

XVI. PRICES

1. The Pricing Process

IN an occasional act of barter in which men who ordinarily do not resort to trading with other people exchange goods ordinarily not negotiated, the ratio of exchange is determined only within broad margins. Catallactics, the theory of exchange ratios and prices, cannot determine at what point within these margins the concrete ration will be established. All that it can assert with regard to such exchanges is that they can be effected only if each party values what he receives more highly than what he gives away.

The recurrence of individual acts of exchange generates the market step by step with the evolution of the division of labor within a society based on private property. As it becomes a rule to produce for other people's consumption, the members of society must sell and buy. The multiplication of the acts of exchange and the increase in the number of people offering or asking for the same commodities narrow the margins between the valuations of the parties. Indirect exchange and its perfection through the use of money divide the transactions into two different parts: sale and purchase. What in the eyes of one party is a sale, is for the other party a purchase. The divisibility of money, unlimited for all practical purposes, makes it possible to determine the exchange ratios with nicety. The exchange ratios are now as a rule money prices. They are determined between extremely narrow margins: the valuations on the one hand of the marginal buyer and those of the marginal offerer who abstains from selling, and the valuations on the other hand of the marginal seller and those of the marginal potential buyer who abstains from buying.

The concatenation of the market is an outcome of the activities of entrepreneurs, promoters, speculators, and dealers in futures and in arbitrage. It has been asserted that catallactics is based on the assumption—contrary to reality—that all parties are provided with perfect knowledge concerning the market data and are therefore in a position to take best advantage of the most favorable opportunities for buying and

selling. It is true that some economists really believed that such an assumption is implied in the theory of prices. These authors not only failed to realize in what respects a world peopled with men perfectly equal in knowledge and foresight would differ from the real world which all economists wanted to interpret in developing their theories; they also erred in being unaware of the fact that they themselves did not resort to such an assumption in their own treatment of prices.

In an economic system in which every actor is in a position to recognize correctly the market situation with the same degree of insight, the adjustment of prices to every change in the data would be achieved at one stroke. It is impossible to imagine such uniformity in the correct cognition and appraisal of changes in data except by the intercession of superhuman agencies. We would have to assume that every man is approached by an angel informing him of the change in data which has occurred and advising him how to adjust his own conduct in the most adequate way to this change. Certainly the market that catallactics deals with is filled with people who are to different degrees aware of the changes in data and who, even if they have the same information, appraise it differently. The operation of the market reflects the fact that changes in the data are first perceived only by a few people and that different men draw different conclusions in appraising their effects. The more enterprising and brighter individuals take the lead, others follow later. The shrewder individuals appreciate conditions more correctly than the less intelligent and therefore succeed better in their actions. Economists must never disregard in their reasoning the fact that the innate and acquired inequality of men differentiates their adjustment to the conditions of their environment.

The driving force of the market process is provided neither by the consumers nor by the owners of the means of production—land, capital goods, and labor—but by the promoting and speculating entrepreneurs. These are people intent upon profiting by taking advantage of differences in prices. Quicker of apprehension and farther-sighted than other men, they look around for sources of profit. They buy where and when they deem prices too low, and they sell where and when they deem prices too high. They approach the owners of the factors of production, and their competition sends the prices of these factors up to the limit corresponding to their anticipation of the future prices of the products. They approach the consumers, and their competition forces prices of consumers' goods down to the point at which the whole supply can be sold. Profit-seeking

speculation is the driving force of the market as it is the driving force of production.

On the market agitation never stops. The imaginary construction of an evenly rotating economy has no counterpart in reality. There can never emerge a state of affairs in which the sum of the prices of the complementary factors of production, due allowance being made for time preference, equals the prices of the products and no further changes are to be expected. There are always profits to be earned by somebody. The speculators are always enticed by the expectation of profit.

The imaginary construction of the evenly rotating economy is a mental tool for comprehension of entrepreneurial profit and loss. It is, to be sure, not a design for comprehension of the pricing process. The final prices corresponding to this imaginary conception are by no means identical with the market prices. The activities of the entrepreneurs or of any other actors on the economic scene are not guided by consideration of any such things as equilibrium prices and the evenly rotating economy. The entrepreneurs take into account anticipated future prices, not final prices or equilibrium prices. They discover discrepancies between the height of the prices of the complementary factors of production and the anticipated future prices of the products, and they are intent upon taking advantage of such discrepancies. These endeavors of the entrepreneurs would finally result in the emergence of the evenly rotating economy if no further changes in the data were to appear.

The operation of the entrepreneurs brings about a tendency toward an equalization of prices for the same goods in all subdivisions of the market, due allowance being made for the cost of transportation and the time absorbed by it. Differences in prices which are not merely transitory and bound to be wiped out by entrepreneurial action are always the outcome of particular obstacles obstructing the inherent tendency toward equalization. Some check prevents profit-seeking business from interfering. An observer not sufficiently familiar with actual commercial conditions is often at a loss to recognize the institutional barrier hindering such equalization. But the merchants concerned always know what makes it impossible for them to take advantage of such differences.

Statisticians treat this problem too lightly. When they have discovered differences in the wholesale price of a commodity between two cities or countries, not entirely accounted for by the cost of transportation, tariffs, and excise duties, they acquiesce in asserting that the purchasing power of

money and the “level” of prices are different.¹ On the basis of such statements people draft programs to remove these differences by monetary measures. However, the root cause of these differences cannot lie in monetary conditions. If prices in both countries are quoted in terms of the same kind of money, it is necessary to answer the question as to what prevents businessmen from embarking upon dealings which are bound to make price differences disappear. Things are essentially the same if the prices are expressed in terms of different kinds of money. For the mutual exchange ratio between various kinds of money tends toward a point at which there is no further margin left to profitable exploitation of differences in commodity prices. Whenever differences in commodity prices between various places persist, it is a task for economic history and descriptive economics to establish what institutional barriers hinder the execution of transactions which must result in the equalization of prices.

All the prices we know are past prices. They are facts of economic history. In speaking of present prices we imply that the prices of the immediate future will not differ from those of the immediate past. However, all that is asserted with regard to future prices is merely an outcome of the understanding of future events.

The experience of economic history never tells us more than that at a definite date and definite place two parties *A* and *B* traded a definite quantity of the commodity *a* against a definite number of units of the money *p*. In speaking of such acts of buying and selling at the market price of *a*, we are guided by a theoretical insight, deduced from an aprioristic starting point. This is the insight that, in the absence of particular factors making for price differences, the prices paid at the same time and the same place for equal quantities of the same commodity tend toward equalization, viz., a final price. But the actual market prices never reach this final state. The various market prices about which we can get information were determined under different conditions. It is impermissible to confuse averages computed from them with the final prices.

Only with regard to fungible commodities negotiated on organized stock or commodity exchanges is it permissible, in comparing prices, to assume that they refer to the same quality. Apart from such prices negotiated in exchanges and from prices of commodities the homogeneity of which can

1. Sometimes the difference in price as established by price statistics is apparent only. The price quotations may refer to various qualities of the article concerned. Or they may, complying with the local usages of commerce, mean different things. They may, for instance, include or not include packing charges; they may refer to cash payment or to payment at a later date; and so on.

be precisely established by technological analysis, it is a serious blunder to disregard differences in the quality of the commodity in question. Even in the wholesale trade of raw textiles the diversity of the articles plays the main role. A comparison of prices of consumers' goods is mainly misleading on account of the difference in quality. The quantity traded in one transaction too is relevant in the determination of the price paid per unit. Shares of a corporation sold in one large lot bring a different price than those sold in several small lots.

It is necessary to emphasize these facts again and again because it is customary nowadays to play off the statistical elaboration of price data against the theory of prices. However, the statistics of prices is altogether questionable. Its foundations are precarious because circumstances for the most part do not permit the comparison of the various data, their linking together in series, and the computation of averages. Full of zeal to embark upon mathematical operations, the statisticians yield to the temptation of disregarding the incomparability of the data available. The information that a certain firm sold at a definite date a definite type of shoes for six dollars a pair relates a fact of economic history. A study of the behavior of shoe prices from 1923 to 1939 is conjectural, however sophisticated the methods applied may be.

Catalactics shows that entrepreneurial activities tend toward an abolition of price differences not caused by the costs of transportation and trade barriers. No experience has ever contradicted this theorem. The results obtained by an arbitrary identification of unequal things are irrelevant.

2. Valuation and Appraisalment

The ultimate source of the determination of prices is the value judgments of the consumers. Prices are the outcome of the valuation preferring a to b . They are social phenomena as they are brought about by the interplay of the valuations of all individuals participating in the operation of the market. Each individual, in buying or not buying and in selling or not selling, contributes his share to the formation of the market prices. But the larger the market is, the smaller is the weight of each individual's contribution. Thus the structure of market prices appears to the individual as a datum to which he must adjust his own conduct.

The valuations which result in determination of definite prices are different. Each party attaches a higher value to the good he receives than to the good he gives away. The exchange ratio, the price, is not the product of an equality of valuation, but, on the contrary, the product of a discrepancy in valuation.

Appraisalment must be clearly distinguished from valuation. Appraisalment in no way depends upon the subjective valuation of the man who appraises. He is not intent upon establishing the subjective use-value of the good concerned, but upon anticipating the prices which the market will determine. Valuation is a value judgment expressive of a difference in value. Appraisalment is the anticipation of an expected fact. It aims at establishing what prices will be paid on the market for a particular commodity or what amount of money will be required for the purchase of a definite commodity.

Valuation and appraisalment are, however, closely connected. The valuations of an autarkic husbandman directly compare the weight he attaches to different means for the removal of uneasiness. The valuations of a man buying and selling on the market must not disregard the structure of market prices; they depend upon appraisalment. In order to know the meaning of a price one must know the purchasing power of the amount of money concerned. It is necessary by and large to be familiar with the prices of those goods which one would like to acquire and to form on the ground of such knowledge an opinion about their future prices. If an individual speaks of the costs incurred by the purchase of some goods already acquired or to be incurred by the purchase of goods he plans to acquire, he expresses these costs in terms of money. But this amount of money represents in his eyes the degree of satisfaction he could obtain by employing it for the acquisition of other goods. The valuation makes a detour, it goes via the appraisalment of the structure of market prices; but it always aims finally at the comparison of alternative modes for the removal of felt uneasiness.

It is ultimately always the subjective value judgments of individuals that determine the formation of prices. Catallactics in conceiving the pricing process necessarily reverts to the fundamental category of action, the preference given to *a* over *b*. In view of popular errors it is expedient to emphasize that catallactics deals with the real prices as they are paid in definite transactions and not with imaginary prices. The concept of final prices is merely a mental tool for the grasp of a particular problem, the emergence of entrepreneurial profit and loss. The concept of a “just” or “fair” price is devoid of any scientific meaning; it is a disguise for wishes, a striving for a state of affairs different from reality. Market prices are entirely determined by the value judgments of men as they really act.

If one says that prices tend toward a point at which total demand is equal to total supply, one resorts to another mode of expressing the same concatenation of phenomena. Demand and supply are the outcome of the conduct

of those buying and selling. If, other things being equal, supply increases, prices must drop. At the previous price all those ready to pay this price could buy the quantity they wanted to buy. If the supply increases, they must buy larger quantities or other people who did not buy before must become interested in buying. This can only be attained at a lower price.

It is possible to visualize this interaction by drawing two curves, the demand curve and the supply curve, whose intersection shows the price. It is no less possible to express it in mathematical symbols. But it is necessary to comprehend that such pictorial or mathematical modes of representation do not affect the essence of our interpretation and that they do not add a whit to our insight. Furthermore it is important to realize that we do not have any knowledge or experience concerning the shape of such curves. Always, what we know is only market prices—that is, not the curves but only a point which we interpret as the intersection of two hypothetical curves. The drawing of such curves may prove expedient in visualizing the problems for undergraduates. For the real tasks of catallactics they are mere byplay.

3. The Prices of the Goods of Higher Orders

The market process is coherent and indivisible. It is an indissoluble intertwinement of actions and reactions, of moves and countermoves. But the insufficiency of our mental abilities enjoins upon us the necessity of dividing it into parts and analyzing each of these parts separately. In resorting to such artificial cleavages we must never forget that the seemingly autonomous existence of these parts is an imaginary makeshift of our minds. They are only parts, that is, they cannot even be thought of as existing outside the structure of which they are parts.

The prices of the goods of higher orders are ultimately determined by the prices of the goods of the first or lowest order, that is, the consumers' goods. As a consequence of this dependence they are ultimately determined by the subjective valuations of all members of the market society. It is, however, important to realize that we are faced with a connection of prices, not with a connection of valuations. The prices of the complementary factors of production are conditioned by the prices of the consumers' goods. The factors of production are appraised with regard to the prices of the products, and from this appraisal their prices emerge. Not the valuations but the appraisal are transferred from the goods of the first order to those of higher orders. The prices of the consumers' goods engender the actions

resulting in the determination of the prices of the factors of production. These prices are primarily connected only with the prices of the consumers' goods. With the valuations of the individuals they are only indirectly connected, viz., through the intermediary of the prices of the consumers' goods, the products of their joint employment.

The tasks incumbent upon the theory of the prices of factors of production are to be solved by the same methods which are employed for treatment of the prices of consumers' goods. We conceive the operation of the market of consumer's goods in a twofold way. We think on the one hand of a state of affairs which leads to acts of exchange; the situation is such that the uneasiness of various individuals can be removed to some extent because various people value the same goods in a different way. On the other hand we think of a situation in which no further acts of exchange can happen because no actor expects any further improvement of his satisfaction by further acts of exchange. We proceed in the same way in comprehending the formation of the prices of factors of production. The operation of this market is actuated and kept in motion by the exertion of the promoting entrepreneurs, eager to profit from differences in the market prices of the factors of production and the expected prices of the products. The operation of this market would stop if a situation were ever to emerge in which the sum of the prices of the complementary factors of production—but for interest—equaled the prices of the products and nobody believed that further price changes were to be expected. Thus we have described the process adequately and completely by pointing out, positively, what actuates it and, negatively, what would suspend its motion. The main importance is to be attached to the positive description. The negative description resulting in the imaginary constructions of the final price and the evenly rotating economy is merely auxiliary. For the task is not the treatment of imaginary concepts, which never appear in life and action, but the treatment of the market prices at which the goods of higher orders are really bought and sold.

This method we owe to Gossen, Carl Menger, and Bohm-Bawerk. Its main merit is that it implies the cognition that we are faced with a phenomenon of price determination inextricably linked with the market process. It distinguishes between two things: (*a*) the direct valuation of the factors of production which attaches the value of the product to the total complex of the complementary factors of production, and (*b*) the prices of the single factors of production which are formed on the market as the resultant of the concurring

actions of competing highest bidders. Valuation as it can be practiced by an isolated actor (Robinson Crusoe or a socialist board of production management) can never result in a determination of such a thing as quotas of value. Valuation can only arrange goods in scales of preference. It can never attach to a good something that could be called a quantity or magnitude of value. It would be absurd to speak of a sum of valuations or values. It is permissible to declare that, due allowance being made for time preference, the value attached to a product is equal to the value of the total complex of complementary factors of production. But it would be nonsensical to assert that the value attached to a product is equal to the "sum" of the values attached to the various complementary factors of production. One cannot add up values or valuations. One can add up prices expressed in terms of money, but not scales of preference. One cannot divide values or single out quotas of them. A value judgment never consists in anything other than preferring *a* to *b*.

The process of value imputation does not result in derivation of the value of the single productive agents from the value of their joint product. It does not bring about results which could serve as elements of economic. It is only the market that, in establishing prices for each factor of production, creates the conditions required for economic calculation. Economic calculation always deals with prices, never with values.

The market determines prices of factors of production in the same way in which it determines prices of consumers' goods. The market process is an interaction of men deliberately striving after the best possible removal of dissatisfaction. It is impossible to think away or to eliminate from the market process the men actuating its operation. One cannot deal with the market of consumers' goods and disregard the actions of the consumers. One cannot deal with the market of the goods of higher orders while disregarding the actions of the entrepreneurs and the fact that the use of money is essential in their transactions. There is nothing automatic or mechanical in the operation of the market. The entrepreneurs, eager to earn profits, appear as bidders at an auction, as it were, in which the owners of the factors of production put up for sale land, capital goods, and labor. The entrepreneurs are eager to outdo one another by bidding higher prices than their rivals. Their offers are limited on the one hand by their anticipation of future prices of the products and on the other hand by the necessity to snatch the factors of production away from the hands of other entrepreneurs competing with them.

The entrepreneur is the agency that prevents the persistence of a state of

production unsuitable to fill the most urgent wants of the consumers in the cheapest way. All people are anxious for the best possible satisfaction of their wants and are in this sense striving after the highest profit they can reap. The mentality of the promoters, speculators, and entrepreneurs is not different from that of their fellow men. They are merely superior to the masses in mental power and energy. They are the leaders on the way toward material progress. They are the first to understand that there is a discrepancy between what is done and what could be done. They guess what the consumers would like to have and are intent upon providing them with these things. In the pursuit of such plans they bid higher prices for some factors of production and lower the prices of other factors of production by restricting their demand for them. In supplying the market with those consumers' goods in the sale of which the highest profits can be earned, they create a tendency toward a fall in their prices. In restricting the output of those consumers' goods the production of which does not offer chances for reaping profit, they bring about a tendency toward a rise in their prices. All these transformations go on ceaselessly and could stop only if the unrealizable conditions of the evenly rotating economy and of static equilibrium were to be attained.

In drafting their plans the entrepreneurs look first at the prices of the immediate past which are mistakenly called *present* prices. Of course, the entrepreneurs never make these prices enter into their calculations without paying regard to anticipated changes. The prices of the immediate past are for them only the starting point of deliberations leading to forecasts of future prices. The prices of the past do not influence the determination of future prices. It is, on the contrary, the anticipation of future prices of the products that determines the state of prices of the complementary factors of production. The determination of prices has, as far as the mutual exchange ratios between various commodities are concerned,² no direct causal relation whatever with the prices of the past. The allocation of the nonconvertible factors of production among the various branches of production³ and the amount of capital goods available for future production are historical magnitudes; in this regard the past is instrumental in shaping the course of future production and in affecting the prices of the future. But directly the prices of the factors of

2. It is different with regard to the mutual exchange ratios between money and the vendible commodities and services. Cf. below, pp. 410-411.

3. The problem of the nonconvertible capital goods is dealt with below, pp. 503-509.

production are determined exclusively by the anticipation of future prices of the products. The fact that yesterday people valued and appraised commodities in a different way is irrelevant. The consumers do not care about the investments made with regard to past market conditions and do not bother about the vested interests of entrepreneurs, capitalists, landowners, and workers, who may be hurt by changes in the structure of prices. Such sentiments play no role in the formation of prices. (It is precisely the fact that the market does not respect vested interests that makes the people concerned ask for government interference.) The prices of the past are for the entrepreneur, the shaper of future production, merely a mental tool. The entrepreneurs do not construct afresh every day a radically new structure of prices or allocate anew the factors of production to the various branches of industry. They merely transform what the past has transmitted in better adapting it to the altered conditions. How much of the previous conditions they preserve and how much they change depends on the extent to which the data have changed.

The economic process is a continuous interplay of production and consumption. Today's activities are linked with those of the past through the technological knowledge at hand, the amount and the quality of the capital goods among various individuals. They are linked with the future through the very essence of human action; action is always directed toward the improvement of future conditions. In order to see his way in the unknown and uncertain future man has within his reach only two aids: experience of past events and his faculty of understanding. Knowledge about past prices is a part of this experience and at the same time the starting point of understanding the future.

If the memory of all prices of the past were to fade away, the pricing process would become more troublesome, but not impossible as far as the mutual exchange ratios between various commodities are concerned. It would be harder for the entrepreneurs to adjust production to the demand of the public, but it could be done nonetheless. It would be necessary for them to assemble anew all the data they need as the basis of their operations. They would not avoid mistakes which they now evade on account of experience at their disposal. Price fluctuations would be more violent at the beginning, factors of production would be wasted, want-satisfaction would be impaired. But finally, having paid dearly, people would again have acquired the experience needed for a smooth working of the market process.

The essential fact is that it is the competition of profit-seeking entrepre-

neers that does not tolerate the preservation of *false* prices of the factors of production. The activities of the entrepreneurs are the element that would bring about the unrealizable state of the evenly rotating economy if no further changes were to occur. In the world-embracing public sale called the market they are the bidders for the factors of production. In bidding, they are the mandataries of the consumers, as it were. Each entrepreneur represents a different aspect of the consumers' wants, either a different commodity or another way of producing the same commodity. The competition among the entrepreneurs is ultimately a competition among the various possibilities open to men to remove their uneasiness as far as possible by the acquisition of consumers' goods. The decisions of the consumers to buy one commodity and to postpone buying another determine the prices of factors of production required for manufacturing these commodities. The competition between the entrepreneurs reflects the prices of consumers' goods in the formation of the prices of the factors of production. It reflects in the external world the conflict which the inexorable scarcity of the factors of production brings about in the soul of each individual. It makes effective the subsumed decisions of the consumers as to what purpose the nonspecific factors should be used for and to what extent the specific factors of production should be used.

The pricing process is a social process. It is consummated by an interaction of all members of the society. All collaborate and cooperate, each in the particular role he has chosen for himself in the framework of the division of labor. Competing in cooperation and cooperating in competition all people are instrumental in bringing about the result, viz., the price structure of the market, the allocation of the factors of production to the various lines of want-satisfaction, and the determination of the share of each individual. These three events are not three different matters. They are only different aspects of one indivisible phenomenon which our analytical scrutiny separates into three parts. In the market process they are accomplished *uno actu*. Only people prepossessed by socialist leanings who cannot free themselves from longing glances at socialist methods speak of three different processes in dealing with the market phenomena: the determination of prices, the direction of productive efforts, and distribution.

A Limitation on the Pricing of Factors of Production

The process which makes the prices of the factors of production spring from the prices of products can achieve its results only if, of the complementary factors not replaceable by substitutes, not more than one is of absolutely

specific character, that is, is not suitable for any other employment. If the production of a product requires two or more absolutely specific factors, only a cumulative price can be assigned to them. If all factors of production were absolutely specific, the pricing process would not achieve more than such cumulative prices. It would accomplish nothing more than statements like this: as combining $3a$ and $5b$ produce one unit of p , $3a$ and $5b$ together are equal to $1p$ and the final price of $3a+5b$ is—due allowance being made for time preference—equal to the final price of $1p$. As entrepreneurs who want to use a and b for purposes other than the production of p do not bid for them, a more detailed price determination is impossible. Only if a demand emerges for a (or for b) on the part of entrepreneurs who want to employ a (or b) for other purposes, does competition between them and the entrepreneurs planning the production of p arise and a price for a (or b) come into existence, the height of which determines also the price of b (or a).

A world in which all the factors of production are absolutely specific could manage its affairs with such cumulative prices. In such a world there would not exist the problem of how to allocate the means of production to various branches of want-satisfaction. In our real world things are different. There are many scarce means of production which can be employed for various tasks. There the economic problem is to employ these factors in such a way that no unit of them should be used for the satisfaction of a less urgent need if this employment prevents the satisfaction of a more urgent need. It is this that the market solves in determining the prices of the factors of production. The social service rendered by this solution is not in the least impaired by the fact that for factors which can be employed only cumulatively no other than cumulative prices are determined.

Factors of production which can be used in the same ratio of combination for the production of various commodities but do not allow of any other use, are to be considered as absolutely specific factors. They are absolutely specific with regard to the production of an intermediary product which can be utilized for various purposes. The price of this intermediary product can be assigned to them cumulatively only. Whether this intermediary product can be directly apperceived by the senses or whether it is merely the invisible and intangible outcome of their joint employment makes no difference.

4. Cost Accounting

In the calculation of the entrepreneur costs are the amount of money required for the procurement of the factors of production. The entrepreneur is intent upon embarking upon those business projects from which he expects the highest surplus of proceeds over costs and upon shunning

projects from which he expects a lower amount of profit or even a loss. In doing this he adjusts his effort to the best possible satisfaction of the needs of the consumers. The fact that a project is not profitable because costs are higher than proceeds is the outcome of the fact that there is a more useful employment available for the factors of production required. There are other products in the purchase of which the consumers are prepared to allow for the prices of these factors of production. But the consumers are not prepared to pay these prices in buying the commodity the production of which is not profitable.

Cost accounting is affected by the fact that the two following conditions are not always present:

First, every increase in the quantity of factors expended for the production of a consumers' good increases its power to remove uneasiness.

Second, every increase in the quantity of a consumers' good requires a proportional increase in the expenditure of factors of production or even a more than proportional increase in their expenditure.

If both these conditions were always and without any exception fulfilled, every increment z expended for increasing the quantity m of a commodity g would be employed for the satisfaction of a need viewed as less urgent than the least urgent need already satisfied by the quantity m available previously. At the same time the increment z would require the employment of factors of production to be withdrawn from the satisfaction of other needs considered as more pressing than those needs whose satisfaction was foregone in order to produce the marginal unit of m . On the one hand the marginal value of the satisfaction derived from the increase in the quantity available of g would drop. On the other hand the costs required for the production of additional quantities of g would increase in marginal disutility: factors of production would be withheld from employments in which they could satisfy more urgent needs. Production must stop at the point at which the marginal utility of the increment no longer compensates for the marginal increase in the disutility of costs.

Now these two conditions are present very often, but not generally without exception. There exist many commodities of all orders of goods whose physical structure is not homogeneous and which are therefore not perfectly divisible.

It would, of course, be possible to conjure away the deviation from the first condition mentioned above by a sophisticated play on words. One could say: half a motorcar is not a motorcar. If one adds to half a motorcar a quarter of a motorcar, one does not increase the "quantity" available; only the

perfection of the process of production which turns out a complete car produces a unit and an increase in the "quantity" available. However, such an interpretation misses the point. The problem we must face is that not every increase in expenditure increases proportionately the objective use-value, the physical power of a thing to render a definite service. The various increments in expenditure bring about different results. There are increments the expenditure of which remains useless if no further increments of a definite quantity are added.

On the other hand—and this is the deviation from the second condition—an increase in physical output does not always require a proportionate increase in expenditure or even any additional expenditure. It may happen that costs do not rise at all or that their rise increases output more than proportionately. For many means of production are not homogeneous either and not perfectly divisible. This is the phenomenon known to business as the superiority of big-scale production. The economists speak of the law of increasing returns or decreasing costs.

We consider—as case *A*—a state of affairs in which all factors of production are not perfectly divisible and in which full utilization of the productive services rendered by every further indivisible element of each factor requires full utilization of the further indivisible elements of every other of the complementary factors. Then in every aggregate of productive agents each of the assembled elements—every machine, every worker, every piece of raw material—can be fully utilized only if all the productive services of the other elements are fully employed too. Within these limits the production of a part of the maximum output attainable does not require a higher expenditure than the production of the highest possible output. We may also say that the minimum-size aggregate always produces the same quantity of products; it is impossible to produce a smaller quantity of products even if there is no use for a part of it.

We consider—as case *B*—a state of affairs in which one group of the productive agents (p) is for all practical purposes perfectly divisible. On the other hand the imperfectly divisible agents can be divided in such a way that full utilization of the services rendered by each further indivisible part of one agent requires full utilization of the further indivisible parts of the other imperfectly divisible complementary factors. Then increasing production of an aggregate of further indivisible factors from a partial to a more complete utilization of their productive capacity requires merely an increase in the quantity of p , the perfectly divisible factors. However, one must guard

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 be 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 reasonable⁴ 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 plant 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 in 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 of 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 outweigh 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 are 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 extent 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 are 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 if 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 in 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 well 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 sI . 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 *Sozialpolitik*. 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 Bismarck 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 license¹⁸ 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.

knowledge 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 big 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 $3s$. 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 does 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. Catalactics, 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 become 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 conducting 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 in 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. Economics 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

²⁵Cf. 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 incapable 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 $2p$ 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.