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Dr. Hayek on Money and Capital

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Source: *The Economic Journal*, Vol. 42, No. 165 (Mar., 1932), pp. 42-53

Published by: [Wiley](#) on behalf of the [Royal Economic Society](#)

Stable URL: <http://www.jstor.org/stable/2223735>

Accessed: 05/08/2013 13:49

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DR. HAYEK ON MONEY AND CAPITAL ¹

To deal with the theory of money, from its doctrinal history down to the inevitable practical proposals, touching upon some of the most perplexing parts of the subject, and all this in four lectures, must have been a feat of endurance on the part of the audience as much as of the lecturer. For, however peculiar, and probably unprecedented, their conclusions may be, there is one respect in which the lectures collected in this volume fully uphold the tradition which modern writers on money are rapidly establishing, that of unintelligibility. The fault must lie in the subject itself, or in the theories which are directed to elucidate it, for this notoriously is the case even with writers otherwise the most lucid. And Dr. Hayek himself in an excellent introductory lecture, in which he traces in the history of thought the sources of his own doctrine, is a model of clearness.

Taken as a whole, there is this to be said in favour of the book—that it is highly provocative. Its one definite contribution is the emphasis it puts on the study of the effects of monetary changes on the relative prices of commodities, rather than on movements of the general price level on which attention has almost exclusively been focussed by the old quantity theory. But in every other respect the inescapable conclusion is that it can only add to the prevailing confusion of thought on the subject.

The starting-point and the object of Dr. Hayek's inquiry is what he calls "neutral money"; that is to say, a kind of money which leaves production and the relative prices of goods, including the rate of interest, "undisturbed," exactly as they would be if there were no money at all.

This method of approach might have something to recommend it, provided it were constantly kept in mind that a state of things in which money is "neutral" is identical with a state in which there is no money at all: as Dr. Hayek once says, if we "eliminate all monetary influences on production . . . we may treat money as non-existent" (p. 109). Thus the parallel inquiry into "neutral money" and various kinds of real money

¹ *Prices and Production*. By Friedrich A. Hayek. London: George Routledge and Sons, 1931. Pp. xv + 112. 6s.

would resolve itself into a comparison between the conditions of a specified non-monetary economy and those of various monetary systems.

We therefore might expect that Dr. Hayek would, in discussing a number of assumed cases in which equilibrium is disturbed, compare the results in a moneyless economy with the corresponding results obtained under various monetary systems, or policies. This would bring out which are the essential characteristics common to every kind of money, as well as their differences, thus supplying the elements for an estimate of the merits of alternative policies.

But the reader soon realises that Dr. Hayek completely forgets to deal with the task which he has set himself, and that he is only concerned with the wholly different problem of proving that only one particular banking policy (that which maintains constant under all circumstances the quantity of money multiplied by its velocity of circulation) succeeds in giving full effect to the "voluntary decisions of individuals," especially in regard to saving, whilst under any other policy these decisions are "distorted" by the "artificial" interference of banks. Being entirely unaware that it may be doubted whether under a system of barter the decisions of individuals would have their full effects, once he has satisfied himself that a policy of constant money would achieve this result, he identifies it with "neutral money"; and finally, feeling entitled to describe that policy as "natural," he takes it for granted that it will be found desirable by every right-thinking person. So that "neutral" money, from being in the first lecture the object of theoretical analysis (p. 28), is shown in the body of the book to be "not merely entirely harmless, but in fact the only means of avoiding misdirections of production" (p. 89), and in the end becomes "our maxim of policy" (p. 106).

If Dr. Hayek had adhered to his original intention, he would have seen at once that the differences between a monetary and a non-monetary economy can only be found in those characteristics which are set forth at the beginning of every text-book on money. That is to say, that money is not only the medium of exchange, but also a store of value, and the standard in terms of which debts, and other legal obligations, habits, opinions, conventions, in short all kinds of relations between men, are more or less rigidly fixed. As a result, when the price of one or more commodities changes, these relations change in terms of such commodities; while if they had been fixed in commodities, in some

specified way, they would have changed differently, or not at all. Upon this basis it would be possible to find the monetary policy the effects of which are the nearest to a given non-monetary system.

It would be idle to rehearse these platitudes had not Dr. Hayek completely ignored them in his arguments. The money which he contemplates is in effect used purely and simply as a medium of exchange. There are no debts, no money-contracts, no wage-agreements, no sticky prices in his suppositions. Thus he is able to neglect altogether the most obvious effects of a general fall, or rise, of prices. This attitude, which amounts to assuming away the very object of the inquiry, appears to originate in a well-founded objection to the vagueness of the conception of "the general price-level" understood as anything different from one out of many possible index-numbers of prices, and in the opinion that such a conception can have no place in a theory of money. Such a theory, according to him, ought simply to consider the influence of money on the relative prices of commodities—which is excellent, provided that money itself is one of the commodities under consideration; but Dr. Hayek goes further and rejects not only the notion of general price-level but every notion of the value of money in any sense whatever (see *e.g.* pp. 7 and 27). Having thus reduced money to utter insignificance, it is easy for Dr. Hayek to prove to his own satisfaction that, if its quantity is kept constant,¹ money is "neutral" in the sense that after a disturbance, such as an increase of saving, the new equilibrium of production and of relative prices is reached as smoothly as if no money existed. And, since he also impartially deprives money of its essence when he considers alternative monetary policies, it is inevitable that money should again be found to be "neutral," and the effects should be identical, that is to say, equally immaterial. But Dr. Hayek invariably finds, when he comes to compare the effects of alternative policies in regulating this emasculated money, that there is an all-important difference in the result, and that it is "neutral" only if it is kept constant in quantity, whilst if the quantity is changed, the most disastrous effects follow.

The reader is forced to conclude that these alleged differences can only arise, either from an error of reasoning, or from the

¹ I follow Dr. Hayek's practice of using "the quantity of money" as short for "the quantity of money multiplied by its velocity of circulation"; although it is a dangerous omission which leads him to overlook that the velocity is bound to change as the direct result of a change in prices.

unwitting introduction, in working out the effects of one of the two systems compared, of some irrelevant non-monetary consideration, which produces the difference, attributed to the properties of the system itself. The task of the critic, therefore, is the somewhat monotonous one of discovering, for each step of Dr. Hayek's parallel analysis, which is the error or irrelevancy which causes the difference. This will be done only for one or two of these cases in the course of the present review. But from the beginning it is clear that a methodical criticism could not leave a brick standing in the logical structure built up by Dr. Hayek.

A considerable part of the book is taken up by preliminaries about the relations between the quantity of capital and the length of the process of production and about the proportions in which the flow of money is divided between the purchase of consumers' goods and the purchase of producers' goods. Dr. Hayek as it were builds up a terrific steam-hammer in order to crack a nut—and then he does not crack it. Since we are primarily concerned in this review with the nut that is not cracked, we need not spend time criticising the hammer. The part which its description plays in the book is little more than that of obscuring the main issue; a maze of contradictions makes the reader so completely dizzy, that when he reaches the discussion of money he may out of despair be prepared to believe anything.¹

The only point that need be retained is that Dr. Hayek conceives of saving as an increase in the proportion of the total flow of money that is directed to the purchase of producers' goods, as opposed to the proportion that is directed to the purchase of consumers' goods. When we start from the usual point of view, which regards consumers as deciding to save a part of their *net* income, the accumulation of capital proceeds, and no equilibrium can be established, until the consumers revert to the

¹ The essential contradiction is that Dr. Hayek must both assume that the "consumers" are the same individuals as the "entrepreneurs," and that they are distinct. For only if they are identical can the consumers' decisions to save take the form of a decision to alter the "proportions" in which the total gross receipts are divided between the purchase of consumers' goods and the purchase of producers' goods; and only if they are distinct has the contrast between "credits to producers," which are used to buy producers' goods, and "credits to consumers," which are used to buy consumers' goods, any definite meaning. As a result we are alternately told that the "decisions to save" are taken by "the consumers" (p. 46), by "the entrepreneurs" (p. 45), or even by "the industries" (p. 58). This makes a pair with the kindred though distinct contradiction of assuming in the same context that intermediate products never change hands against money (p. 38), and that they change hands against money in equal intervals of time (pp. 41–42).

practice of consuming the whole of their net income. But when we start, with Dr. Hayek, from the *gross* receipts, saving means a decision to change the proportions in which those receipts are spent on producers' and consumers' goods; accumulation then proceeds for a limited period, after which equilibrium is reached, although the new proportions are permanently maintained; though this, it may be noticed, applies only to a very peculiar case, and not, as Dr. Hayek seems to believe, in general; but since, even within the limits of that case, Dr. Hayek's further conclusions appear to be invalid, the point need not detain us any longer.¹

The central topic of the book is the analysis of the accumulation of capital in a monetary economy. Accumulation, Dr. Hayek says, can take place in two ways: "either as a result of changes in the volume of voluntary saving, or as a result of a change in the quantity of money which alters the funds at the disposal of the entrepreneurs for the purchase of producers' goods."

If savings are "voluntary," consumers place certain sums of money in the hands of the entrepreneurs, who use them for lengthening the process of production, and thus capital accumulates. Skipping over the difficulties of the transition, Dr. Hayek concludes that the accumulation comes to a stop when saving ceases, and a new equilibrium is reached, where the same quantity of labour uses a larger quantity of capital, the output of consumption goods is larger and all prices, he assumes, are lower. The effect thus realised "is one which fulfils the object of saving and investing, and is identical with the effect which would have been produced if the savings were made in kind instead of in money" (p. 49).

His next case is that of "forced saving." If, when no savings are being made, the banks expand the circulation, by means of "credits granted to producers," the initial effects will be the same as those of voluntary saving: the entrepreneurs will use the additional funds placed at their disposal to lengthen the process of production, and capital will be accumulated. An appropriate degree of inflation through loans "to producers" will bring about exactly the same results as voluntary saving;

¹ The extreme instance of integrated firms (pp. 59-60), if nothing else, should have warned Dr. Hayek that his method is not applicable in general, and put him on the track to finding its limits, which are extremely narrow; for in that case he is driven to assume that the money saved is hoarded for a time, thus directly contradicting his postulate that the quantity of money multiplied by its velocity is constant.

and a new situation will be reached, similar to it in all respects, except that all prices will be higher; higher, that is to say, as compared with the similar situation due to voluntary savings, but not necessarily, it should be noticed, as compared with the initial situation; on this latter basis, some prices may be higher and some lower.

It would appear that the parallelism is due to our having ignored the secondary effects of a general fall or rise of prices. But Dr. Hayek has undertaken to avoid the concept of "value of money"; and at the same time he must impress us with the benefits of voluntary saving, and the evils of inflation. He therefore accepts the above conclusions, as far as they go, and must now try to find in a different set of considerations the reasons why inflation has not the same effects as saving.

The true difference between the two cases is, according to him, that the change in the structure of production brought about by saving is permanent, being due to the "voluntary decisions of individuals"; whereas the same change, if due to inflation, is "forced," and therefore the consumers, as soon as inflation ceases and their freedom of action is restored, will proceed to consume all the capital accumulated against their will, and re-establish the initial position.

That the position reached as the result of "voluntary saving" will be one of equilibrium (under Dr. Hayek's tacit assumption that the consequent fall in the rate of interest is irrelevant to the equilibrium) is clear enough; though the conclusion is not strengthened by the curious reason he gives for it.¹

But equally stable would be that position if brought about by inflation; and Dr. Hayek fails to prove the contrary. In the case of inflation, just as in that of saving, the accumulation of capital takes place through a reduction of consumption. "But now this sacrifice is not voluntary, and is not made by those who will reap the benefit from the new investments. . . . There can be no doubt that, if their money receipts should rise again [and this rise is bound to happen, as Dr. Hayek promises to prove] they would immediately attempt to expand consumption

¹ The reason given is that "since, after the change had been completed, these persons [i.e. the savers] would get a greater proportion of the total real income, they would have no reason" to consume the newly acquired capital (p. 52). But it is not necessarily true that these persons will get a greater *proportion* of the total real income, and if the fall in the rate of interest is large enough they will get a *smaller* proportion; and anyhow it is difficult to see how the *proportion* of total income which falls to them can be relevant to the "decisions of individuals." Dr. Hayek, who extols the imaginary achievements of the "subjective method" in economics, often succeeds in making patent nonsense of it.

to the usual proportion," that is to say, capital will be reduced to its former amount; "such a transition to less capitalistic methods of production necessarily takes the form of an economic crisis" (p. 53).

As a moment's reflection will show, "there can be no doubt" that nothing of the sort will happen. One class has, for a time, robbed another class of a part of their incomes; and has saved the plunder. When the robbery comes to an end, it is clear that the victims cannot possibly consume the capital which is now well out of their reach. If they are wage-earners, who have all the time consumed every penny of their income, they have no wherewithal to expand consumption. And if they are capitalists, who have not shared in the plunder, they may indeed be induced to consume now a part of their capital by the fall in the rate of interest; but not more so than if the rate had been lowered by the "voluntary savings" of other people.

We should expect that Dr. Hayek, having satisfied himself that the "artificial stimulant" of inflation in the shape of producers' credits cannot do any good and cause an accumulation of capital, would conclude that in its opposite form of consumers' credits it is equally incapable of doing harm by preventing voluntary accumulation. But now that he sees his chance he cannot resist the temptation and must let the damned thing run its full course of destruction.

Accordingly, in his next case he finds that if, when the consumers decide to save, additional money is issued through consumers' credits to the extent required for re-establishing the former proportion between the demand for consumers' goods and the demand for producers' goods, "the only effect of such an increase of consumers' money incomes would be to frustrate the effect of saving" (p. 57). And from this it follows that inflation through consumers' credits, when no voluntary savings were being made, *would* be effective in decreasing capital. Thus Dr. Hayek will have it both ways.

If this were not sufficient to show that Dr. Hayek's discussion is utterly irrelevant to money and to inflation, one or two further cases which he has overlooked might be considered. Thus, on his assumptions, if the banks increased the circulation but apportioned the additional money between consumers' and producers' credits so as not to disturb the initial "proportions," nothing would happen. And, on the other hand, if, as their outstanding loans fall due, they changed the "proportions" by increasing the quantity of producers' credits to the same extent as they

decreased the quantity of consumers' credits, the effects would be the same as in the case of the "inflation" effected through producers' credits although the circulation would remain unchanged; and conversely for consumers' credits.

What has happened is simply that, since money has been thoroughly "neutralised" from the start, whether its quantity rises, falls, or is kept steady, makes not the slightest difference; at the same time an extraneous element, in the shape of the supposed power of the banks to settle the way in which money is spent, has crept into the argument and has done all the work. As Voltaire says, you can kill a flock of sheep by incantations, plus a little poison.

Dr. Hayek's theory of the relation of money to the rate of interest is mainly given by way of criticism and development of the theory of Wicksell. He states his own position as far as it agrees with Wicksell's as follows:—"In a money economy, the actual or money rate of interest may differ from the equilibrium or natural rate, because the demand for and the supply of capital do not meet in their natural form but in the form of money, the quantity of which available for capital purposes may be arbitrarily changed by the banks."¹

An essential confusion, which appears clearly from this statement, is the belief that the divergence of rates is a characteristic of a money economy: and the confusion is implied in the very terminology adopted, which identifies the "actual" with the "money" rate, and the "equilibrium" with the "natural" rate. If money did not exist, and loans were made in terms of all sorts of commodities, there would be a single rate which satisfies the conditions of equilibrium, but there might be at any one moment as many "natural" rates of interest as there are commodities, though they would not be "equilibrium" rates. The "arbitrary" action of the banks is by no means a necessary condition for the divergence; if loans were made in wheat and farmers (or for that matter the weather) "arbitrarily changed" the quantity of wheat produced, the actual rate of interest on loans in terms of wheat would diverge from the rate on other commodities and there would be no single equilibrium rate.

In order to realise this we need not stretch our imagination and think of an organised loan market amongst savages bartering deer for beavers. Loans are currently made in the present world

¹ Pp. 20-21. "Equilibrium rate" is the term Dr. Hayek proposes to substitute for Wicksell's "natural rate."

in terms of every commodity for which there is a forward market. When a cotton spinner borrows a sum of money for three months and uses the proceeds to purchase spot, a quantity of raw cotton which he simultaneously sells three months forward, he is actually "borrowing cotton" for that period. The rate of interest which he pays, per hundred bales of cotton, is the number of bales that can be purchased with the following sum of money: the interest on the money required to buy spot 100 bales, plus the excess (or minus the deficiency) of the spot over the forward prices of the 100 bales.

In equilibrium the spot and forward price coincide, for cotton as for any other commodity; and all the "natural" or commodity rates are equal to one another, and to the money rate. But if, for any reason, the supply and the demand for a commodity are not in equilibrium (*i.e.* its market price exceeds or falls short of its cost of production), its spot and forward prices diverge, and the "natural" rate of interest on that commodity diverges from the "natural" rates on other commodities. Suppose there is a change in the distribution of demand between various commodities; immediately some will rise in price, and others will fall; the market will expect that, after a certain time, the supply of the former will increase, and the supply of the latter fall, and accordingly the forward price, for the date on which equilibrium is expected to be restored, will be below the spot price in the case of the former and above it in the case of the latter; in other words, the rate of interest on the former will be higher than on the latter. It is only one step to pass from this to the case of a non-money economy, and to see that when equilibrium is disturbed, and during the time of the transition, the "natural" rates of interest on loans in terms of the commodities the output of which is increasing must be higher, to various extents, than the "natural" rates on the commodities the output of which is falling; and that there may be as many "natural" rates as there are commodities.¹ It will be noticed that, under free competition, this divergence of rates is as essential to the effecting of the transition as is the divergence of prices from the costs of production; it is, in fact, another aspect of the same thing.

This applies as much to an increase of saving, which Dr. Hayek regards as equivalent to a shift in demand from consumers' to producers' goods, as to changes in the demand for or the supply

¹ And, for each commodity, there will be different rates for loans of different lengths.

of any other commodities. In criticising Wicksell for having prescribed as the criterion of "neutral" money the incompatible aims of a stable price-level and of equality of the money rate with the natural rate, he says that in a society in which there are additions to the supply of savings, "to keep the money rate of interest at the level of the equilibrium rate would mean that in times of expansion of production the price-level would fall. To keep the general price-level steady would mean, in similar circumstances, that the loan rate of interest would have to be lowered below the equilibrium rate. The consequences would be what they always are when the rate of investment exceeds the rate of saving" (p. 24).

But in times of expansion of production, due to additions to savings, there is no such thing as an equilibrium (or unique natural) rate of interest, so that the money rate can neither be equal to, nor lower than it: the "natural" rate of interest on producers' goods, the demand for which has relatively increased, is higher than the "natural" rate on consumers' goods, the demand for which has relatively fallen. This, however, though it meets, I think, Dr. Hayek's criticism, is not in itself a criticism of Wicksell. For there is a "natural" rate of interest which, if adopted as bank-rate, will stabilise a price-level (*i.e.* the price of a composite commodity): it is an average of the "natural" rates of the commodities entering into the price-level, weighted in the same way as they are in the price-level itself. What can be objected to Wicksell is that such a price-level is not unique, and for *any* composite commodity arbitrarily selected there is a corresponding rate that will equalise the purchasing power, in terms of that composite commodity, of the money saved and of the additional money borrowed for investment. Each of these monetary policies will give the same results in regard to saving and borrowing as a particular non-monetary economy—that is to say, an economy in which the selected composite commodity is used as the standard of deferred payments. It appears, therefore, that these non-monetary economies retain the essential feature of money, the singleness of the standard; and we are not much the wiser when we have been shown that a monetary policy is "neutral" in the sense of being equivalent to a non-monetary economy which differs from it almost only by name.

As for the other conceivable and more truly non-monetary economies, in which different transactions are fixed in terms of different standards, there are no monetary policies which can exactly reproduce their results. Which perhaps matters very little,

since the essential consequence of a divergence between the demand and the supply of consumption goods is common to monetary and non-monetary economies. In so far as the consumption goods saved are perishable, they must be consumed by somebody or go entirely to waste; and in so far as they are durable, and can be stored up, they are partly wasted for a time and partly consumed by others than the savers (since their spot price must fall to make storing worth while). With or without money, if investment and saving have not been planned to match, an increase of saving must prove to a large extent "abortive." On the other hand, the conception underlying the inquiry into neutral money appears to be this: when savings take place in a non-monetary economy a stream of finished goods, which might be consumed, is diverted from consumption into investment—the problem is to find a monetary policy which does not interfere with the stream. But the stream is a delusion. When it flows safely into investment, it has never flown out of the savers' hands in the shape of consumers' goods—production must have been so planned ahead as not to produce the unwanted goods; and when the saved goods flow out of the consumers' hands, they do not reach investment unimpaired. Thus, to borrow a distinction due to Mr. Robertson, savings may be the "inducement" but cannot in general be the "source" of investment.

Dr. Hayek's own solution of the problem as opposed to that of Wicksell is contained in the following passage, which should be read keeping in mind that by "supply of capital" he means "voluntary saving," and that "amount of the circulation" is an abbreviation for amount multiplied by the velocity of circulation. "It is perfectly clear that, in order that the supply and demand for real capital should be equalised, the banks must not lend more or less than has been deposited with them as savings. And this means naturally that they must never change the amount of their circulation" (p. 23).

We are kept languishing for the clue to this "perfectly clear" mystery until, at the very end of the book, it flashes upon us in Dr. Hayek's definition of real capital: "'Real capital' stands here as the only short (but probably misleading) expression which I can find for that part of the total *money* stream which is available for the purchase of producers' goods" (p. 108, my italics).¹

¹ The doubt that the definition may apply only to a different context is dispelled by its occurring in a footnote attached to the following text:—"The 'natural' or equilibrium rate of interest which would exclude all demands for capital which exceed the supply of real capital. . . ."

Misleading indeed ! The epithets *money* and *real* (applied to wages, costs, incomes, etc.) having always been used as opposites, Dr. Hayek coolly "defines" them as synonyms. And he is the first to be misled, for he uses this argument as a criticism of Wicksell, who by real capital means real capital and not money capital. And he is also misled into believing that he has proved something about "neutral" money, when he is far away from the barter economy in which real capital can be anything but a quantity of money.

His statement might now be translated back into ordinary language as follows :—"In order that the sum of money borrowed for investment should be equal to the sum of money saved, bank loans must increase neither more nor less than the amount that is deposited with them as savings." And finally, to complete the picture, we should add two modifications which Dr. Hayek has introduced in the (later) German version of his book.¹ The first is an exception : the banks must not lend more than has been deposited with them as savings "or at most such amounts in addition which, though saved, have not been invested" (p. 26). The second is a new definition of savings : when some firms are making losses, "only the excess of savings over the amount necessary to balance these losses, or *net savings*, can be regarded as an increase of the demand for means of production ; and when in what follows we speak of savings we mean always and exclusively savings in this sense" (p. 49).

Thus defined and transformed this will not sound unfamiliar to readers of Mr. Keynes' *Treatise on Money* ; in effect, it appears that Dr. Hayek in running away from his problem of neutral money has landed himself right in the middle of Mr. Keynes' theory. And here this review must stop, for space does not allow of an adequate criticism of the new and rather unexpected position taken up by Dr. Hayek.

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¹ *Preise und Produktion*, Wien, Julius Springer, 1931.