HUMAN ACTION

by Ludwig von Mises, 4th edition (1996)

PART FOUR

CATALLACTICS OR ECONOMICS OF THE MARKET SOCIETY

XVIII. ACTION IN THE PASSING OF TIME, && 5-9

5. The Convertibility of Capital Goods

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

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

dedicated to definite processes of production. The businessman's distinction between fixed capital and circulating capital is a difference of degree, not of kind. Everything that is valid with regard to fixed capital is also valid, although to a smaller degree, with regard to circulating capital. All capital goods have a more or less specific character. Of course, with many of them it is rather unlikely that a change in wants and plans will make them entirely useless.

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

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

It is expedient to substitute the notion of the convertibility of capital goods for the misleading distinction between fixed and free or circulating capital. The convertibility of capital goods is the opportunity offered to adjust their utilization to a change in the data of production. Convertibility is graduated. It is never perfect, i.e., present with regard to all possible changes in the data. In the case of absolutely specific factors it is entirely absent. As the conversion of capital goods from the employment originally planned to other employments becomes necessary through the emergence of unforeseen changes in the data, it is impossible

to speak of convertibility in general without reference to changes in the data which have already occurred or are expected. A radical change in the data could make capital goods previously considered to be easily convertible either not convertible at all or convertible only with difficulty.

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

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

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

sense alone one may say that the owner of ready cash owns liquid funds and is free.

6. The Influence of the Past Upon Action

The more the accumulation of capital goods proceeds, the greater becomes the problem of convertibility. The primitive methods of farmers and handicraftsmen of earlier ages could more easily be adjusted to new tasks than modern capitalist methods. But it is precisely modern capitalism that is faced with rapid changes in conditions. Changes in technological knowledge and in the demand of the consumers as they occur daily in our time make obsolete many of the plans directing the course of production and raise the question whether or not one should pursue the path started on.

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

We may picture to ourselves the image of how things would be if, equipped with our present knowledge of natural resources, geography, technology, and hygienics, we had arranged all processes of production and manufactured all capital goods accordingly. We would have located the centers of production in other places. We would have populated the earth's surface in a different way. some areas which are today densely inhabited and full of plants and farms would be less occupied. We would have assembled more people and more shops and farms in other areas. All establishments would by equipped with the most efficient machines and

tools. Each of them would be the size required for the most economical utilization of its capacity of production. In the world of our perfect planning there would be no technological backwardness, no unused capacity to produce, and no avoidable shipping of men or of goods. The productivity of human exertion would far surpass that prevailing in our actual, imperfect state.

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

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

The fact that not every technological improvement is instantly applied in the whole field is not more conspicuous than the fact that not everybody throws away his old car or his old clothes as soon as a better car is on the

market or new patterns become fashionable. In all such things people are motivated by the scarcity of goods available.

A new machine, more efficient than those used previously, is constructed. Whether or not the plants equipped with the old, less efficient machines will discard them in spite of the fact that they are still utilizable and replace them by the new model depends on the degree of the new machine's superiority. Only if this superiority is great enough to compensate for the additional expenditure required, is the scrapping of the old equipment economically sound. Let *p* be the price of the new machine, *q* the price that can be realized by selling the old machine as scrap iron, *a* the cost of producing one unit of product by the old machine, *b* the cost of producing one unit of product by the new machine without taking into account the costs required for its purchase. Let us further assume that the eminence of the new machine consists merely in a better utilization of raw material and labor employed and not in manufacturing a greater quantity of products and that thus the annual output *z* remains unchanged. Then the replacement of the old machine by the new one is advantageous if the yield *z* (*a*-*b*) is large enough to make good for the expenditure of *p* - *q*. We may disregard the writing off of depreciation in assuming that the annual quotas are not greater for the new machine than for the old one. The same considerations hold true also for the transfer of an already existing plant from a place in which conditions of production are less favorable to a location offering more favorable conditions.

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

The distinction between technological perfection and economic expediency is not, as romantic engineers would have us believe, a feature of capitalism. It is true that only economic calculation as possible solely in a market economy gives the opportunity to establish all the computations required for the cognition of the relevant facts. A socialist management would not be in a position to ascertain the state of affairs by arithmetical methods. It would therefore not know whether or not what it

plans and puts into operation is the most appropriate procedure to employ the means available for the satisfaction of what it considers to be the most urgent of the still unsatisfied wants of the people. But if it were in a position to calculate, it would not proceed in a way different from that of the calculating businessman. It would not squander scarce factors of production for the satisfaction of wants deemed less urgent if this would prevent the satisfaction of more urgent wants. It would not hurry to scrap still utilizable production facilities if the investment required would impair the expansion of the production of more urgently needed goods.

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

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

There prevails a universal tendency for all industries to move to those locations in which the potentialities for production are most propitious. In the unhampered market economy this tendency is slowed down as much as due consideration to the inconvertibility of scarce capital goods requires. This historical element does not give a permanent superiority to the old industries. It only prevents the waste originating from investments which bring about unused capacity of still utilizable production facilities on the one hand and a restriction of capital goods available for the satisfaction of unsatisfied wants on the other hand. In the absence of tariffs the migration of industries is postponed until the capital goods invested in the old plants are worn out or become obsolete by technological improvements which are so momentous as to necessitate their replacement by new equipment. The industrial history of the United States provides numerous examples of the shifting, within the boundaries of the country, of centers of industrial production which was not fostered by any protective measures on the part of the authorities. The infant industries argument is no less spurious than all the other arguments advanced in favor of protection.

Another popular fallacy refers to the alleged suppression of useful patents. A patent is a legal monopoly granted for a limited number of years to the inventor of a new contrivance. At this point we are not concerned with the question whether or not it is a good policy to grant such exclusive privileges to inventors[1].We have to deal only with the assertion that "big business" misuses the patent system to withhold from the public benefits it could derive from technological improvement.

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

The conditions under which it is economical to substitute new improved equipment for still utilizable older tools have been pointed out above. If

[1] Cf. above, pp. 385-386, and below, pp. 680-681.

these conditions are absent, it does not pay, either for private enterprise in a market economy or for the socialist management of a totalitarian system, to adopt the new technological process immediately. The new machinery to be produced for new plants, the expansion of already existing plants and the replacement of old equipment worn out will be effected according to the new design. But the still utilizable equipment will not be scrapped. The new process will be adopted only step by step. The plants equipped with the old devices are for some time still in a position to stand the competition of those equipped with the new ones. Those questioning the correctness of this statement should ask themselves whether they always throw away their vacuum cleaners or radio sets as soon as better models are offered for sale.

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

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

1. The economic significance of the innovation is not yet recognizable.

2. The innovation is obviously useless. But the firm believes that it could develop it in such a way as to make it useful.

3. The immediate application of the innovation does not pay. But the firm intends to apply it later when replacing its worn-out equipment.

4. The firm wants to encourage the inventor to continue his research in spite of the fact that up to now his endeavors have not resulted in a practically utilizable innovation.

5. The firm wants to placate litigious inventors in order to spare the money, time, and nervous strain which frivolous infringement suits bring about.

6. The firm resorts to hardly disguised bribery or yields to veiled blackmail when paying for quite useless patents to officers, engineers, or other influential personnel of firms or institutions which are its customers or potential customers.

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

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

fact that large sums have been wasted for the purchase of quite useless patent rights and for fruitless ventures to apply them in practice.

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

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

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

Thus the degree of convertibility of the supply of capital goods available affects all decisions concerning production and consumption. The smaller the degree of convertibility, the more realization of technological improvement is delayed. Yet it would be absurd to refer to this retarding effect as irrational and antiprogressive. To consider, in planning action, all the advantages and disadvantages expected and to weigh them against one another is a manifestation of rationality. Not the soberly calculating businessman, but the romantic technocrat is to blame for a delusive incomprehension of reality. What slows down technological improvement

is not the imperfect convertibility of capital goods, but their scarcity. We are not rich enough to renounce the services which still utilizable capital goods could provide. The fact that a supply of capital goods is available does not check progress; it is, on the contrary, the indispensable condition of any improvement and progress. The heritage of the past embodied in our supply of capital goods is our wealth and the foremost means of further advancement in well-being. It is true we would be still better off if our ancestors and we ourselves in our past actions had succeeded in better anticipating the conditions under which we must act today. The cognizance of this explains many phenomena of our time. But it does not cast any blame upon the past nor does it show any imperfection inherent in the market economy.

7. Accumulation, Maintenance and Consumption of Capital

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

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

The intention of preserving the available supply of capital goods in full power or of increasing it could also direct the actions of men who did not have the mental tool of economic calculation. Primitive fishermen and hunters were certainly aware of the difference between maintaining their tools and devices in good shape and serviceableness and wearing them out without providing for adequate replacements. An old-fashioned peasant, committed to traditional routine and ignorant of accountancy, knows very well the significance of maintaining intact his live and dead stock. Under the simple conditions of a stationary or slowly progressing

economy it is feasible to operate successfully even in the absence of capital accounting. There the maintenance of a by and large unchanged supply of capital goods can be effected either by current production of pieces destined to replace those worn out or by the accumulation of a fund of consumers' goods which makes it possible to devote effort at a later time toward the replacement of such capital goods without being forced to restrict consumption temporarily. But a changing industrial economy cannot do without economic calculation and its fundamental concepts of capital and income.

Conceptual realism has muddled the comprehension of the concept of capital. It has brought about a mythology of capital[2]. An existence has been attributed to "capital," independent of the capital goods in which it is embodied. Capital, it is said, reproduces itself and thus provides for its own maintenance. Capital, says the Marxian, hatches out profit. All this is nonsense.

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

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

Additional capital can be accumulated only by saving, i.e., a surplus of production over consumption. Saving may consist in a restriction of consumption. But it can also be brought about, without a further restriction in consumption and without a change in the input of capital

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

goods, by an increase in net production. Such an increase can appear in different ways:

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

2. People have succeeded in rendering some production processes more fruitful without investing more capital goods and without a further lengthening of the period of production.

3. Institutional disturbances of production activities have become less frequent. The losses caused by war, revolutions, strikes, sabotage, and other crimes have been reduced.

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

Capital is always accumulated by individuals or groups of individuals acting in concert, never by the Volkswirtschaft or the society[3]. It may happen that while some actors are accumulating additional capital, others are at the same time consuming capital previously accumulated. If these two processes are equal in amount, the sum of the capital funds available in the market system remains unaltered and it is as if no change in the total amount of capital goods available had occurred. The accumulation of additional capital on the part of some people merely removes the necessity of shortening the period of production of some processes. But no further adoption of processes with a longer period of production becomes feasible. If we look at affairs from this angle we may say that a transfer of capital took place. But one must guard oneself against confusing this notion of capital transfer with the conveyance of property from one individual or group of individuals to others.

The sale and purchase of capital goods and the loans granted to business are not as such capital transfer. They are transactions which are instrumental in conveying the concrete capital goods into the hands of those entrepreneurs who want to employ them for the performance of

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

definite projects. They are only ancillary steps in the course of a long-range sequence of acts. Their composite effect decides the success or failure of the whole project. But neither profit nor loss directly brings about either capital accumulation or capital consumption. It is the way in which those in whose fortune profit or loss occurs arrange their consumption that alters the amount of capital available.

Capital transfer can be effected both without and with a conveyance in the ownership of capital goods. The former is the case when one man consumes capital while another man independently accumulates capital in the same amount. The latter is the case if the seller of capital goods consumes the proceeds while the buyer pays the price out of a nonconsumed--saved--surplus of net proceeds over consumption.

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

8. The Mobility of the Investor

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

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

Stock speculation cannot undo past action and cannot change anything with regard to the limited convertibility of capital goods already in existence. What it can do is to prevent additional investment in branches and enterprises in which, according to the opinion of the speculators, it would be misplaced. It points the specific way for a tendency, prevailing in the market economy, to expand profitable production ventures and to restrict the unprofitable. In this sense the stock exchange becomes simply "the market," the focal point of the market economy, the ultimate device to make the anticipated demand of the consumers supreme in the conduct of business.

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

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

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

essential requirements, he must replace them by funds borrowed. The grain of truth in the fable of the mobility of circulating capital is the fact that it is possible for an investor to avoid losses menacing his circulating capital independently of the avoidance of such losses menacing his fixed capital. However, the process of capital flight is in both instances the same. It is a change in the person of the investor. The investment itself is not affected; the capital concerned does not emigrate.

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

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

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

Popular opinion finds something objectionable in every possible aspect of stock market transactions. If prices are rising, the speculators are denounced as profiteers who appropriate to themselves what by rights belongs to other people. If prices drop, the speculators are denounced for squandering the nation's wealth. The profits of the speculators are vilified as robbery and theft at the expense of the rest of the nation. It is insinuated that they are the cause of the public's poverty. It is customary to draw a distinction between this dishonest bounty of the jobbers and the profits of the manufacturer who does not merely gamble but supplies the consumers. Even financial writers fail to realize that stock exchange transactions produce neither profits nor losses, but are only the consummation of profits and losses arising in trading and manufacturing. These profits and losses, the outgrowth of the buying public's approval or disapproval of the investments effected in the past, are made visible by the stock market. The turnover on the stock market does not affect the public. It is, on the contrary, the public's reaction to the mode in which investors arranged production activities that determines the price structure of the securities market. It is ultimately the consumers' attitude that makes some stocks rise, others drop. Those not saving and investing neither profit nor lose on account of fluctuations in stock exchange quotations. The trade on the securities market merely decides which investors shall earn profits and which shall suffer losses[4].

9. Money and Capital; Saving and Investment

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

Those who have seen in this fact something puzzling and contradictory have been misled by a misconstruction of monetary calculation and capital accounting. They attempt to assign to capital accounting tasks which it can never achieve. Capital accounting is a mental tool of calculating and computing suitable for individuals and groups of

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

individuals acting in the market economy. Only in the frame of monetary calculation can capital become computable. The sole task that capital accounting can perform is to show to the various individuals acting within a market economy whether the money equivalent of their funds devoted to acquisitive action has changed and to what extent. For all other purposes capital accounting is quite useless.

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

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

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

not change, this conduct on the part of the saver will not directly influence the accumulation of capital and its employment for an expansion of production[5]. The effect of our saver's saving, i.e., the surplus of goods produced over goods consumed, does not disappear on account of his hoarding. The prices of capital goods do not rise to the height they would have attained in the absence of such hoarding. But the fact that more capital goods are available is not affected by the striving of a number of people to increase their cash holdings. If nobody employs the goods--the nonconsumption of which brought about the additional saving--for an expansion of his consumptive spending, they remain as an increment in the amount of capital goods available, whatever their prices may be. Tho two processes--increased cash holding of some people and increased capital accumulation--take place side by side.

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

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

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

of goods produced and not consumed, of goods available for further production activities. A man's savings are always embodied in concrete capital goods.

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