange, resort in addition to authoritarian decree or an explicit compact between citizens. A man who finds it hard to obtain in direct barter what he wants to acquire renders better his chances of acquiring it in later acts of exchange by the procurement of a more marketable good. Under these circumstances there was no need of government interference or of a compact between the citizens. The happy idea of proceeding in this way could strike the shrewdest individuals, and the less resourceful could imitate the former's method. It is certainly more plausible to take for granted that the immediate advantages conferred by indirect exchange were recognized by the acting parties than to assume that the whole image of a society trading by means of money was conceived by a genius and, if we adopt the covenant doctrine, made obvious to the rest of the people by persuasion.

If, however, we do not assume that individuals discovered the fact that they fare better through indirect exchange than through waiting for an opportunity for direct exchange, and, for the sake of argument, admit that the authorities or a compact introduced money, further questions are raised. We must ask what kind of measures were applied in order to induce people to adopt a procedure the utility of which they did not comprehend and which was technically more complicated than direct exchange. We may assume that compulsion was practiced. But then we must ask, further, at what time and by what occurrences indirect exchange and the use of money later ceased to be procedures troublesome or at least indifferent to the individuals concerned and became advantageous to them.

The praxeological method traces all phenomena back to the actions of individuals. If conditions of interpersonal exchange are such that indirect exchange facilitates the transactions, and if and as far as people realize these advantages, indirect exchange and money come into being. Historical experience shows that these conditions were and are present. How, in the absence of these conditions, people could have adopted indirect exchange and money and clung to these modes of exchanging is inconceivable.

The historical question concerning the origin of indirect exchange and

money is after all of no concern to praxeology. The only relevant thing is that indirect exchange and money exist because the conditions for their existence were and are present. If this is so, praxeology does not need to resort to the hypothesis that authoritarian decree or a covenant invented these modes of exchanging. The etatists may if they like continue to ascribe the "invention" of money to the state, however unlikely this may be. What matters is that a man acquires a good not in order to consume it or to use it in production, but in order to give it away in a further act of exchange. Such conduct on the part of people makes a good a medium of exchange and, if such conduct becomes common with regard to a certain good, makes it money. All theorems of the catallactic theory of media of exchange and of money refer to the services which a good renders in its capacity as a medium of exchange. Even if it were true that the impulse for the introduction of indirect exchange and money was provided by the authorities or by an agreement between the members of society, the statement remains unshaken that only the conduct of exchanging people can create indirect exchange and money.

History may tell us where and when for the first time media of exchange came into use and how, subsequently, the range of goods employed for this purpose was more and more restricted. As the differentiation between the broader notion of a medium of exchange and the narrower notion of money is not sharp, but gradual, no agreement can be reached about the historical transition from simple media of exchange to money. Answering such a question is a matter of historical understanding. But, as has been mentioned, the distinction between direct exchange and indirect exchange is sharp and everything that catallactics establishes with regard to media of exchange refers categorially to all goods which are demanded and acquired as such media.

As far as the statement that indirect exchange and money were established by decree or by covenant is meant to be an account of historical events, it is the task of historians to expose its falsity. As far as it is advanced merely as a historical statement, it can in no way affect the catallactic theory of money and its explanation of the evolution of indirect exchange. But if it is designed as a statement about human action and social events, it is useless because it states nothing about action. It is not a statement about human action to declare that one day rulers of citizens assembled in convention were suddenly struck by the inspiration that it would be a good idea to exchange indirectly and through the intermediary of a commonly used medium of exchange. It is merely pushing back the problem involved.

It is necessary to comprehend that one does not contribute anything to the scientific conception of human actions and social phenomena if one declares that the state or a charismatic leader or an inspiration which

descended upon all the people have created them. Neither do such statements refute the teachings of a theory showing how such phenomena can be acknowledged as "the unintentional outcome, the resultant not deliberately designed and aimed at by specifically individual endeavors of the members of society."[6]

4. The Determination of the Purchasing Power of Money

As soon as an economic good is demanded not only by those who want to use it for consumption or production, but also by people who want to keep it as a medium of exchange an to give it away at need in a later act of exchange, the demand for it increases. A new employment for this good has emerged and creates an additional demand for it. As with every other economic good, such an additional demand brings about a rise in its value in exchange, i.e., in the quantity of other goods which are offered for its acquisition. The amount of other goods which can be obtained in giving away a medium of exchange, its "price" as expressed in terms of various goods and services, is in part determined by the demand of those who want to acquire it as a medium of exchange. If people stop using the good in question as a medium of exchange, this additional specific demand disappears and the "price" drops concomitantly.

Thus the demand for a medium of exchange is the composite of two partial demands: the demand displayed by the intention to use it in consumption and production and that displayed by the intention to use it as a medium of exchange.[7] With regard to modern metallic money one speaks of the industrial demand and of the monetary demand. The value in exchange (purchasing power) of a medium of exchange is the resultant of the cumulative effect of both partial demands.

Now the extent of that part of the demand for a medium of exchange which is displayed on account of its service as a medium of exchange depends on its value in exchange. This fact raises difficulties which many economists considered insoluble so that they abstained from following farther along this line of reasoning. It is illogical, they said, to explain the purchasing power of money by reference to the demand for money, and the demand for money by reference to its purchasing power.

The difficulty is, however, merely apparent. The purchasing power which

6. Cf. Menger, *Untersuchungen*, l.c., p. 178.

7. The problems of money exclusively dedicated to the service of a medium of exchange and not fit to render any other services on account of which it would be demanded are dealt with below in section 9.

we explain by referring to the extent of specific demand is not the same purchasing power the height of which determines this specific demand. The problem is to conceive the determination of the purchasing power of the immediate future, of the impending moment. For the solution of this problem we refer to the purchasing power of the immediate past, of the moment just passed. These are two distinct magnitudes. It is erroneous to object to our theorem, which may be called the regression theorem, that it moves in a vicious circle.[8]

But, say the critics, this is tantamount to merely pushing back the problem. For now one must still explain the determination of yesterday's purchasing power. If one explains this in the same way by referring to the purchasing power of the day before yesterday and so on, one slips into a *regressus in infinitum*. This reasoning, they assert, is certainly not a complete and logically satisfactory solution of the problem involved. What these critics fail to see is that the regression does not go back endlessly. It reaches a point at which the explanation is completed and no further question remains unanswered. If we trace the purchasing power of money back step by step, we finally arrive at the point at which the service of the good concerned as a medium of exchange begins. At this point yesterday's exchange value is exclusively determined by the nonmonetary—industrial—demand which is displayed only by those who want to use this good for other employments than that of a medium of exchange.

But, the critics continue, this means explaining that part of money's purchasing power which is due to its service as a medium of exchange by its employment for industrial purposes. The very problem, the explanation of the specific monetary component of its exchange value, remains unsolved. Here too the critics are mistaken. That component of money's value which is an outcome of the services it renders as a medium of exchange is entirely explained by reference to these specific monetary services and the demand they create. Two facts are not to be denied and are not denied by anybody. First, that the demand for a medium of exchange is determined by

8. The present writer first developed this regression theorem of purchasing power in the first edition of his book *Theory of Money and Credit*, published in 1912 (pp. 97-123 of the English-language translation). His theorem has been criticized from various points of view. Some of the objections raised, especially those by B. M. Anderson in his thoughtful book *The Value of Money*, first published in 1917 (cf. pp. 100 ff. of the 1936 edition), deserve a very careful examination. The importance of the problems involved makes it necessary to weigh also the objections of H. Ellis (*German Monetary Theory 1905-1933* [Cambridge, 1934], pp. 77 ff.). In the text above, all objections raised are particularized and critically examined.

considerations of its exchange value which is an outcome both of the monetary and the industrial services it renders. Second, that the exchange value of a good which has not yet been demanded for service as a medium of exchange is determined solely by a demand on the part of people eager to use it for industrial purposes, i.e., either for consumption or for production. Now, the regression theorem aims at interpreting the first emergence of a monetary demand for a good which previously had been demanded exclusively for industrial purposes as influenced by the exchange value that was ascribed to it at this moment on account of its nonmonetary services only. This certainly does not involve explaining the specific monetary exchange value of a medium of exchange on the ground of its industrial exchange value.

Finally it was objected to the regression theorem that its approach is historical, not theoretical. This objection is no less mistaken. To explain an event historically means to show how it was produced by forces and factors operating at a definite date and a definite place. These individual forces and factors are the ultimate elements of the interpretation. They are ultimate data and as such not open to any further analysis and reduction. To explain a phenomenon theoretically means to trace back its appearance to the operation of general rules which are already comprised in the theoretical system. The regression theorem complies with this requirement. It traces the specific exchange value of a medium of exchange back to its function as such a medium and to the theorems concerning the process of valuing and pricing as developed by the general catallactic theory. It deduces a more special case from the rules of a more universal theory. It shows how the special phenomenon necessarily emerges out of the operation of the rules generally valid for all phenomena. It does not say: This happened at that time and at that place. It says: This always happens when the conditions appear; whenever a good which has not been demanded previously for the employment as a medium of exchange begins to be demanded for this employment, the same effects must appear again; no good can be employed for the function of a medium of exchange which at the very beginning of its use for this purpose did not have exchange value on account of other employments. And all these statements implied in the regression theorem are enounced apodictically as implied in the apriorism of praxeology. It *must* happen this way. Nobody can ever succeed in construction a hypothetical case in which things were to occur in a different way.

The purchasing power of money is determined by demand and supply, as is the case with the prices of all vendible goods and services. As action always aims at a more satisfactory arrangement of future conditions, he who

considers acquiring or giving away money is, of course, first of all interested in its future purchasing power and the future structure of prices. But he cannot form a judgment about the future purchasing power of money otherwise than by looking at its configuration in the immediate past. It is this fact that radically distinguishes the determination of the purchasing power of money from the determination of the mutual exchange ration between the various vendible goods and services. With regard to these latter the actors have nothing else to consider than their importance for future want-satisfaction. If a new commodity unheard of before is offered for sale, as was, for instance, the case with radio sets a few decades ago, the only question that matters for the individual is whether or not the satisfaction that the new gadget will provide is greater than that expected from those goods he would have to renounce in order to buy the new thing. Knowledge about past prices is for the buyer merely a means to reap a consumer's surplus. If he were not intent upon this goal, he could, if need be, arrange his purchases without any familiarity with the market prices of the immediate past, which are popularly called present prices. He could make value judgments without appraisement. As has been mentioned already, the obliteration of the memory of all prices of the past would not prevent the formation of new exchange ratios between the various vendible things. But if knowledge about money's purchasing power were to fade away, the process of developing indirect exchange and media of exchange would have to start anew. It would become necessary to begin again with employing some goods, more marketable than the rest, as media of exchange. The demand for these goods would increase and would add to the amount of exchange value derived from their industrial (nonmonetary) employment a specific component due to their new use as a medium of exchange. A value judgment is, with reference to money, only possible if it can be based on appraisement. The acceptance of a new kind of money presupposes that the thing in question already has previous exchange value on account of the services it can render directly to consumption or production. Neither a buyer nor a seller could judge the value of a monetary unit if he had no information about its exchange value—its purchasing power—in the immediate past.

The relation between the demand for money and the supply of money, which may be called the money relation, determines the height of purchasing power. Today's money relation, as it is shaped on the ground of yesterday's purchasing power, determines today's purchasing power. He who wants to increase his cash holding restricts his purchases and increases his sales and

thus brings about a tendency toward falling prices. He who wants to reduce his cash holding increases his purchases—either for consumption or for production and investment—and restricts his sales; thus he brings about a tendency toward rising prices.

Changes in the supply of money must necessarily alter the disposition of vendible goods as owned by various individuals and firms. The quantity of money available in the whole market system cannot increase or decrease otherwise than by first increasing or decreasing the cash holdings of certain individual members. We may, if we like, assume that every member gets a share of the additional money right at the moment of its inflow into the system, or shares in the reduction of the quantity of money. But whether we assume this or not, the final result of our demonstration will remain the same. This result will be that changes in the structure of prices brought about by changes in the supply of money available in the economic system never affect the prices of the various commodities and services to the same extent and at the same date.

Let us assume that the government issues an additional quantity of paper money. The government plans either to buy commodities and services or to repay debts incurred or to pay interest on such debts. However this may be, the treasury enters the market with an additional demand for goods and services; it is now in a position to buy more goods than it could buy before. The prices of the commodities it buys rise. If the government had expended in its purchases money collected by taxation, the taxpayers would have restricted their purchases and, while the prices of goods bought by the government would have risen, those of other goods would have dropped. But this fall in the prices of the goods the taxpayers used to buy does not occur if the government increases the quantity of money at its disposal without reducing the quantity of money in the hands of the public. The prices of some commodities—viz., of those the government buys—rise immediately, while those of the other commodities remain unaltered for the time being. But the process goes on. Those selling the commodities asked for by the government are now themselves in a position to buy more than they used previously. The prices of the things these people are buying in larger quantities therefore rise too. Thus the boom spreads from one group of commodities and services to other groups until all prices and wage rates have risen. The rise in prices is thus not synchronous for the various commodities and services.

When eventually, in the further course of the increase in the quantity of

money, all prices have risen, the rise does not affect the various commodities and services to the same extent. For the process has affected the material position of various individuals to different degrees. While the process is under way, some people enjoy the benefit of higher prices for the goods or services they sell, while the prices of the things they buy have not yet risen or have not risen to the same extent. On the other hand, there are people who are in the unhappy situation of selling commodities and services whose prices have not yet risen or not in the same degree as the prices of the goods they must buy for their daily consumption. For the former the progressive rise in prices is a boon, for the latter a calamity. Besides, the debtors are favored at the expense of the creditors. When the process once comes to an end, the wealth of various individuals has been affected in different ways and to different degrees. Some are enriched, some impoverished. Conditions are no longer what they were before. The new order of things results in changes in the intensity of demand for various goods. The mutual ratio of the money prices of the vendible goods and services is no longer the same as before. The price structure has changed apart from the fact that all prices in terms of money have risen. The final prices to the establishment of which the market tends after the effects of the increase in the quantity of money have been fully consummated are not equal to the previous final prices multiplied by the same multiplier.

The main fault of the old quantity theory as well as the mathematical economists' equation of exchange is that they have ignored this fundamental issue. Changes in the supply of money must bring about changes in other data too. The market system before and after the inflow or outflow of a quantity of money is not merely changed in that the cash holdings of the individuals and prices have increased or decreased. There have been effected also changes in the reciprocal exchange ratios between the various commodities and services which, if one wants to resort to metaphors, are more adequately described by the image of price revolution than by the misleading figure of an elevation or a sinking of the "price level."

We may at this point disregard the effects brought about by the influence on the content of all deferred payments as stipulated by contracts. We will deal later with them and with the operation of monetary events on consumption and production, investment in capital goods, and accumulation and consumption of capital. But even in setting aside all these things, we must never forget that changes in the quantity of money affect prices in an uneven way. It depends on the data of each particular case at what moment and to

what extent the prices of the various commodities and services are affected. In the course of a monetary expansion (inflation) the first reaction is not only that the prices of some of them rise more quickly and more steeply than others. It may also occur that some fall at first as they are for the most part demanded by those groups whose interests are hurt.

Changes in the money relation are not only caused by governments issuing additional paper money. An increase in the production of the precious metals employed as money has the same effects although, of course, other classes of the population may be favored or hurt by it. Prices also rise in the same way if, without a corresponding reduction in the quantity of money available, the demand for money falls because of a general tendency toward a diminution of cash holdings. The money expended additionally by such a "dishoarding" brings about a tendency toward higher prices in the same way as that flowing from the gold mines or from the printing press. Conversely, prices drop when the supply of money falls (e.g., through a withdrawal of paper money) or the demand for money increases (e.g., through a tendency toward "hoarding," the keeping of greater cash balances). The process is always uneven and by steps, disproportionate and asymmetrical.

It could be and has been objected that the normal production of the gold mines brought to the market may well entail an increase in the quantity of money, but does not increase the income, still less the wealth, of the owners of the mines. These people earn only their "normal" income and thus their spending of it cannot disarrange market conditions and the prevailing tendencies toward the establishment of final prices and the equilibrium of the evenly rotating economy. For them, the annual output of the mines does not mean an increase in riches and does not impel them to offer higher prices. They will continue to live at the standard at which they used to live before. Their spending within these limits will not revolutionize the market. Thus the normal amount of gold production, although certainly increasing the quantity of money available, cannot put into motion the process of depreciation. It is neutral with regard to prices.

As against this reasoning one must first of all observe that within a progressing economy in which population figures are increasing and the division of labor and its corollary, industrial specialization, are perfected, there prevails a tendency toward an increase in the demand for money. Additional people appear on the scene and want to establish cash holdings. The extent of economic self-sufficiency, i.e., of production for the household's own needs, shrinks and people become more dependent upon the market; this will, by and large, impel

them to increase their holding of cash. Thus the price-raising tendency emanating from what is called the "normal" gold production encounters a price-cutting tendency emanating from the increased demand for cash holding. However, these two opposite tendencies do not neutralize each other. Both processes take their own course, both result in a disarrangement of existing social conditions, making some people richer, some people poorer. Both affect the prices of various goods at different dates and to a different degree. It is true that the rise in the prices of some commodities caused by one of these processes can finally be compensated by the fall caused by the other process. It may happen that at the end some or many prices come back to their previous height. But this final result is not the outcome of an absence of movements provoked by changes in the money relation. It is rather the outcome of the joint effect of the coincidence of two processes independent of each other, each of which brings about alterations in the market data as well as in the material conditions of various individuals and groups of individuals. The new structure of prices may not differ very much from the previous one. But it is the resultant of two series of changes which have accomplished all inherent social transformations.

The fact that the owners of gold mines rely upon steady yearly proceeds from their gold production does not cancel the newly mined gold's impression upon prices. The owners of the mines take from the market, in exchange for the gold produced, the goods and services required for their mining and the goods needed for their consumption and their investments in other lines of production. If they had not produced this amount of gold, prices would not have been affected by it. It is beside the point that they have anticipated the future yield of the mines and capitalized it and that they have adjusted their standard of living to the expectation of steady proceeds from the mining operations. The effects which the newly mined gold exercises on their expenditure and on that of those people whose cash holdings it enters later step by step begin only at the instant this gold is available in the hands of the mine owners. If, in the expectation of future yields, they had expended money at an earlier date and the expected yield failed to appear, conditions would not differ from other cases in which consumption was financed by credit based on expectations not realized by later events.

Changes in the extent of the desired cash holding of various people neutralize one another only to the extent that they are regularly recurring and mutually connected by a causal reciprocity. Salaried people and wage earners are not paid daily, but at certain pay days for a period of one or

several weeks. They do not plan to keep their cash holding within the period between pay days at the same level; the amount of cash in their pockets declines with the approach of the next pay day. On the other hand, the merchants who supply them with the necessities of life increase their cash holdings concomitantly. The two movements condition each other; there is a causal interdependence between them which harmonizes them both with regard to time and to quantitative amount. Neither the dealer nor his customer lets himself be influenced by these recurrent fluctuations. Their plans concerning cash holding as well as their business operations and their spending for consumption respectively have the whole period in view and take it into account as a whole.

It was this phenomenon that led economists to the image of a regular circulation of money and to the neglect of the changes in the individuals' cash holdings. However, we are faced with a concatenation which is limited to a narrow, neatly circumscribed field. Only as far as the increase in the cash holding of one group of people is temporally and quantitatively related to the decrease in the cash holding of another group and as far as these changes are self-liquidating within the course of a period which the members of both groups consider as a whole in planning their cash holding, can the neutralization take place. Beyond this field there is no question of such a neutralization.

5. The Problem of Hume and Mill and the Driving Force of Money

Is it possible to think of a state of affairs in which changes in the purchasing power of money occur at the same time and to the same extent with regard to all commodities and services and in proportion to the change affected in either the demand for or the supply of money? In other words, is it possible to think of neutral money within the frame of an economic system which does not correspond to the imaginary construction of an evenly rotating economy? We may call this pertinent question the problem of Hume and Mill.

It is uncontested that neither Hume nor Mill succeeded in finding a positive answer to this question.[9] Is it possible to answer it categorically in the negative?

We imagine two systems of an evenly rotating economy *A* and *B*. The two systems are independent and in no way connected with one another. The two systems differ from one another only in the fact that to each amount of

9. Cf. Mises, *Theory of Money and Credit*, pp. 140-142.

money *m* in *A* there corresponds an amount *n m* in *B*, *n* being greater or smaller than 1; we assume that there are no deferred payments and that the money used in both systems serves only monetary purposes and does not allow of any nonmonetary use. Consequently the prices in the two systems are in the ratio 1 : *n*. Is it thinkable that conditions in *A* can be altered at one stroke in such a way as to make them entirely equivalent to conditions in *B*?

The answer to this question must obviously be in the negative. He who wants to answer it in the positive must assume that a *deus ex machina* approaches every individual at the same instant, increases or decreases his cash holding by multiplying it by *n*, and tells him that henceforth he must multiply by *n* all price data which he employs in his appraisements and calculations. This cannot happen without a miracle.

It has been pointed out already that in the imaginary construction of an evenly rotating economy the very notion of money vanishes into an unsubstantial calculation process, self-contradictory and devoid of any meaning.[10] It is impossible to assign any function to indirect exchange, media of exchange, and money within an imaginary construction the characteristic mark of which is unchangeability and rigidity of conditions.

Where there is no uncertainty concerning the future, there is no need for any cash holding. As money must necessarily be kept by people in their cash holdings, there cannot be any money. The use of media of exchange and the keeping of cash holdings are conditioned by the changeability of economic data. Money in itself is an element of change; its existence is incompatible with the idea of a regular flow of events in an evenly rotating economy.

Every change in the money relation alters—apart from its effects upon deferred payments—the conditions of the individual members of society. Some become richer, some poorer. It may happen that the effects of a change in the demand for and supply of money encounter the effects of opposite changes occurring by and large at the same time and to the same extent; it may happen that the resultant of the two opposite movements is such that no conspicuous changes in the price structure emerge. But even then the effects on the conditions of the various individuals are not absent. Each change in the money relation takes its own course and produces its own particular effects. If an inflationary movement and a deflationary one occur at the same time or if an inflation is temporally followed by a deflation in

10.Cf. above, p. 249.

such a way that prices finally are not very much changed, the social consequences of each of the two movements do not cancel each other. To the social consequences of an inflation those of a deflation are added. There is no reason to assume that all or even most of those favored by one movement will be hurt by the second one, or vice versa.

Money is neither an abstract *numeraire* nor a standard of value or prices. It is necessarily an economic good and as such it is valued and appraised on its own merits, i.e., the services which a man expects from holding cash. On the market there is always change and movement. Only because there are fluctuations is there money. Money is an element of change not because it "circulates," but because it is kept in cash holdings. Only because people expect changes about the kind and extent of which they have no certain knowledge whatsoever, do they deep money.

While money can be thought of only in a changing economy, it is in itself an element of further changes. Every change in the economic data sets it in motion and makes it the driving force of new changes. Every shift in the mutual relation of the exchange ratios between the various nonmonetary goods not only brings about changes in production and in what is popularly called distribution, but also provokes changes in the money relation and thus further changes. Nothing can happen in the orbit of vendible goods without affecting the orbit of money, and all that happens in the orbit of money affects the orbit of commodities.

The notion of a neutral money is no less contradictory than that of a money of stable purchasing power. Money without a driving force of its own would not, as people assume, be a perfect money; it would not be money at all.

It is a popular fallacy to believe that perfect money should be neutral and endowed with unchanging purchasing power, and that the goal of monetary policy should be to realize this perfect money. It is easy to understand this idea as a reaction against the still more popular postulates of the inflationists. But it is an excessive reaction, it is in itself confused and contradictory, and it has worked havoc because it was strengthened by an inveterate error inherent in the thought of many philosophers and economists.

These thinkers are misled by the widespread belief that a state of rest is more perfect than one of movement. Their idea of perfection implies that no more perfect state can be thought of and consequently that every change would impair it. The best that can be said of a motion is that it is directed toward the attainment of a state of perfection in which there is rest because every further movement would lead into a less perfect state. Motion is seen

as the absence of equilibrium and full satisfaction, as a manifestation of trouble and want. As far as such thoughts merely establish the fact that action aims at the removal of uneasiness and ultimately at the attainment of full satisfaction, they are well founded. But one must not forget that rest and equilibrium are not only present in a state in which perfect contentment has made people perfectly happy, but no less in a state in which, although wanting in many regards, they do not see any means of improving their condition. The absence of action is not only the result of full satisfaction; it can no less be the corollary of the inability to render things more satisfactory. It can mean hopelessness as well as contentment.

With the real universe of action and unceasing change, with the economic system which cannot be rigid, neither neutrality of money nor stability of its purchasing power are compatible. A world of the kind which the necessary requirements of neutral and stable money presuppose would be a world without action.

It is therefore neither strange nor vicious that in the frame of such a changing world money is neither neutral nor stable in purchasing power. All plans to render money neutral and stable are contradictory. Money is an element of action and consequently of change. Changes in the money relation, i.e., in the relation of the demand for and the supply of money, effect the exchange ratio between money on the one hand and the vendible commodities on the other hand. These changes do not affect at the same time and to the same extent the prices of the various commodities and services. They consequently affect the wealth of the various members of society in a different way.

6. Cash-Induced and Goods-Induced Changes in Purchasing Power

Changes in the purchasing power of money, i.e., in the exchange ratio between money and the vendible goods and commodities, can originate either from the side of money or from the side of the vendible goods and commodities. The change in the data which provokes them can either occur in the demand for and supply of money or in the demand for and supply of the other goods and services. We may accordingly distinguish between cash-induced and goods-induced changes in purchasing power.

Goods-induced changes in purchasing power can be brought about by changes in the supply of commodities and services or in the demand for

individual commodities and services. A general rise or fall in the demand for all goods and services or the greater part of them can be effected only from the side of money.

Let us now scrutinize the social and economic consequences of changes in the purchasing power of money under the following three assumptions: first, that the money in question can only be used as money—i.e., as a medium of exchange—and can serve no other purpose; second, that there is only exchange of present goods against future goods; third, that we disregard the effects of changes in purchasing power on monetary calculation.

Under these assumptions all that cash-induced changes in purchasing power bring about are shifts in the disposition of wealth among different individuals. Some get richer, others poorer; some are better supplied, others less; what some people gain is paid for by the loss of others. It would, however, be impermissible to interpret this fact by saying that total satisfaction remained unchanged or that, while no changes have occurred in total supply, the state of total satisfaction or of the sum of happiness has been increased or decreased by changes in the distribution of wealth. The notions of total satisfaction or total happiness are empty. It is impossible to discover a standard for comparing the different degrees of satisfaction or happiness attained by various individuals.

Cash-induced changes in purchasing power indirectly generate further changes by favoring either the accumulation of additional capital or the consumption of capital available. Whether and in what direction such secondary effects are brought about depends on the specific data of each case. We shall deal with these important problems at a later point.[11]

Goods-induced changes in purchasing power are sometimes nothing else but consequences of a shift of demand from some goods to others. If they are brought about by an increase or a decrease in the supply of goods they are not merely transfers from some people to other people. They do not mean that Peter gains what Paul has lost. Some people may become richer although nobody is impoverished, and vice versa.

We may describe this fact in the following way: Let *A* and *B* be two independent systems which are in no way connected with each other. In both systems the same kind of money is used, a money which cannot be used for any nonmonetary purpose. Now we assume, as case 1, that *A* and *B* differ from each other only in so far as in *B* the total supply of money is *n m*, *m*

11.Cf. below, Chapter XX.

being the total supply of money in *A*, and that to every cash holding of *c* and to every claim in terms of money *d* in *A* there corresponds a cash holding of *n c* and a claim of *n d* in *B*. In every other respect *A* equals *B*. Then we assume, as case 2, that *A* and *B* differ from each other only in so far as in *B* the total supply of a certain commodity *r* is *n p*, *p* being the total supply of this commodity in *A*, and that to every stock *v* of this commodity *r* in *A* there corresponds a stock of *n v* in *B*. In both cases *n* is greater than 1. If we ask every individual of *A* whether he is ready to make the slightest sacrifice in order to exchange his position for the corresponding place in *B*, the answer will be unanimously in the negative in case 1. But in case 2 all owners of *r* and all those who do not own any *r*, but are eager to acquire a quantity of it—i.e., at least one individual—will answer in the affirmative.

The services money renders are conditioned by the height of its purchasing power. Nobody wants to have in his cash holding a definite number of pieces of money or a definite weight of money; he wants to keep a cash holding of a definite amount of purchasing power. As the operation of the market tends to determine the final state of money's purchasing power at a height at which the supply of and the demand for money coincide, there can never be an excess or a deficiency of money. Each individual and all individuals together always enjoy fully the advantages which they can derive from indirect exchange and the use of money, no matter whether the total quantity of money is great or small. changes in money's purchasing power generate changes in the disposition of wealth among the various members of society. From the point of view of people eager to be enriched by such changes, the supply of money may be called insufficient or excessive, and the appetite for such gains may result in policies designed to bring about cash-induced alterations in purchasing power. However, the services which money renders can be neither improved nor repaired by changing the supply of money. There may appear an excess or a deficiency of money in an individual's cash holding. But such a condition can be remedied by increasing or decreasing consumption or investment. (Of course, one must not fall prey to the popular confusion between the demand for money for cash holding and the appetite for more wealth.) The quantity of money available in the whole economy is always sufficient to secure for everybody all that money does and can do.

From the point of view of this insight one may call wasteful all expenditures incurred for increasing the quantity of money. The fact that things which could render some other useful services are employed as money and

thus withheld from these other employments appears as a superfluous curtailment of limited opportunities for want-satisfaction. It was this idea that led Adam Smith and Ricardo to the opinion that it was very beneficial to reduce the cost of producing money by resorting to the use of paper printed currency. However, things appear in a different light to the students of monetary history. If one looks at the catastrophic consequences of the great paper money inflations, one must admit that the expensiveness of gold production is the minor evil. It would be futile to retort that these catastrophes were brought about by the improper use which the governments made of the powers that credit money and fiat money placed in their hands and that wiser governments would have adopted sounder policies. As money can never be neutral and stable in purchasing power, a government's plans concerning the determination of the quantity of money can never be impartial and fair to all members of society. Whatever a government does in the pursuit of aims to influence the height of purchasing power depends necessarily upon the rulers' personal value judgments. It always furthers the interests of some groups of people at the expense of other groups. It never serves what is called the commonweal or the public welfare. In the field of monetary policies too there is no such thing as a scientific ought.

The choice of the good to be employed as a medium of exchange and as money is never indifferent. It determines the course of the cash-induced changes in purchasing power. The question is only who should make the choice: the people buying and selling on the market, or the government? It was the market which in a selective process, going on for ages, finally assigned to the precious metals gold and silver the character of money. For two hundred years the governments have interfered with the market's choice of the money medium. Even the most bigoted etatists do not venture to assert that this interference has proved beneficial.

Inflation and Deflation; Inflationism and Deflationism

The notions of inflation and deflation are not praxeological concepts. They were not created by economists, but by the mundane speech of the public and of politicians. They implied the popular fallacy that there is such a thing as neutral money or money of stable purchasing power and that sound money should be neutral and stable in purchasing power. From this point of view the term inflation was applied to signify cash-induced changes resulting in a drop in purchasing power, and the term deflation to signify cash-induced changes resulting in a rise in purchasing power.

However, those applying these terms are not aware of the fact that purchasing power never remains unchanged and that consequently there is always either inflation or deflation. They ignore these necessarily perpetual fluctuations as far as they are only small and inconspicuous, and reserve the use of the terms to big changes in purchasing power. Since the question at what point a change in purchasing power begins to deserve being called big depends on personal relevance judgments, it becomes manifest that inflation and deflation are terms lacking the categorial precision required for praxeological, economic, and catallactic concepts. Their application is appropriate for history and politics. Catallactics is free to resort to them only when applying its theorems to the interpretation of events of economic history and of political programs. Moreover, it is very expedient even in rigid catallactic disquisitions to make use of these two terms whenever no misinterpretation can possibly result and pedantic heaviness of expression can be avoided. But it is necessary never to forget that all that catallactics says with regard to inflation and deflation—i.e., *big* cash-induced changes in purchasing power—is valid also with regard to small changes, although, of course, the consequences of smaller changes are less conspicuous than those of big changes.

The terms inflationism and deflationism, inflationist and deflationist, signify the political programs aiming at inflation and deflation in the sense of big cash-induced changes in purchasing power.

The semantic revolution which is one of the characteristic features of our day has also changed the traditional connotation of the terms inflation and deflation. What many people today call inflation or deflation is no longer the great increase or decrease in the supply of money, but its inexorable consequences, the general tendency toward a rise or a fall in commodity prices and wage rates. This innovation is by no means harmless. It plays an important role in fomenting the popular tendencies toward inflationism.

First of all there is no longer any term available to signify what inflation used to signify. It is impossible to fight a policy which you cannot name. Statesmen and writers no longer have the opportunity of resorting to a terminology accepted and understood by the public when they want to question the expediency of issuing huge amounts of additional money. They must enter into a detailed analysis and description of this policy with full particulars and minute accounts whenever they want to refer to it, and they must repeat this bothersome procedure in every sentence in which they deal with the subject. As this policy has no name, it becomes self-understood and a matter of fact. It goes on luxuriantly.

The second mischief is that those engaged in futile and hopeless attempts to fight the inevitable consequences of inflation—the rise in prices—are disguising their endeavors as a fight against inflation. While merely fighting

symptoms, they pretend to fight the root causes of the evil. Because they do not comprehend the causal relation between the increase in the quantity of money on the one hand and the rise in prices on the other, they practically make things worse. The best example was provided by the subsidies granted in the Second World War on the part of the governments of the United States, Canada, and Great Britain to farmers. Price ceilings reduce the supply of the commodities concerned because production involves a loss for the marginal producers. To prevent this outcome the governments granted subsidies to the farmers producing at the highest costs. These subsidies were financed out of additional increases in the quantity of money. If the consumers had had to pay higher prices for the products concerned, no further inflationary effects would have emerged. The consumers would have had to use for such surplus expenditure only money which had already been issued previously. Thus the confusion of inflation and its consequences in fact can directly bring about more inflation.

It is obvious that this new-fangled connotation of the terms inflation and deflation is utterly confusing and misleading and must be unconditionally rejected.

7. Monetary Calculation and Changes in Purchasing Power

Monetary calculation reckons with the prices of commodities and services as they were determined or would have been determined or presumably will be determined on the market. It is eager to detect price discrepancies and to draw conclusions from such a detection.

Cash-induced changes in purchasing power cannot be taken into account in such calculations. It is possible to put in the place of calculation based on a definite kind of money *a* mode of calculation based on another kind of money *b*. Then the result of the calculation is made safe against adulteration on the part of changes effected in the purchasing power of *a*; but it can still be adulterated by changes effected in the purchasing power of *b*. There is no means of freeing any mode of economic calculation from the influence of changes in the purchasing power of the definite kind of money on which it is based.

All results of economic calculation and all conclusions derived from them are conditioned by the vicissitudes of cash-induced changed in purchasing power. In accordance with the rise of fall in purchasing power there emerge between items reflecting earlier prices and those reflecting later prices specific differences; the calculation shows profits or losses which are merely produced by cash-induced changes effected in the purchasing power of money. If we compare such profits or losses with the result of a calculation

accomplished on the basis of a kind of money whose purchasing power had been subject to less vehement changes, we can call them imaginary or apparent only. But one must not forget that such statements are only possible as a result of the comparison of calculations carried out in different kinds of money. As there is no such thing as a money with stable purchasing power, such apparent profits and losses are present with every mode of economic calculation, no matter on what kind of money it may be based. It is impossible to distinguish precisely between genuine profits and losses and merely apparent profits and losses.

It is therefore possible to maintain that economic calculation is not perfect. However, nobody can suggest a method which could free economic calculation from these defects or design a monetary system which could remove this source of error entirely.

It is an undeniable fact that the free market has succeeded in developing a currency system which will served all the requirements both of indirect exchange and of economic calculation. The aims of monetary calculation are such that they cannot be frustrated by the inaccuracies which stem from slow and comparatively slight movements in purchasing power. Cash-induced changes in purchasing power of the extent to which they occurred in the last two centuries with metallic money, especially with gold money, cannot influence the result of the businessmen's economic calculations so considerably as to render such calculations useless. Historical experience shows that one could, for all practical purposes of the conduct of business, manage very well with these methods of calculation. Theoretical consideration shows that it is impossible to design, still less to realize, a better method. In view of these facts it is vain to call monetary calculation imperfect. Man has not the power to change the categories of human action. He must adjust his conduct to them.

Businessmen never deemed it necessary to free economic calculation in terms of gold from its dependence on the fluctuations in purchasing power. The proposals to improve the currency system by adopting a tabular standard based on index numbers or by adopting various methods of commodity standards were not advanced with regard to business transactions and to monetary calculation. Their aim was to provide a less fluctuating standard for long-run loan contracts. Businessmen did not even consider it expedient to modify their accounting methods in those regards in which it would have been easy to narrow down certain errors induced by fluctuations in purchasing power. It would, for instance, have been possible to discard the practice of writing off durable

equipment by means of yearly depreciation quotas, invariably fixed as a percentage of the cost of its acquisition. In its place one could resort to the device of laying aside in renewal funds as much as seems necessary to provide the full costs of the replacement at the time when it is required. But business was not eager to adopt such a procedure.

All this is valid only with regard to money which is not subject to rapid, big cash-induced changes in purchasing power. But money with which such rapid and big changes occur loses its suitability to serve as a medium of exchange altogether.

8. The Anticipation of Expected Changes in Purchasing Power

The deliberations of the individuals which determine their conduct with regard to money are based on their knowledge concerning the prices of the immediate past. If they lacked this knowledge, they would not be in a position to decide what the appropriate height of their cash holdings should be and how much they should spend for the acquisition of various goods. a medium of exchange without a past is unthinkable. Nothing can enter into the function of a medium of exchange which was not already previously an economic good and to which people assigned exchange value already before it was demanded as such a medium.

But the purchasing power handed down from the immediate past is modified by today's demand for and supply of money. Human action is always providing for the future, be it sometimes only the future of the impending hour. He who buys, buys for future consumption and production. As far as he believes that the future will differ from the present and the past, he modifies his valuation and appraisement. This is no less true with regard to money than it is with regard to all vendible goods. In this sense we may say that today's exchange value of money is an anticipation of tomorrow's exchange value. The basis of all judgments concerning money is its purchasing power as it was in the immediate past. But as far as cash-induced changes in purchasing power are expected, a second factor enters the scene, the anticipation of these changes.

He who believes that the prices of the goods in which he takes an interest will rise, buys more of them than he would have bought in the absence of this belief: accordingly he restricts his cash holding. He who believes that prices will drop, restricts his purchases and thus enlarges his cash holding. As long as such speculative anticipations are limited to some commodities, they do not bring about a general tendency toward changes in cash holding.

But it is different if people believe that they are on the eve of big cash-induced changes in purchasing power. When they expect that the money prices of all goods will rise or fall, they expand or restrict their purchases. These attitudes strengthen and accelerate the expected tendencies considerably. This goes on until the point is reached beyond which no further changes in the purchasing power of money are expected. Only then does this inclination to buy or to sell stop and do people begin again to increase or to decrease their cash holdings.

But if once public opinion is convinced that the increase in the quantity of money will continue and never come to an end, and that consequently the prices of all commodities and services will not cease to rise, everybody becomes eager to buy as much as possible and to restrict his cash holding to a minimum size. For under these circumstances the regular costs incurred by holding cash are increased by the losses caused by the progressive fall in purchasing power. The advantages of holding cash must be paid for by sacrifices which are deemed unreasonably burdensome. This phenomenon was, in the great European inflations of the 'twenties, called *flight into real goods (Flucht in die Sachwerte)* or *crack-up boom (Katastrophenhausse).* The mathematical economists are at a loss to comprehend the causal relation between the increase in the quantity of money and what they call "velocity of circulation."

The characteristic mark of this phenomenon is that the increase in the quantity of money causes a fall in the demand for money. The tendency toward a fall in purchasing power as generated by the increased supply of money is intensified by the general propensity to restrict cash holdings which it brings about. Eventually a point is reached where the prices at which people would be prepared to part with "real" goods discount to such an extent the expected progress in the fall of purchasing power that nobody has a sufficient amount of cash at hand to pay them. The monetary system breaks down; all transactions in the money concerned cease; a panic makes its purchasing power vanish altogether. People return either to barter or to the use of another kind of money.

The course of a progressing inflation is this: At the beginning the inflow of additional money makes the prices of some commodities and services rise; other prices rise later. The price rise affects the various commodities and services, as has been shown, at different dates and to a different extent.

This first stage of the inflationary process may last for many years. While it lasts, the prices of many goods and services are not yet adjusted to the altered money relation. There are still people in the country who have not

yet become aware of the fact that they are confronted with a price revolution which will finally result in a considerable rise of all prices, although the extent of this rise will not be the same in the various commodities and services. These people still believe that prices one day will drop. Waiting for this day, they restrict their purchases and concomitantly increase their cash holdings. As long as such ideas are still held by public opinion, it is not yet too late for the government to abandon its inflationary policy.

But then finally the masses wake up. They become suddenly aware of the fact that inflation is a deliberate policy and will go on endlessly. A breakdown occurs. The crack-up boom appears. Everybody is anxious to swap his money against "real" goods, no matter whether he needs them or not, no matter how much money he has to pay for them. Within a very short time, within a few weeks or even days, the things which were used as money are no longer used as media of exchange. They become scrap pater. Nobody wants to give away anything against them.

It was this that happened with the *Continental currency* in America in 1781, with the French *mandats territoriaux* in 1796, and with the German *Mark* in 1923. It will happen again whenever the same conditions appear. If a thing has to be used as a medium of exchange, public opinion must not believe that the quantity of this thing will increase beyond all bounds. Inflation is a policy that cannot last.

9. The Specific Value of Money

As far as a good used as money is valued and appraised on account of the services it renders for nonmonetary purposes, no problems are raised which would require special treatment. The task of the theory of money consists merely in dealing with that component in the valuation of money which is conditioned by its function as a medium of exchange.

In the course of history various commodities have been employed as media of exchange. A long evolution eliminated the greater part of these commodities from the monetary function. Only two, the precious metals gold and silver, remained. In the second part of the nineteenth century more and more governments deliberately turned toward the demonetization of silver.

In all these cases what is employed as money is a commodity which is used also for nonmonetary purposes. Under the gold standard gold is money and money is gold. It is immaterial whether or not the laws assign legal tender quality only to gold coins minted by the government. What counts is that these coins really contain a fixed weight of gold and that every quantity

of bullion can be transformed into coins. Under the gold standard the dollar and the pound sterling were merely names for a definite weight of gold, within very narrow margins precisely determined by the laws. We may call such a sort of money *commodity money*.

A second sort of money is *credit money*. Credit money evolved out of the use of money-substitutes. It was customary to use claims, payable on demand and absolutely secure, as substitutes for the sum of money to which they gave a claim. (We shall deal with the features and problems of money-substitutes in the next sections.) The market did not stop using such claims when one day their prompt redemption was suspended and thereby doubts about their safety and the solvency of the obligee were raised. As long as these claims had been daily maturing claims against a debtor of undisputed solvency and could be collected without notice and free of expense, their exchange value was equal to their face value; it was this perfect equivalence which assigned to them the character of money-substitutes. Now, as redemption was suspended, the maturity date postponed to an undetermined day, and consequently doubts about the solvency of the debtor or at least about his willingness to pay emerged, they lost a part of the value previously ascribed to them. They were now merely claims, which did not bear interest, against a questionable debtor and falling due on an undefined day. But as they were used as media of exchange, their exchange value did not drop to the level to which it would have dropped if they were merely claims.

One can fairly assume that such credit money could remain in use as a medium of exchange even if it were to lose its character as a claim against a band or a treasury, and thus would become *fiat money.* Fiat money is a money consisting of mere tokens which can neither be employed for any industrial purposes nor convey a claim against anybody.

It is not a task of catallactics but of economic history to investigate whether there appeared in the past specimens of fiat money or whether all the sorts of money which were not commodity money were credit money. The only thing that catallactics has to establish is that the possibility of the existence of fiat money must be admitted.

The important thing to be remembered is that with every sort of money, demonetization—i.e., the abandonment of its use as a medium of exchange—must result in a serious fall of its exchange value. What this practically means has become manifest when in the last ninety years the use of silver as commodity money has been progressively restricted.

There are specimens of credit money and fiat money which are embodied in metallic coins. Such money is printed, as it were, on silver, nickel, or copper. If such a piece of fiat money is demonetized, it still retains exchange value as a piece of metal. But this is only a very small indemnification of the owner. It has no practical importance.

The keeping of cash holding requires sacrifices. To the extent that a man keeps money in his pockets or in his balance with a bank, he forsakes the instantaneous acquisition of goods he could consume or employ for production. In the market economy these sacrifices can be precisely determined by calculation. They are equal to the amount of originary interest he would have earned by investing the sum. The fact that a man takes this falling off into account is proof that he prefers the advantages of cash holding to the loss in interest yield.

It is possible to specify the advantages which people expect from keeping a definite amount of cash. But it is a delusion to assume that an analysis of these motives could provide us with a theory of the determination of purchasing power which could do without the notions of cash holding and demand for and supply of money.[12] The advantages and disadvantages derived from cash holding are not objective factors which could directly influence the size of cash holdings. They are put on the scales by each individual and weighed against one another. The result is a subjective judgment of value, colored by the individual's personality. Different people and the same people at different times value the same objective facts in a different way. Just as knowledge of a man's wealth and his physical condition does not tell us how much he would be prepared to spend for food of a certain nutritive power, so knowledge about data concerning a man's material situation does not enable us to make definite assertions with regard to the size of his cash holding.

10. The Import of the Money Relation

The money relation, i.e., the relation between demand for and supply of money, uniquely determines the price structure as far as the reciprocal exchange ratio between money and the vendible commodities and services is involved.

If the money relation remains unchanged, neither an inflationary (expansionist) nor a deflationary (contractionist) pressure on trade, business, production, consumption, and employment can emerge. The assertions to the contrary reflect the grievances of people reluctant to adjust their activities

12.Such an attempt was made by Greidanus, *The Value of Money* (London, 1932), pp. 197 ff.

to the demands of their fellow men as manifested on the market. However, it is not an account of an alleged scarcity of money that prices of agricultural products are too low to secure to the submarginal farmers proceeds of the amount they would like to earn. The cause of these farmers' distress is that other farmers are producing at lower costs.

An increase in the quantity of goods produced, other things being unchanged, must bring about an improvement in people's conditions. Its consequence is a fall in the money prices of the goods the production of which has been increased. But such a fall in money prices does not in the least impair the benefits derived from the additional wealth produced. One may consider as unfair the increase in the share of the additional wealth which goes to the creditors, although such criticisms are questionable as far as the rise in purchasing power has been correctly anticipated and adequately taken into account by a negative price premium.[13] But one must not say that a fall in prices caused by an increase in the production of the goods concerned is the proof of some disequilibrium which cannot be eliminated otherwise than by increasing the quantity of money. Of course, as a rule every increase in production of some or of all commodities requires a new allocation of factors of production to the various branches of business. If the quantity of money remains unchanged, the necessity of such a reallocation becomes visible in the price structure. Some lines of production become more profitable, while in others profits drop or losses appear. Thus the operation of the market tends to eliminate these much discussed disequilibria. It is possible by means of an increase in the quantity of money to delay or to interrupt this process of adjustment. It is impossible either to make it superfluous or less painful for those concerned.

If the government-made cash-induced changes in the purchasing power of money resulted only in shifts of wealth from some people to other people, it would not be permissible to condemn them from the point of view of catallactics' scientific neutrality. It is obviously fraudulent to justify them under the pretext of the commonweal or public welfare. But one could still consider them as political measures suitable to promote the interests of some groups of people at the expense of others without further detriment. However, there are still other things involved.

It is not necessary to point out the consequences to which a continued deflationary policy must lead. Nobody advocates such a policy. The favor

13.About the relations of the market rate of interest and changes in purchasing power, cf. below, Chapter XX.

of the masses and of the writers and politicians eager for applause goes to inflation. With regard to these endeavors we must emphasize three points. First: Inflationary or expansionist policy must result in overconsumption on the one hand and in mal-investment on the other. It thus squanders capital and impairs the future state of want-satisfaction.[14] Second: The inflationary process does not remove the necessity of adjusting production and reallocating resources. It merely postpones it and thereby makes it more troublesome. Third: Inflation cannot be employed as a permanent policy because it must, when continued, finally result in a breakdown of the monetary system.

A retailer or innkeeper can easily fall prey to the illusion that all that is needed to make him and his colleagues more prosperous is more spending on the part of the public. In his eyes the main thing is to impel people to spend more. But it is amazing that this belief could be presented to the world as a new social philosophy. Lord Keynes and his disciples make the lack of the propensity to consume responsible for what they deem unsatisfactory in economic conditions. What is needed, in their eyes, to make men more prosperous is not an increase in production, but an increase in spending. In order to make it possible for people to spend more, an "expansionist" policy is recommended.

This doctrine is as old as it is bad. Its analysis and refutation will be undertaken in the chapter dealing with the trade cycle.[15]

11. The Money-Substitutes

Claims to a definite amount of money, payable and redeemable on demand, against a debtor about whose solvency and willingness to pay there does not prevail the slightest doubt, render to the individual all the services money can render, provided that all parties with whom he could possibly transact business are perfectly familiar with these essential qualities of the claims concerned: daily maturity as well as undoubted solvency and willingness to pay on the part of the debtor. We may call such claims *money-substitutes*, as they can fully replace money in an individual's or a firm's cash holding. The technical and legal features of the money-substitutes do not concern catallactics. A money-substitute can be embodied either in a banknote or in a demand deposit with a bank subject to check ("checkbook money" or deposit currency), provided the bank is prepared to exchange the

14.Cf. below, pp. 564-565.
15.Cf. below, pp. 548-565.

note or the deposit daily free of charge against money proper. Token coins are also money-substitutes, provided the owner is in a position to exchange them at need, free of expense and without delay, against money. To achieve this it is not required that the government be bound by law to redeem them. What counts is the fact that these tokens can be really converted free of expense and without delay. If the total amount of token coins issued is kept within reasonable limits, no special provisions on the part of the government are necessary to keep their exchange value at par with their face value. The demand of the public for small change gives everybody the opportunity to exchange them easily against pieces of money. The main thing is that every owner of a money-substitute is perfectly certain that it can, at every instant and free of expense, be exchanged against money.

If the debtor—the government or a bank—keeps against the whole amount of money-substitutes a 100% reserve of money proper, we call the money-substitute a *money-certificate*. The individual money-certificate is—not necessarily in a legal sense, but always in the catallactic sense—a representative of a corresponding amount of money dept in the reserve. The issuing of money-certificates does not increase the quantity of things suitable to satisfy the demand for money for cash holding. Changes in the quantity of money-certificates therefore do not alter the supply of money and the money relation. They do not play any role in the determination of the purchasing power of money.

If the money reserve kept by the debtor against the money-substitutes issued is less than the total amount of such substitutes, we call that amount of substitutes which exceeds the reserve *fiduciary media*. As a rule it is not possible to ascertain whether a concrete specimen of money-substitutes is a money-certificate or a fiduciary medium. A part of the total amount of money-substitutes issued is usually covered by a money reserve held. Thus a part of the total amount of money-substitutes issued is money certificates, the rest fiduciary media. But this fact can only be recognized by those familiar with the bank's balance sheets. The individual banknote, deposit, or token coin does not indicate its catallactic character.

The issue of money-certificates does not increase the funds which the bank can employ in the conduct to its lending business. A bank which does not issue fiduciary media can only grant *commodity credit*, i.e., it can only lend its own funds and the amount of money which its customers have entrusted to it. The issue of fiduciary media enlarges the bank's funds available for lending beyond these limits. It can now not only grant com-

modity credit, but also *circulation credit*, i.e., credit granted out of the issue of fiduciary media.

While the quantity of money-certificates is indifferent, the quantity of fiduciary media is not. The fiduciary media affect the market phenomena in the same way as money does. Changes in their quantity influence the determination of money's purchasing power and of prices and—temporarily—also of the rate of interest.

Earlier economists applied a different terminology. Many were prepared to call the money-substitutes simply money, as they are fit to render the services money renders. However, this terminology is not expedient. The first purpose of a scientific terminology is to facilitate the analysis of the problems involved. The task of the catallactic theory of money—as differentiated from the legal theory and from the technical disciplines of bank management and accountancy—is the study of the problems of the determination of prices and interest rates. This task requires a sharp distinction between money-certificates and fiduciary media.

The term *credit expansion* has often been misinterpreted. It is important to realize that commodity credit cannot be expanded. The only vehicle of credit expansion is circulation credit. But the granting of circulation credit does not always mean credit expansion. If the amount of fiduciary media previously issued has consummated all its effects upon the market, if prices, wage rates, and interest rates have been adjusted to the total supply of money proper plus fiduciary media (supply of money in the broader sense), granting of circulation credit without a further increase in the quantity of fiduciary media is no longer credit expansion. Credit expansion is present only if credit is granted by the issue of an additional amount of fiduciary media, not if banks lend anew fiduciary media paid back to them by the old debtors.

12. The Limitation on the Issuance of Fiduciary Media

People deal with money-substitutes as if they were money because they are fully confident that it will be possible to exchange them at any time without delay and without cost against money. We may call those who share in this confidence and are therefore ready to deal with money-substitutes as if they were money, the *clients* of the issuing banker, bank, or authority. It does not matter whether or not this issuing establishment is operated according to the patterns of conduct customary in the banking business. Token coins issued by a country's treasury are money-substitutes too, although the treasury as a rule does not enter the amount issued into its

accounts as a liability and does not consider this amount a part of the national debt. It is no less immaterial whether or not the owner of a money-substitute has an actionable claim to redemption. What counts is whether the money-substitute can really be exchanged against money without delay and cost.[16]

Issuing money-certificates is an expensive venture. The banknotes must be printed, the coins minted; a complicated accounting system for the deposits must be organized; the reserves must be kept in safety; then there is the risk of being cheated by counterfeit banknotes and checks. against all these expenses stands only the slight chance that some of the banknotes issued may be destroyed and the still slighter chance that some depositors may forget their deposits. Issuing money-certificates is a ruinous business if not connected with issuing fiduciary media. In the early history of banking there were banks whose only operation consisted in issuing money-certificates. But these banks were indemnified by their clients for the costs incurred. at any rate, catallactics is not interested in the purely technical problems of banks not issuing fiduciary media. The only interest that catallactics takes in money-certificates is the connection between issuing them and the issuing of fiduciary media.

While the quantity of money-certificates is catallactically unimportant, an increase or decrease in the quantity of fiduciary media affects the determination of money's purchasing power in the same way as do changes in the quantity of money. Hence the question of whether there are or are not limits to the increase in the quantity of fiduciary media has fundamental importance.

If the clientele of the bank includes all members of the market economy, the limit to the issue of fiduciary media is the same as that drawn to the increase in the quantity of money. A bank which is, in an isolated country or in the whole world, the only institution issuing fiduciary media and the clientele of which comprises all individuals and firms, is bound to comply in its conduct of affairs with two rules:

16.It is furthermore immaterial whether or not the laws assign to the money-substitutes legal tender quality. If these things are really dealt with by people as money-substitutes and are therefore money-substitutes and equal in purchasing power to the respective amount of money, the only effect of the legal tender quality is to prevent malicious people from resorting to chicanery for the mere sake of annoying their fellow men. If, however, the things concerned are not money-substitutes and are traded at a discount below their face value, the assignment of legal tender quality is tantamount to an authoritarian price ceiling, the fixing of a maximum price for gold and foreign exchange and of a minimum price for the things which are no longer money-substitutes but either credit money or fiat money. Then the effects appear which Gresham's Law describes.

First: It must avoid any action which could make the clients—i.e., the public—suspicious. As soon as the clients begin to lose confidence, they will ask for the redemption of the banknotes and withdraw their deposits. How far the bank can go on increasing its issues of fiduciary media without arousing distrust, depends on psychological factors.

Second: It must not increase the amount of fiduciary media at such a rate and with such speed that the clients get the conviction that the rise in prices will continue endlessly at an accelerated pace. For if the public believes that this is the case, they will reduce their cash holdings, flee into "real" values, and bring about the crack-up boom. It is impossible to imagine the approach of this catastrophe without assuming that its first manifestation consists in the evanescence of confidence. The public will certainly prefer exchanging the fiduciary media against money to fleeing into real values, i.e. to the indiscriminate buying of various commodities. Then the bank must go bankrupt. If the government interferes by freeing the bank from the obligation of redeeming its banknotes and of paying back the deposits in compliance with the terms of the contract, the fiduciary media become either credit money or fiat money. The suspension of specie payments entirely changes the state of affairs. There is no longer any question of fiduciary media, of money-certificates, and of money-substitutes. The government enters the scene with its government-made legal tender laws. The bank loses its independent existence; it becomes a tool of government policies, a subordinate office of the treasury.

The catallactically most important problems of the issuance of fiduciary media on the part of a single bank, or of banks acting in concert, the clientele of which comprehends all individuals, are not those of the limitations drawn to the amount of their issuance. We will deal with them in Chapter XX, devoted to the relations between the quantity of money and the rate of interest.

At this point of our investigations we have to scrutinize the problem of the coexistence of a multiplicity of independent banks. Independence means that every bank in issuing fiduciary media follows its own course and does not act in concert with other banks. Co-existence means that every bank has a clientele which does not include all members of the market system. For the sake of simplicity we will assume that no individual or firm is a client of more than one bank. It would not affect the result of our demonstration if we were to assume that there are also people who are clients of more than one bank and people who are not clients of any bank.

The question to be raised is not whether or not there are limits to the

issuance of fiduciary media on the part of such independently coexisting banks. As there are even limits to the issuance of fiduciary media on the part of a unique bank the clientele of which comprises all people, it is obvious that there are such limits for a multiplicity of independently coexisting banks too. What we want to show is that for such a multiplicity of independently coexisting banks the limits are narrower than those drawn for a single bank with an unlimited clientele.

We assume that within a market system several independent banks have been established in the past. While previously only money was in use, these banks have introduced the use of money-substitutes a part of which are fiduciary media. Each bank has a clientele and has issued a certain quantity of fiduciary media which are dept as money-substitutes in the cash holdings of various clients. The total quantity of the fiduciary media as issued by the banks and absorbed by the cash holdings of their clients has altered the structure of prices and the monetary unit's purchasing power. But these effects have already been consummated and at present the market is no longer stirred by any movements generated from this past credit expansion.

But now, we assume further, one bank alone embarks upon an additional issue of fiduciary media while the other banks do not follow suit. The clients of the expanding bank—whether its old clients or new ones acquired on account of the expansion—receive additional credits, they expand their business activities, they appear on the market with an additional demand for goods and services, they bid up prices. Those people who are not clients of the expanding bank are not in a position to afford these higher prices; they are forced to restrict their purchases. Thus there prevails on the market a shifting of goods from the nonclients to the clients of the expanding bank. The clients buy more from the nonclients than they sell to them; they have more to pay to the nonclients than they receive from them. But money-substitutes issued by the expanding bank are not suitable for payments to nonclients, as these people do not assign to them the character of money-substitutes. In order to settle the payments due to nonclients, the clients must first exchange the money-substitutes issued by their own—viz., the expanding bank—against money. The expanding bank must redeem its banknotes and pay out its deposits. Its reserve—we suppose that only a part of the money-substitutes it had issued had the character of fiduciary media—dwindles. The instant approaches in which the bank will—after the exhaustion of its money reserve—no longer be in a position to redeem the money-substitutes still current. In order to avoid insolvency it must as soon as possible

return to a policy of strengthening its money reserve. It must abandon its expansionist methods.

This reaction of the market to a credit expansion on the part of a bank with a limited clientele has been brilliantly described by the Currency School. The special case dealt with by the Currency School referred to the coincidence of credit expansion on the part of one country's privileged central bank or of all banks of one country and of a nonexpansionist policy on the part of the banks of other countries. Our demonstration covers the more general case of the coexistence of a multiplicity of banks with different clientele as well as the most general case of the existence of one bank with a limited clientele in a system in which the rest of the people do not patronize any bank and do not consider any claims as money-substitutes. It does not matter, of course, whether one assumes that the clients of a bank live neatly separated from those of the other banks in a definite district or country or whether they live side by side with those of the other banks. These are merely differences in the data not affecting the catallactic problems involved.

A bank can never issue more money-substitutes than its clients can keep in their cash holdings. The individual client can never keep a larger portion of his total cash holding in money-substitutes than that corresponding to the proportion which his turnover with other clients of his bank bears to his total turnover. For considerations of convenience he will, as a rule, remain far below this maximum proportion. Thus a limit is drawn to the issue of fiduciary media. We may admit that everybody is ready to accept in his current transactions indiscriminately banknotes issued by any bank and checks drawn upon any bank. But he deposits without delay with his own bank not only the checks but also the banknotes of banks of which he is not himself a client. In the further course his bank settles its accounts with the bank engaged. Thus the process described above comes into motion.

A lot of nonsense has been written about a perverse predilection of the public for banknotes issued buy dubious banks. The truth is that, except for small groups of businessmen who were able to distinguish between good and bad banks, banknotes were always looked upon with distrust. It was the special charters which the governments granted to privileged banks that slowly made these suspicions disappear. The often advanced argument that small banknotes come into the hands of poor and ignorant people who cannot distinguish between good and bad notes cannot be taken seriously. The poorer the recipient of a banknote is nd the less familiar he is with bank affairs, the more quickly will he spend the note and the more quickly will it

return, by way of retail and wholesale trade, to the issuing bank or to people conversant with banking conditions.

It is very easy for a bank to increase the number of people who are ready to accept loans granted by credit expansion and paid out in an amount of money-substitutes. But it is very difficult for any bank to enlarge its clientele, that is, the number of people who are ready to consider these claims as money-substitutes and to keep them as such in their cash holdings. To enlarge this clientele is a troublesome and slow process, as is the acquisition of any kind of good will. On the other hand, a bank can lose its clientele very quickly. If it wants to preserve it, it must never permit any doubt about its ability and readiness to discharge all its liabilities in due compliance with the terms of the contract. A reserve must be kept large enough to redeem all banknotes which a holder may submit for redemption. Therefore no bank can content itself with issuing fiduciary media only; it must keep a reserve against the total amount of money-substitutes issued and thus combine issuing fiduciary media and money-certificates.

It was a serious blunder to believe that the reserve's task is to provide the means for the redemption of those banknotes the holders of which have lost confidence in the bank. The confidence which a bank and the money-substitutes it has issued enjoy is indivisible. It is either present with all its clients or it vanishes entirely. If some of the clients lose confidence, the rest of them lose it too. No bank issuing fiduciary media and granting circulation credit can fulfill the obligations which it has taken over in issuing money-substitutes if all clients are losing confidence and want to have their banknotes redeemed and their deposits paid back. This is an essential feature or weakness of the business of issuing fiduciary media and granting circulation credit. No system of reserve policy and no reserve requirements as enforced by the laws can remedy it. All that a reserve can do is to make it possible for the bank to withdraw from the market an excessive amount of fiduciary media issued. If the bank has issued more banknotes than its clients can use in doing business with other clients, it must redeem such an excess.

The laws which compelled the banks to keep a reserve in a definite ration of the total amount of deposits and of banknotes issued were effective in so far as they restricted the increase in the amount of fiduciary media and of circulation credit. They were futile as far as they aimed at safeguarding, in the event of a loss of confidence, the prompt redemption of the banknotes and the prompt payment on deposits.

The Banking School failed entirely in dealing with these problems. It was

confused by a spurious idea according to which the requirements of business rigidly limit the maximum amount of convertible banknotes that a bank can issue. They did not see that the demand of the public for credit is a magnitude dependent on the banks' readiness to lend, and that banks which do not bother about their own solvency are in a position to expand circulation credit by lowering the rate of interest below the market rate. It is not true that the maximum amount which a bank can lend if it limits its lending to discounting short-term bills of exchange resulting from the sale and purchase of raw materials and half-manufactured goods, is a quantity uniquely determined by the state of business and independent of the bank's policies. This quantity expands or shrinks with the lowering or raising of the rate of discount. Lowering the rate of interest is tantamount to increasing the quantity of what is mistakenly considered as the fair and normal requirements of business.

The Currency School gave a quite correct explanation of the recurring crises as they upset English business conditions in the 'thirties and 'forties of the nineteenth century. There was credit expansion on the part of the Bank of England and the other British banks and bankers, while there was no credit expansion, or at least not to the same degree, in the countries with which Great Britain traded. The external drain occurred as the necessary consequence of this state of affairs. Everything that the Banking School advanced in order to refute this theory was vain. Unfortunately, the Currency School erred in two respects. It never realized that the remedy it suggested, namely strict legal limitation of the amount of banknotes issued beyond the specie reserve, was not the only one. It never gave a thought to the idea of free banking. The second fault of the Currency School was that it failed to recognize that deposits subject to check are money-substitutes and, as far as their amount exceeds the reserve kept, fiduciary media, and consequently no less a vehicle of credit expansion than are banknotes. It was the only merit of the Banking School that it recognized that what is called deposit currency is a money-substitute no less than banknotes. But except for this point, all the doctrines of the Banking School were spurious. It was guided by contradictory ideas concerning money's neutrality; it tried to refute the quantity theory of money by referring to a *deus ex machina*, the much talked about hoards, and it misconstrued entirely the problems of the rate of interest.

It must be emphasized that the problem of legal restrictions upon the issuance of fiduciary media could emerge only because governments had

granted special privileges to one or several banks and had thus prevented the free evolution of banking. If the governments had never interfered for the benefit of special banks, if they had never released some banks from the obligation, incumbent upon all individuals and firms in the market economy, to settle their liabilities in full compliance with the terms of the contract, no bank problem would have come into being. The limits which are drawn to credit expansion would have worked effectively. Considerations of its own solvency would have forced every bank to cautious restraint in issuing fiduciary media. Those banks which would not have observed these indispensable rules would have gone bankrupt, and the public, warned through damage, would have become doubly suspicious and reserved.

The attitudes of the European governments with regard to banking were from the beginning insincere and mendacious. The pretended solicitude for the nation's welfare, for the public in general, and for the poor ignorant masses in particular was a mere blind. The governments wanted inflation and credit expansion, they wanted booms and easy money. Those Americans who twice succeeded in doing away with a central bank were aware of the dangers of such institutions; it was only too bad that they failed to see that the evils they fought were present in every kind of government interference with banking. Today even the most bigoted etatists cannot deny that all the alleged evils of free banking count little when compared with the disastrous effects of the tremendous inflations which the privileged and government-controlled banks have brought about.

It is a fable that governments interfered with banking in order to restrict the issue of fiduciary media and to prevent credit expansion. The idea that guided governments was, on the contrary, the lust for inflation and credit expansion. They privileged banks because they wanted to widen the limits that the unhampered market draws to credit expansion or because they were eager to open to the treasury a source of revenue. For the most part both of these considerations motivated the authorities. They were convinced that the fiduciary media are an efficient means of lowering the rate of interest, and asked the banks to expand credit for the benefit of both business and the treasury. Only when the undesired effects of credit expansion became visible, were laws enacted to restrict the issue of banknotes—and sometimes also of deposits—not covered by specie. The establishment of free banking was never seriously considered precisely because it would have been too efficient in restricting credit expansion. For rulers, writers, and the public were unanimous in the belief that business has a fair claim to a "normal"

and "necessary" amount of circulation credit and that this amount could not be attained under free banking.[17]

Many governments never looked upon the issuance of fiduciary media from a point of view other than that of fiscal concerns. In their eyes the foremost task of the banks was to lend money to the treasury. The money-substitutes were a favorably considered as pacemakers for government-issued paper money. The convertible banknote was merely a first step on the way to the nonredeemable banknote. With the progress of statolatry and the policy of interventionism these ideas have become general and are no longer questioned by anybody. No government is willing today to give any thought to the program of free banking because no government wants to renounce what it considers a handy source of revenue. What is called today financial war preparedness is merely the ability to procure by means of privileged and government-controlled banks all the money a warring nation may need. Radical inflationism, although not admitted explicitly, is an essential feature of the economic ideology of our age.

But even at the time liberalism enjoyed its highest prestige and governments were more eager to preserve peace and well-being than to foment war, death, destruction, and misery, people were biased in dealing with the problems of banking. Outside of the Anglo-Saxon countries public opinion was convinced that it is one of the main tasks of good government to lower the rate of interest and that credit expansion is the appropriate means for the attainment of this end.

Great Britain was free from these errors when in 1844 it reformed its bank laws. But the two shortcomings of the Currency School vitiated this famous act. On one hand, the system of government interference with banking was preserved. On the other hand, limits were placed only on the issuance of banknotes not covered by specie. The fiduciary media were suppressed only in the shape of banknotes. They could thrive as deposit currency.

In carrying the idea implied in the Currency Theory to its full logical conclusion, one could suggest that all banks be forced by law to keep against the total amount of money-substitutes (banknotes plus demand deposits) a 100 per cent money reserve. This is the core of Professor Irving Fisher's 100 per cent plan. But Professor Fisher combined his plan with his proposals

17.The notion of "normal" credit expansion is absurd. Issuance of additional fiduciary media, no matter what its quantity may be, always sets in motion those changes in the price structure the description of which is the task of the theory of the trade cycle. Of course, if the additional amount issued is not large, neither are the inevitable effects of the expansion.

concerning the adoption of an index-number standard. It has been pointed out already why such a scheme is illusory and tantamount to open approval of the government's power to manipulate purchasing power according to the appetites of powerful pressure groups. But even if the 100 percent reserve plan were to be adopted on the basis of the unadulterated gold standard, it would not entirely remove the drawbacks inherent in every kind of government interference with banking. What is needed to prevent any further credit expansion is to place the banking business under the general rules of commercial and civil laws compelling every individual and firm to fulfill all obligations in full compliance with the terms of the contract. If banks are preserved as privileged establishments subject to special legislative provisions, the tool remains that governments can use for fiscal purposes. Then every restriction imposed upon the issuance of fiduciary media depends upon the government's and the parliament's good intentions. They may limit the issuance for periods which are called normal. The restriction will be withdrawn whenever a government deems that an emergency justifies resorting to extraordinary measures. If an administration and the party backing it want to increase expenditure without jeopardizing their popularity through the imposition of higher taxes, they will always be ready to call their impasse an emergency. Recourse to the printing press and to the obsequiousness of bank managers willing to oblige the authorities regulating their conduct of affairs is the foremost means of governments eager to spend money for purposes for which the taxpayers are not ready to pay higher taxes.

Free banking is the only method available for the prevention of the dangers inherent in credit expansion. It would, it is true, not hinder a slow credit expansion, kept within very narrow limits, on the part of cautious banks which provide the public with all information required about their financial status. But under free banking it would have been impossible for credit expansion with all its inevitable consequences to have developed into a regular—one is tempted to say normal—feature of the economic system. Only free banking would have rendered the market economy secure against crises and depressions.

Looking backward upon the history of the last two centuries, one cannot help realizing that the blunders committed by liberalism in handling the problems of banking were a deadly blow to the market economy. There was no reason whatever to abandon the principle of free enterprise in the field of banking. The majority of liberal politicians simply surrendered to the popular hostility

against money-lending and interest taking. They failed to realize that the rate of interest is a market phenomenon which cannot be manipulated *ad libitum* by the authorities or by any other agency. They adopted the superstition that lowering the rate of interest is beneficial and that credit expansion is the right means of attaining such cheap money. Nothing harmed the cause of liberalism more than the almost regular return of feverish booms and of the dramatic breakdown of bull markets followed by lingering slumps. Public opinion has become convinced that such happenings are inevitable in the unhampered market economy. People did not conceive that what they lamented was the necessary outcome of policies directed toward a lowering of the rate of interest by means of credit expansion. They stubbornly kept to these policies and tried in vain to fight their undesired consequences by more and more government interference.

Observations on the Discussions Concerning Free Banking

The Banking School taught that an overissuance of banknotes is impossible if the bank limits its business to the granting of short-term loans.[18] When the loan is paid back at maturity, the banknotes return to the bank and thus disappear from the market. However, this happens only if the bank restricts the amount of credits granted. (But even then it would not undo the effects of its previous credit expansion. It would merely add to it the effects of a later credit contraction.) The regular course of affairs is that the bank replaces the bills expired and paid back by discounting new bills of exchange. Then to the amount of banknotes withdrawn from the market by the repayment of the earlier loan there corresponds an amount of newly issued banknotes.

The concatenation which sets a limit to credit expansion under a system of free banking works in a different way. It has no reference whatever to the process which this so-called Principle of Fullarton has in mind. It is brought about by the fact that credit expansion in itself does not expand a bank's clientele, viz., the number of people who assign to the demand-claims against this bank the character of money-substitutes. Since the overissuance of fiduciary media on the part of one bank, as has been shown above, increases the amount to be paid by the expanding bank's clients to other people, it increases concomitantly the demand for the redemption of its money-substitutes. It thus forces the expanding bank back to a restraint.

This fact was never questioned with regard to demand deposits subject to check. It is obvious that an expanding bank would very soon find itself in a difficult position in clearing with the other banks. However, people

18.See above, pp. 437-438.

sometimes maintained that things are different as far as banknotes are concerned.

In dealing with the problems of money-substitutes, catallactics maintains that the claims in question are dealt with by a number of people like money, that they are, like money, given away and received in transactions and dept in cash holdings. Everything that catallactics asserts with regard to money-substitutes presupposes this state of affairs. But it would be preposterous to believe that every banknote issued by any bank really becomes a money-substitute. What makes a banknote a money-substitute is the special kind of good will of the issuing bank. The slightest doubt concerning the bank's ability or willingness to redeem every banknote without any delay at any time and with no expense to the bearer impairs this special good will and deprives the banknotes of their character as a money-substitute. We may assume that everybody not only is prepared to get such questionable banknotes as a loan but also prefers to receive them as payment instead of waiting longer. But if any doubts exist concerning their prime character, people will hurry to get rid of them as soon as possible. They will keep in their cash holdings money and such money-substitutes as they consider perfectly safe and will dispose of the suspect banknotes. These banknotes will be traded at a discount, and this fact will carry them back to the issuing bank which alone is bound to redeem them at their full face value.

The issue can still better be clarified by reviewing banking conditions in continental Europe. Here the commercial banks were free from any limitation concerning the amount of deposits subject to check. They would have been in a position to grant circulation credit and thus expand credit by adopting the methods applied by the banks of the Anglo-Saxon countries. However, the public was not ready to treat such bank deposits as money-substitutes. As a rule a man who received a check cashed it immediately and thereby withdrew the amount from the bank. It was impossible for a commercial bank to lend, except for negligible sums, by crediting the debtor's account. As soon as the debtor wrote out a check, a withdrawal of the amount concerned from the bank resulted. Only big business treated deposits as money-substitutes. Although the Central Banks in most of these countries were not submitted to any legal restrictions with regard to their deposit business, they were prevented from using it as a vehicle of large-scale credit expansion because the clientele for deposit currency was too small. Banknotes were practically the sole instrument of circulation credit and credit expansion.

In the 'eighties of the nineteenth century the Austrian Government embarked upon a project of popularizing checkbook money by establishing a checking account department with the Post Office Savings Service. It succeeded to some degree. Balances with this department of the Post Office

were treated as money-substitutes by a clientele which was broader than that of the checking account department of the country's Central Bank of Issue. The system was later preserved by the new states which in 1918 succeeded the Habsburg Empire. It has also been adopted by many other European nations, for instance Germany. It is important to realize that this kind of deposit currency was a purely governmental venture and that the circulation credit that the system granted was exclusively lent to the governments. It is characteristic that the name of the Austrian Post Office Savings Institution, and likewise of most of its foreign replicas, was not Savings *Bank*, but Savings *Office (Amt)*. Apart from these demand deposits with the government post system in most of the non-Anglo-Saxon countries, banknotes—and, to a small extent, also deposits with the Government-controlled Central Bank of Issue—are the main vehicles of circulation credit. In speaking of credit expansion with regard to these countries, one refers almost entirely to banknotes.

In the United States many employers pay salaries and even wages by writing out checks. As far as the payees immediately cash the checks received and withdraw the whole amount from the bank, the method means merely that the onerous burden of manipulating coins and banknotes is shifted from the employer's cashier to the bank's cashier. It has no catallactic implications. If all citizens were to deal in this way with checks received, the deposits would not be money-substitutes and could not be used as instruments of circulation credit. It is solely the fact that a considerable part of the public looks upon deposits as money-substitutes that makes them what is popularly called checkbook money or deposit currency.

It is a mistake to associate with the notion of free banking the image of a state of affairs under which everybody is free to issue banknotes and to cheat the public *ad libitum*. People often refer to the dictum of an anonymous american quoted by Tooke: "Free trade in banking is free trade in swindling." However, freedom in the issuance of banknotes would have narrowed down the use of banknotes considerably if it had not entirely suppressed it. It was this idea which Cernuschi advanced in the hearings of the French Banking Inquiry of October 24, 1865: "I believe that what is called freedom of banking would result in a total suppression of banknotes in France. I want to give everybody the right to issue banknotes so that nobody should take any banknotes any longer."[19]

People may uphold the opinion that banknotes are more handy than coins and that considerations of convenience recommend their use. As far as this is the case, the public would be prepared to pay a premium for the avoidance of the inconveniences involved in carrying a heavy weight of coins in their pockets. Thus in earlier days banknotes issued by banks of unquestionable

19.Cf. Cernuschi, *Contre le billet de banque* (Paris, 1866), p. 55.

solvency stood at a slight premium as against metallic currency. Thus travelers' checks are rather popular although the bank issuing them charges a commission for their issuance. But all this has no reference whatever to the problem in question. It does not provide a justification for the policies urging the public to resort to the use of banknotes. Governments did not foster the use of banknotes in order to avoid inconvenience to ladies shopping. Their idea was to lower the rate of interest and to open a source of cheap credit to their treasuries. In their eyes the increase in the quantity of fiduciary media was a means of promoting welfare.

Banknotes are not indispensable. All the economic achievements of capitalism would have been accomplished if they had never existed. Besides, deposit currency can do all the things banknotes do. And government interference with the deposits of commercial banks cannot be justified by the hypocritical pretext that poor ignorant wage earners and farmers must be protected against wicked bankers.

But, some people may ask, what about a cartel of the commercial banks? Could not the banks collude for the sake of a boundless expansion of their issuance of fiduciary media? The objection is preposterous. As long as the public is not, by government interference, deprived of the right of withdrawing its deposits, no bank can risk its own good will by collusion with banks whose good will is not so high as its own. One must not forget that every bank issuing fiduciary media is in a rather precarious position. Its most valuable asset is its reputation. It must go bankrupt as soon as doubts arise concerning its perfect trustworthiness and solvency. It would be suicidal for a bank of good standing to link its name with that of other banks with a poorer good will. Under free banking a cartel of the banks would destroy the country's whole banking system. It would not serve the interests of any bank.

For the most part the banks of good repute are blamed for their conservatism and their reluctance to expand credit. In the eyes of people not deserving of credit such restraint appears as a vice. But it is the first and supreme rule for the conduct of banking operations under free banking.

It is extremely difficult for our contemporaries to conceive of the conditions of free banking because they take government interference with banking for granted and as necessary. However, one must remember that this government interference was based on the erroneous assumption that credit expansion is a proper means of lowering the rate of interest permanently and without harm to anybody but the callous capitalists. The governments interfered precisely because they knew that free banking keeps credit expansion within narrow limits.

Economists may be right in asserting that the present state of banking makes government interference with banking problems advisable. But this

present state of banking is not the outcome of the operation of the unhampered market economy. It is a product of the various governments' attempts to bring about the conditions required for large-scale credit expansion. If the governments had never interfered, the use of banknotes and of deposit currency would be limited to those strata of the population who know very well how to distinguish between solvent and insolvent banks. No large-scale credit expansion would have been possible. The governments alone are responsible for the spread of the superstitious awe with which the common man looks upon every bit of paper upon which the treasury or agencies which it controls have printed the magical words *legal tender*.

Government interference with the present state of banking affairs could be justified if its aim were to liquidate the unsatisfactory conditions by preventing or at least seriously restricting any further credit expansion. In fact, the chief objective of present-day government interference is to intensify further credit expansion. This policy is doomed to failure. Sooner or later it must result in a catastrophe.

13. The Size and Composition of Cash Holdings

The total amount of money and money-substitutes is kept by individuals and firms in their cash holdings. The share of each is determined by marginal utility. Each is eager to keep a certain portion of his total wealth in cash. He gets rid of an excess of cash by increased purchases and remedies a deficiency of cash by increased sales. The popular terminology confusing the demand for money for cash holding and the demand for wealth and vendible goods must not delude an economist.

What is valid with regard to individuals and firms is no less true with regard to every sum of the cash holdings of a number of individuals and firms. The point of view from which we treat a number of such individuals and firms as a totality and sum up their cash holdings is immaterial. The cash holdings of a city, a province, or a country is the sum of the cash holdings of all its residents.

Let us assume that the market economy uses only one kind of money and that money-substitutes are either unknown or used in the whole area by everybody without any difference. There are, for example, gold money and redeemable banknotes, issued by a world bank and treated by everybody as money-substitutes. On these assumptions measures hindering the exchange of commodities and services do not affect the state of monetary affairs and the size of cash holdings. Tariffs, embargoes, and migration barriers affect the tendencies toward an equalization of prices, wages, and interest rates. They do not react directly upon cash holdings.

If a government aims at increasing the amount of cash kept by its subjects, it must order them to deposit a certain amount with an office and to leave it there untouched. The necessity of procuring this amount would force everybody to sell more and to buy less; domestic prices would drop; exports would be increased and imports reduced; a quantity of cash would be imported. But if the government were simply to obstruct the importation of goods and the exportation of money, it would fail to attain its goal. If imports drop, other things being equal, exports drop concomitantly.

The role money plays in international trade is not different from that which it plays in domestic trade. Money is no less a medium of exchange in foreign trade than it is in domestic trade. Both in domestic trade and in international trade purchases and sales result in a more than passing change in the cash holdings of individuals and firms only if people are purposely intent upon increasing or restricting the size of their cash holdings. A surplus of money flows into a country only when its residents are more eager to increase their cash holdings than are the foreigners. An outflow of money occurs only if the residents are more eager to reduce their cash holdings than are the foreigners. A transfer of money from one country into another country which is not compensated by a transfer in the opposite direction is never the unintended result of international trade transactions. It is always the outcome of intended changes in the cash holdings of the residents. Just as wheat is exported only if a country's residents want to export a surplus of wheat, so money is exported only if the residents want to export a sum of money which they consider as a surplus.

If a country turns to the employment of money-substitutes which are not employed abroad, such a surplus emerges. The appearance of these money-substitutes is tantamount to an increase in the country's supply of money in the broader sense, i.e., supply of money plus fiduciary media; it brings about a surplus in the supply of money in the broader sense. The residents are eager to get rid of their share in the surplus by increasing their purchases either of domestic or of foreign goods. In the first case exports drop and in the second case imports increase. In both cases the surplus of money goes abroad. As, according to our assumption, money-substitutes cannot be exported, only money proper flows out. The result is that within the domestic supply of money in the broader sense (money + fiduciary media) the portion of money drops and the portion of fiduciary media increases. The domestic stock of money in the narrower sense is now smaller than it was previously.

Now, we assume further, the domestic money-substitutes cease to be

money-substitutes. The bank which issued them no longer redeems them in money. These former money-substitutes are now claims against a bank which does not fulfill its obligations, a bank whose ability and willingness to pay its debts is questionable. Nobody knows whether and when they will ever be redeemed. But it may be that these claims are used by the public as credit money. As money-substitutes they had been considered as equivalents of the sum of money to which they gave a claim payable at any moment. As credit money they are now traded at a discount.

At this point the government may interfere. It decrees that these pieces of credit money are legal tender at their face value.[20] No trader is free to discriminate against them. The decree tries to force the public to treat things of different exchange value as if they had the same exchange value. It interferes with the structure of prices as determined by the market. It fixes minimum prices for the credit money and maximum prices for the commodity money (gold) and foreign exchange. The result is not what the government aimed at. The difference in exchange value between credit money and gold does not disappear. As it is forbidden to employ the coins according to their market price, people no longer employ them in buying and selling and in paying debts. They keep them or they export them. The commodity money disappears from the domestic market. Bad money, says Gresham's Law, drives good money out of the country. It would be more correct to say that the money which the government's decree has undervalued disappears from the market and the money which the decree has overvalued remains.

The outflow of commodity money is thus not the effect of an unfavorable balance of payments, but the effect of a government interference with the price structure.

14. Balances of Payment

The confrontation of the money equivalent of all incomings and outgoings of an individual or a group of individuals during any particular period of time is called the balance of payments. The credit side and the debit side are always equal. The balance is always in balance.

If we want to know an individual's position in the frame of the market

20.Very often the legal tender quality had been given to those banknotes at a time when they still were money-substitutes and as such equal to money in their exchange value. At that time the decree had no catallactic importance. Now it becomes important because the market no longer considers them money-substitutes.