

# The Liquidity of Short-Term Capital

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## I

THE object of this paper is to discuss the question, Can short-term capital remain liquid? The bottom of a great depression is, I feel, a particularly suitable time to investigate this question and to criticise accepted doctrine. In times of prosperity, practical business men would scoff at the thesis, which I wish to put before you, that short-term capital is never really liquid; but in times of depression the majority of savers and owners of capital, and also the majority of bankers, are inclined to admit that there may be "something in it."

In a depression, savers discover from bitter experience that their short-term loans are no longer liquid but *frozen* for at any rate the immediate future, and they therefore become too nervous to invest fresh savings in productive processes, and what Mr. Keynes calls "bearishness" is increased; that is, there is a growing tendency to hoard money or to deposit it with the banks for a short time.

Such a decrease in the supply of capital as is caused by these tendencies has greatly increased the immediate difficulties of the present economic position, and the general scramble to liquidate credits and investments has led to the actual financial and monetary crisis from which we are suffering. It is the object of this paper to deny every existing theory of liquidity; but since, as is well known, economic theory has little effect on economic actions, I need not be afraid that this denial will strengthen the general liquidation mania!

Before expounding a general thesis, I must make clear certain points of terminology. By *liquid*, I do not mean the same thing as Mr. Keynes, who is inclined to consider all goods in process as well as finished goods—whether consumption goods or producers' goods—as liquid, whether they can be sold or not.

\* A paper read before the London Economic Club, July 17th, 1932.

Indeed, Mr. Keynes has defined as liquid capital just that which, according to a German-Hungarian critic,<sup>1</sup> is the least liquid part of working capital; that is, surplus stocks or excess stocks. Now, according to the most important business usage, "liquid" means "*immediately convertible into money.*" Mr. Keynes' usage, therefore, would appear to conflict with the maxim that it is undesirable to use terms in a sense different from the sense in which they are used in everyday life.

But the business usage is by no means free from ambiguity. For there are, in everyday life, many forms of capital which are liquid—in this sense—at one time and not at another. This would appear to be a contradiction in terms. We must, therefore, examine at some length this concept of private liquidity.

It is easy to see that the same reasons which make it impossible to regard fixed capital—buildings, machines and so on—as being liquid, are applicable to the whole problem: the owner of a machine can liquidate this capital only when another investor invests the same amount. The liquidity of the first involves the illiquidity of the second. *Individual liquidity is, therefore, not the same as the liquidity of the whole system.*

This is valid not only for fixed capital but also for working capital. From the point of view of the machine maker, the machine is obviously part of his working capital, but to the buyer it is part of fixed capital. The total liquidity of capital is independent of the ownership of investment goods, since the capital of one man can *never* be regarded as liquid if it is so only when another man is investing and thus tying up a corresponding amount. Goods are liquid in this sense only when they can be *transferred to actual and immediate consumption.* This means that they must be not only ready for consumption but also saleable.

## II

There is only one use for capital; that is, to produce. This concept of "production" embraces all processes which are necessary for the completion of goods and making them ready for immediate consumption; this naturally includes the necessary transport through time and space; that is, all transactions of commerce and speculation.

*Short-term capital* means that the command over purchasing power can be used for production in the above sense only for

<sup>1</sup> Julius Neubauer, in *Schmollers Jahrbuch*, 1932.

a short time. This implies that *the journey from money through production and back again to money* must be very short and quick. At present, we are not concerned with whether this short-term capital is due to temporary saving or a temporary additional bank credit.

Discussions of the question of how short-term capital can be invested so that it is reconvertible into money after a short period, are already very old, and most theorists and practical men cling to the concept of circulating capital as consisting of goods in process and raw materials.

But this concept of the liquidity of all materials contains a paradox in that many of these raw materials are destined to be transformed into *fixed* production goods. For example, iron and coal—which are at first said to be liquid—may, after passing through the various stages of production, become fixed capital in the form of machines. The ability of a producer in a higher stage to set free his working capital depends, therefore, on the willingness and ability of an entrepreneur to invest capital for many years. There is obviously no sense in speaking of the liquidity of the working capital from the point of view of the whole system in such a case.

But even the limitation of the characteristic of liquidity to capital invested in goods which go directly through the whole productive process without becoming fixed, is not justifiable. Even if the invested money returns after every period of production to the individual entrepreneur, this is not the same as saying how long the total period of circulation of capital is—the period needed for the whole course through the stages of production to the final marketable consumption goods.

If we attempt still further to limit the applicability of the term “liquidity” to the use of capital in the stages immediately before the final stage of production of consumption goods, then we must make still further qualifications. Expansion of production in the lowest stages may involve expansion in the higher stages, and this process may not, in a complicated productive system, be finished in time. But since short-term capital can be used only in the shortest possible productions, investment in consumption industries is suitable only in so far as this does not increase the demand for the products of the higher stages.

If we are convinced, by these considerations, that most kinds of investment are not possible without *long-term* capital but that we have found *one* kind of occupation suitable to the invest-

ment of short-term capital, we shall be disappointed by the conclusion that working capital is not really liquid even in this case—save at the expense of reducing the volume of production. For, if we want to maintain the volume of production and output, we cannot liquidate any part of the working capital. I hope it is clear by now that the entrepreneur must reinvest that money which he receives from the sale of his output if he wishes to repeat the same process of production.

Since working capital, according to my definition, is that part of invested capital which may be set free by the *stoppage of production*, it cannot easily be distinguished from fixed capital, in so far as the maintenance of a given volume of production is assumed. When working capital circulates, it is liquid not for repayment, but only for reinvestment. Thus the final liquidation of working capital is possible only at the expense of diminishing or stopping the work of production.

Let us, at this point, restate the cases in which short-term capital can neither *remain* liquid nor *become* liquid after a short period. These are when it is invested either :

- (1) in fixed capital;
- (2) in working capital which is destined to become fixed capital;
- (3) in working capital which is destined to go through a long process of production;
- (4) in working capital in a lower stage of production when this involves an increase in production in the higher stages;
- (5) in working capital in industries in which the output needs to be perpetually maintained.

On the other hand, it seems that we have discovered so far that investment of short-term capital in such a way that it can quickly be liquidated, is possible only when it is used for such temporarily increased production of consumers' goods as does not increase the demand for the products of the higher stages—especially of fixed capital. There is a general belief in the existence of such "self-liquidating" investments. Let me illustrate this kind of investment by means of an example taken from Professor Polak's *Grundzüge der Finanzierung mit Rücksicht auf die Kreditdauer*.<sup>2</sup>

"The current supply of clothes requires that there exists

<sup>2</sup> Berlin-Vienna. 1926. P. 155.

at any moment a stock of raw cotton in the hands of traders, a stock of cotton, raw and in process, and of yarn in the spinning mills, a stock of yarn, semi-manufactured materials and of cloth in the weaving factories, and a stock of cloth in the hands of retailers. Capital is invested by the traders in the stock of raw cotton. This capital has been advanced at short-term by a bank which obtained it from the depositors. Now when the depositors withdraw their money in order to buy cloth, the retailer finds his stock decreasing and orders new cloth from the weavers. The latter order new yarn from the spinners and the spinners have to replenish their stocks of raw cotton. In this way, the demand exercised by the former savers causes the decrease of the traders' stocks of raw cotton, in which their capital has been invested."

Our problem is to discover the degree of probability of the existence of such forms of investment for increased short-term capital. To cautious bankers, who—in England, if not in Central Europe—are supposed only to make advances to finance the sale of goods, this inquiry must seem idle. They would say: "It is quite ridiculous of Mr. Machlup to try to discover theoretically whether our advances are used for self-liquidating investments. We only make advances for such purposes." Let me first defend myself against such objections.

Perhaps you know the saying: "You may think that you give a man bread and housing, but in fact you make his money available to buy beer." You may change it to: "You think you give the borrower an advance against saleable goods, but in fact you make it possible for him to buy new machines." The entrepreneur who receives fresh advances for working capital, in fact has part of his own working capital set free—which was previously needed for circulating capital; so that he can now invest his own funds in fixed capital. Thus, the actual concrete and visible use of a fresh credit does not correspond to the intended use.

A banker once told me that he could avoid such things by refusing credit to any entrepreneur who wished to invest in fixed capital; he could refuse even the harmless documentary credit. Apart from the fact that I do not believe that bankers behave in such a way, this would not alter the problem in the economic system as a whole, for *the new investment which is made possible by the fresh short-term capital may not be in the borrower's own business.* The new credit may possibly set

free old credits which are now repaid and thus free for investment in other places; it may place the entrepreneur in such a position that he needs less credit from his *suppliers* and will, by that means, make the latter able to invest themselves or to extend credits to their other customers who can, in turn, invest; or it may, finally, make it possible for our entrepreneur to give more credits to his own *customers*, and thus enable investments in *their* business or in that of their business friends to take place.

So, you see, *in practice* one can never tell *who* is going to use the credit, and *for what purpose* it will be used. But *in theory* one can tell much more and one can also see deeper. One can inquire into the different possibilities and can understand which kinds of investment are probable and which not: let us try to make this inquiry.

### III

We must assume that the new short-term credit is used for a purpose which was not realised before. This is quite obvious, since every additional supply of capital disposition means that the total demand for capital can be satisfied to a greater extent than before and, therefore, that the "unsatisfied fringe" of borrowers, who until now were excluded by competition from obtaining a share of the supply of capital, will now obtain some. We must, therefore, examine the needs of these new *marginal borrowers*.

The question turns on the distinction between the class of borrowers who were previously satisfied and the class who were previously excluded from the market, and what are the needs which can now be satisfied.

A simple logical consideration, which has been adduced by Professor Strigl, concludes as follows: The fresh borrowers employ the fresh capital—either for a new enterprise or for the expansion of an already existing one—by demanding means of production, partly original factors of production, partly intermediate goods. This increased demand will raise the price of production goods. Therefore the borrowers who are in the best position to compete are those who are less affected by the increased cost of intermediate goods than by the lowering of the rate of interest. This is *not* the case with investment in raw materials and goods in process, but it *is* the case with investments in *fixed* capital since in calculating the prospects of such

investments the interest rate is of much greater importance than the price of the goods used.

Which competitors for capital were certainly satisfied before this? That class of entrepreneur, in whose calculation of prospective yields the factor of interest has no great weight; that is, those who *used* little fixed capital or who did not *produce* durable goods. If, up till now, the price of capital disposition, i.e. the rate of interest, has excluded some uses of capital, then we may be sure that they were uses for which the rate of interest was an important factor; that is, the employment of *fixed capital*.

In my last book,<sup>3</sup> I drew a further conclusion which comes to the same thing but which was criticised by Dr. Haberler—to whom I will refer later on. I argued as follows: The question is whether it is possible to expand the production of goods in process and of finished consumers' goods, without any increase of fixed capital. That would be technically possible by using the capacity of the existing plant more fully. But can this also be possible in the economic sense; that is, can that be profitable? I maintained that, since such increase in production would cause a decrease in overhead charges, due to the more complete use of fixed capital, the fact that the increase did not take place before is not to be explained by lack of capital but only by other factors—such as the steep rise in the prime cost curve. Cheaper credit can, therefore, never involve the increase of such a production.

I concluded, therefore, that the investment of fresh capital for an increase of production and output which might be technically possible without expanding fixed capital, is economically impossible. But we have already decided, as a result of our earlier discussion, that the only suitable use for short-term capital would be for a temporarily increased production of consumption goods, which do not need any production in the higher stages. Now we have seen further that a larger supply of capital will *never* lead to such investments. We must conclude, therefore, that the short-term use of capital is theoretically impossible.

But we must not push our conclusions too far, or our thesis will seem very improbable to people who know from statistics that large new investments in so-called working capital are continually taking place. There is no contradiction between this fact and our own theory, for alterations in the number and

<sup>3</sup> *Börsenkredit, Industriekredit und Kapitalbildung*. Vienna. 1931.

age-distribution of the population, alterations in technical knowledge, in taste, in seasonal or trend movements of the whole system must alter the volume of the demand for goods in process and for finished goods. Besides these factors, an increased investment in such goods must always be the consequence of increased investments in fixed capital, partly because the production of the new durable goods needs an increased working capital to be transformed into plant, and partly because the new fixed capital goods demand working capital as complementary goods.

Nobody, I think, will regard these factors as contradicting my thesis since, in the last case, everybody will understand that the increased working capital is even less an investment which can be easily liquidated, and in the other cases the increased demand for working capital is due to structural alterations in the system and, therefore, equivalent to a demand for perpetual use and not for temporary use. But only a temporary use would make a quick liquidation possible. There remains only seasonal variations in the demand for capital. This is a special problem about which I made some suggestions in my book. At this point I will only state my opinion that seasonal fluctuations in stocks do not correspond to seasonal fluctuations in the true demand for capital.

#### IV

The objections made by Dr. Haberler to my thesis that the form of the cost curve would not permit an increased investment in working capital without increased investments in fixed capital, are to a certain extent justified. Dr. Haberler argues that the assumption of decreasing overhead costs is undoubtedly correct but irrelevant to the actual problem. The certainty that total marginal costs will increase was a reason for not investing more working capital before. But if the rate of interest is reduced, the total cost curve falls and some further doses of working capital can be invested, the return on which will, indeed, be lower than the former rate of interest, but will equal the new, lowered, rate. Thus, if we do not assume a discontinuous cost curve, the increased supply of capital disposition must also cause an increased investment in working capital in the said industries.

It may be useful to illustrate the change in the costs of production by means of some concrete examples.



Let  $C$  be the unit costs of production.

$F$  the fixed overhead costs.

$P$  the prime costs (for wages and materials).

$I$  the interest paid on the current working capital.

$O$  the volume of output per year.

The costs of production are then :

$$C = \frac{F + P + I}{O}$$

Now, let us substitute reasonable figures. Let us assume that the turnover of working capital is every four months—or three times a year—and that the rate of interest is 5 per cent.

$$C = \frac{100,000 + 900,000 + \left(\frac{900,000}{3} \times 0.05\right)}{100,000}$$

$$C = \frac{100,000 + 900,000 \times 1.015}{100,000} = 10.15$$

If you remember that the marginal unit cost of production must increase with an increased volume of output, you will see that the decreasing rate of overhead costs must be over-compensated by increasing prime costs. With the increase of  $O$  from 100,000 to 110,000 pieces,  $P$  would, e.g., increase to 1,002,000.

Next, let us see the effect of a fall in the rate of interest from 5 per cent. to 4 per cent. Will the increase of output be attractive now? We will calculate the costs at an output of 110,000 pieces :

$$\begin{aligned} C_2 &= \frac{100,000 + 1,002,000 + \left(\frac{1,002,000}{3} \times 0.04\right)}{110,000} \\ &= \frac{100,000 + 1,002,000 + 13,360}{110,000} \\ &= \frac{1,115,360}{110,000} = 10.14 \end{aligned}$$

The whole diminution of unit costs is, therefore, from 10.15 to 10.14 or 0.1 per cent., while the interest rate has fallen by 20 per cent.

The relatively small effect of the change in the costs of credit, invested in working capital, on the total cost of production is

easily comprehended if you understand that we have there a fraction of a fraction of a fraction. The volume of working capital is only a ratio of the total annual prime costs, a ratio which depends on the rate of turnover; naturally, the *interest* on the working capital is only a percentage of that; and finally a decrease in the rate of interest is only a fraction of the latter. In our example, the rate of interest which was decreased by 20 per cent. involved a decrease in total costs of 0.1 per cent. An increase in the prime costs—in the cost of production goods and of wages—of less than 1 per cent. would have more influence on total capital costs than an alteration of 20 per cent. in the cost of borrowed capital. And you will easily appreciate the fact that the increase in credits and therefore the increase in the demand for means of production, will cause this increase in the cost of the working capital-*goods* which must exceed the decrease in the cost of the working capital-*disposition*.

Nevertheless, although we have found that we cannot alter the conclusions reached in my last book, I must concede to Dr. Haberler that the formulation of the one argument was not quite exact. The given formulation is suitable only for the case in which the lower rate of interest would not affect the old capital and credit, and would only concern fresh capital. But, in the end, we can still conclude that, starting from an equilibrium state, there can be no economically justified investment of capital disposition without increased fixed capital.

Many of the errors and misunderstandings in the theory of interest and investment are caused by the habit of regarding the rate of interest as only a factor of costs and of inquiring, therefore, only into the changes in the *cost* curves of goods, which must take place in consequence of a change in the rate of interest. This one-sidedness is shown with special clearness in our problem. If you look only at the cost curves, you will be deceived because the importance of the change in the cost curve falls far short of the importance of changes in the *demand* curve, caused by the increased command of capital.<sup>4</sup> In the first place, changes in the latter are shown most clearly in the prices of investment goods upon which the altered rate of interest acts to its full extent. While, in the former example, the diminution in the rate of interest by 20 per cent. decreases the supply price only by 0.1 per cent., the demand price of durable goods would rise by 20 per cent.

<sup>4</sup> Cf. J. M. Keynes, *Treatise on Money*, Vol. I, p. 211.

When we considered only the cost curves, we could ignore the difference in the extent of the influence of the larger supply of fresh capital-disposition on fixed capital goods on the one hand, and on finished consumers' goods on the other. This great difference is due to the demand curves which are shifted *upwards* for durable investment goods and *downwards* for consumers' goods—in so far as the fresh capital is supplied by fresh *savings*. When the increased command of capital is due to additional bank credits, the demand curve for fixed investments is equally shifted upwards, but it is only in a later and secondary phase of the business cycle—caused by these bank credits—that the demand curve for consumers' goods is also shifted upwards.

If we return again to the question of goods in process, we find that owing to the increased supply of fresh capital the demand for them by industries producing consumption goods will decrease, and only the demand by industries producing investment goods will increase. *If*, therefore, the demand for goods in process increases, this will only be in order that they may be transformed into fixed capital goods—a secondary effect of the increased demand for long-term investments. In no case is it possible for this increased working capital to become liquid within a short period.<sup>5</sup>

## V

At this stage of my paper, it seems appropriate to note how far my conceptions differ from those of the modern theory of credit and capital. I will not speak about my theory of *seasonal* fluctuations in the demand for capital—which I have not discussed to-day—because at present this position—which is said by Professor Robbins in his very kind review of my book to be revolutionary—is still isolated. But my conception that all fresh capital is used for long-term investments would find some support in modern treatises.

My esteemed friend, Professor Hayek, will probably agree with me. In his article against Messrs. Foster and Catchings,

<sup>5</sup> The addition of each new increment of capital will, of course, alter the conditions of equilibrium and will give rise to certain disturbances in the economic system as a whole; an attempt to withdraw this additional capital will have a similar effect. For technical reasons, however, while the structure of production may be modified with comparatively little friction when a change has to be made to more roundabout (i.e. to more *capitalistic*) methods, when the period of production has to be shortened as a result of liquidation of capital, much more friction is likely to be encountered.

published in 1929, he still deals with both types of investment of additional capital; that is, with investment in durable and in non-durable goods. He there states explicitly that by the command of new capital the factors of production could be transferred in "kapitalintensive Betriebe" without any increment of the existing fixed capital.<sup>6</sup> In his new book on *Prices and Production*,<sup>7</sup> he elucidates complex problems by schemes which involve far-reaching simplifications and he is forced by this reason to discuss only *long* and *short* processes and to disregard the problem of durable goods. But I am informed that his present work is concerned with the theory of durable goods.

To discover from Mr. Keynes' long and complicated work what his exact meaning is, is not easy, but I believe that—on this point—I am in agreement with most parts of his *Treatise*. Thus he states that the increased investment in working capital will take place not in the primary but in the secondary phase of the credit cycle.<sup>8</sup> And he declares that "in equilibrium the whole of current savings, apart from the normal growth of working capital, is available for additions to fixed capital."<sup>9</sup>

But you will find parts of the *Treatise* in which a different meaning is implied. Thus he writes, "The increased investment may take the form of an increase of working capital, corresponding to an increased total output due to an additional production of *consumption goods*, being superimposed upon the existing output."<sup>10</sup> Mr. Keynes considers this type of Commodity Inflation as the most characteristic of a credit cycle. I admit that the credit cycle tends to *end up* with this type of inflation, which will bring about the collapse, but I cannot see how it can *begin* with this kind. Mr. Keynes assumes "that the banks adopt a lending policy which allows the production of consumption goods to increase."<sup>11</sup> But this is exactly the case which I have shown to be impossible. One could perhaps find out a system in which not the economic incentive—not the prospect of profit—but public enterprise would cause production to take place; and public investments would start to increase such production. But this case is irrelevant at this point.

But we have neglected Mr. Keynes' conception of increased *employment* by increased bank credits. We must therefore ask, Can the increased volume of *employment* involve increased earn-

<sup>6</sup> "Gibt es einen Widersinn des Sparens?" *Zeitschrift für Nationalökonomie*, Band I, p. 415. Vienna. 1929.

<sup>7</sup> London. 1931. <sup>8</sup> *Op. cit.*, Vol. II, p. 102. <sup>9</sup> *Op. cit.*, Vol. II, p. 112.

<sup>10</sup> *Op. cit.*, Vol. I, p. 281. (My italics.) <sup>11</sup> *Op. cit.*, Vol. I, p. 305.

ings of the factors of production? And can this increased income involve an increased demand for consumption goods? Can investment in increased production of consumption goods be possible after all?

There is, I believe, a certain contradiction in Mr. Keynes' theory of re-employment. He is convinced that the unemployed factors of production will return to work when their earnings do not any longer exceed their marginal productivity. He holds that instead of a reduction of nominal wages, the diminution of the real earnings by the higher prices of consumers' goods, will have the same effect. In this connection, he makes some very interesting remarks upon "the redistribution of consumption from the rest of the community to the newly employed."<sup>12</sup> "Full employment of the factors of production requires a redistribution, not a reduction of the aggregate of consumption."<sup>13</sup> But no word of an immediate increase in total consumption. Here Mr. Keynes is right, but it would seem obvious that the first conception, which dealt with the increased consumption, cannot be maintained.

Here we have found again that there is no way leading to an investment in the production of *consumption* goods, and, therefore, no way leading to a short-term investment of short-term capital.

## VI

My inquiry has, I think, exhausted all possibilities of short-term investment, besides exhausting your patience. In spite of sincere endeavours we have not been able to find out how to invest capital in such a way that it can be reliquidated after a short time. But how does this conclusion compare with the fact that, in normal times, savers have not found their short-time savings illiquid?

The explanation is very simple. *The short-term saving is liquid in so far as a new saver takes the place of the liquidating one.* The substitution of one saver or investor for another can be expected in normal times. There is a continuous prolongation and turnover of the short-term loans and short-term investments. The individual owners, creditors, and debtors change but the volume of the capital is not reduced. If it is attempted to liquidate more short-term capital than the amount of new capital which is replaced, the creditors discover that their

<sup>12</sup> *Op. cit.*, Vol. II, pp. 124-5.

<sup>13</sup> *Op. cit.*, Vol. II, p. 126.

capital is *not liquid*, and can only be liquidated successively according to the further supply of new capital or according to the shrinkage of production.

We therefore reach the conclusion that private *short-term* capital is, in the system as a whole, *either*—by a permanent succession of savers—*long-term* capital, *or*—without this succession—not true capital at all. Which brings us back to a proposition of Carl Menger, the famous Austrian economist, published in 1871, which may therefore form my conclusion :

“Quantities of goods which are at the disposal of economic individuals only for such a *short* period that any productive use is impossible, are therefore *not true capital*.”