# The Role of the «Liquidity Trap» in Keynesian Economics

Recent discussions in the literature [1] have once again raised the question as to whether the "liquidity trap" plays a crucial role in Keynesian economics. I shall first discuss the analytical aspects of this question, and then turn to an examination of the *General Theory* in order to determine Keynes' own views on the matter.

1. - The first point that should be emphasized is that one's view on the foregoing question is derivative from one's view on a far more basic question about the nature of Keynesian economics: namely, whether the Keynesian system should be interpreted as one of unemployment equilibrium (the standard Hicks-Modigliani-Hansen interpretation that has been adopted by most macroeconomic textbooks) — or whether it should be interpreted as one of unemployment disequilibrium.[2] For if one adopts the first interpretation, then a necessary condition for the level of unemployment to remain unchanged (i.e. "in equilibrium") is that the level of aggregate demand remain unchanged; and if this demand has a non-zero interest elasticity, then a necessary condition for it to remain unchanged is that the rate of interest remain unchanged; and, finally

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1 See the special symposium on monetary theory in the *Journal of Political Economy*, September-October 1972.

2 The latter interpretation is the one presented in my "Price Flexibility and Full Employment" (1951, sec. 14) and *Money, Interest and Prices* (1965, chap. 14 and suppl. n. K:3).

This interpretation is also one of the major themes of Leijonhufvud's recent work on Keynesian economics (1968, pp. 161, 332, *et passim*).

(under the assumption of a constant nominal supply of money) a necessary and sufficient condition for the rate of interest to remain unchanged in the face of a declining price level is that the system be caught in the "liquidity trap".

On the other hand, if one views Keynesian unemployment as a disequilibrium phenomenon, then (as I have argued elsewhere) it is one that is dependent not on the assumption that the demand for money is infinitely interest-elastic, but on the assumption that as a result of high interest elasticity of the demand for money and low interest elasticity of investment, on the one hand, and distribution and expectation effects, on the other, the automatic adjustment process of the market — even when aided by a monetary policy that pushes the rate of interest down — is unlikely to converge either smoothly or rapidly to the full-employment equilibrium position.

This distinction can be conveniently illustrated in terms of the familiar IS-LM diagram, where for simplicity I shall disregard the

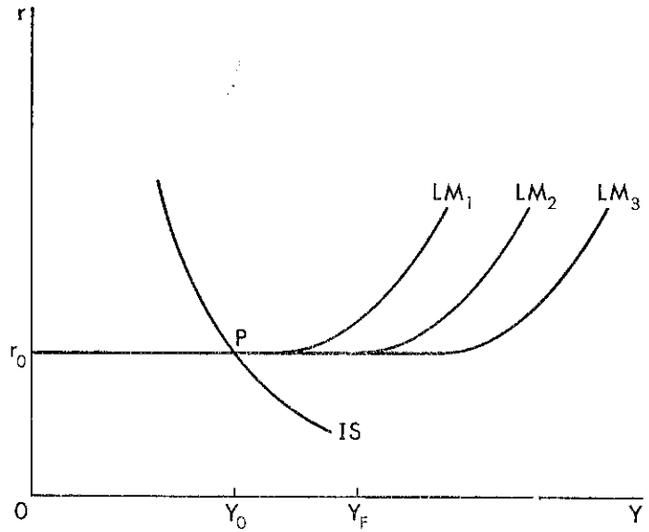


Figure 1.

real-balance effect in the commodity market. If despite a continuously falling level of prices, the level of real national income Y is to remain unchanged at $Y_0$, less than the full-employment level $Y_F$, then the LM curve must be infinitely elastic in the neighborhood of the



point P. Correspondingly, this intersection point is not affected by the rightward shifts of the LM curves generated by the decline in the price level. So Keynesian economics interpreted as an equilibrium system.

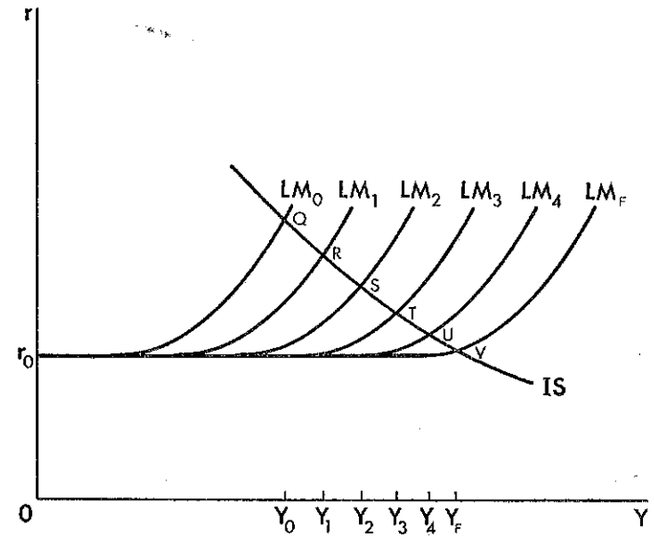


Figure 2.

If, on the other hand, we consider the Keynesian system as a disequilibrium system, then even if there should exist in principle an absolute limit, $r_0$, to the extent to which the rate of interest can fall, in actual experience this limit need not be effective — and need not be, therefore, an operational part of the Keynesian message. In stead, this message is that the combined influence of an interest-elastic demand for money and interest-inelastic demand for (investment) goods is such as to make the dynamic path to full employment that is generated either by a falling price level or by an expanding nominal money supply (as described by the points Q, R, S, T... in Figure 2) a long and difficult one, and hence unacceptable for policy purposes.

The nature of the forces that determine the movement of the "equilibrium" level of real national income, Y, along this path can be seen by differentiating with respect to the price level, p — or the

nominal quantity of money, M — the system that lies behind the IS-LM curves of Figure 2. This system is, of course,

$$F(Y, r) = Y, \qquad [1]$$

$$L(Y, r) = \frac{M}{p} \qquad [2]$$

where for simplicity the real-balance effect has been ignored. Differentiating this system yields the following description of the proportionate change in the "equilibrium" level of Y caused by a unit-proportionate change in p (or in M):

$$\frac{p}{Y}\frac{dY}{dp} = -\frac{M}{Y}\frac{dY}{dM} = -\frac{1}{(1-F_y)\dfrac{\eta^{L}_{r}}{\eta^{F}_{r}} + \eta^{L}_{Y}} \qquad [3]$$

where $F_y$ is the marginal propensity to spend on goods out of income; $\eta^{L}_{r}$ and $\eta^{L}_{Y}$ are respectively the interest- and income-elasticities of the demand for money; and $\eta^{F}_{r}$ is the interest elasticity of the demand for (investment) goods.

Thus if we view the Keynesian system as one of unemployment equilibrium, then (if we disregard — as the literature has disregarded — the possibilities that $\eta^{F}_{r} = 0$ or $\eta^{L}_{Y} = \infty$) $\eta^{L}_{r}$ in equation [3] must be infinite in order to keep Y constant in the face of the ever-falling price level that may characterize the state of unemployment: no finite value is consistent with such a constancy, so that from this viewpoint all finite values of $\eta^{L}_{r}$ are equivalent. On the other hand, if one is concerned with unemployment disequilibrium, then $\eta^{L}_{r}$ can be finite — and yet its precise finite value (say, −0.1 as contrasted with −2.0) can be of crucial importance for policy purposes.[3] For let us assume that the economy is producing at a level that is

3 For a contrary view, see Friedman (1969, p. 155).



5% below full employment. Then under fairly reasonable assumption as to the value of the other economic magnitudes in equation [3] (namely, $F_y = 0.8$, $\eta^{F}_{r} = -0.3$, and $\eta^{L}_{Y} = 1.2$), the restoration of full employment would require a price decline (or monetary increase) of roughly 6% in the case of $\eta^{L}_{r} = -0.1$ — but of more than 12.5% if $\eta^{L}_{r} = -2.0$! So whereas in the first case one could consider depending either on the automatic market forces generated by a falling price level and/or on the similar forces generated by an expansionary monetary policy in order to restore the economy to full employment — it would be impracticable to depend on such forces in the case of an interest elasticity of money equal to −2.0.

Needless to say, this is only an example. But whatever values we attribute to the other magnitudes in equation [3], it will remain true that the higher the interest-elasticity of demand for money, the greater the price decline or monetary increase needed to achieve a desired expansion in the level of output Y. And it is not at all unreasonable to assume that in some cases (as we have just seen) a high interest-elasticity of the demand for money will render monetary policy impracticable — even if this elasticity is not the infinite one of the "liquidity trap". This conclusion, of course, depends just as much on the value of the other elasticities that prevail — and on the interest-elasticity of investment in particular.

2. - In which way did Keynes himself view the "liquidity trap" in his *General Theory*? This is the question to which I shall now turn.

I still[4] consider the critical passage on this question to be the one from p. 207 of the *General Theory* in which Keynes writes:

> There is the possibility, for the reasons discussed above, that, after the rate of interest has fallen to a certain level, liquidity-preference may become virtually absolute in the sense that almost everyone prefers cash to holding a debt which yields so low a rate of interest. In this event the monetary authority would have lost effective control over the rate of interest. But whilst this limiting case might become practically important in future, I know of no example of it hitherto.

4 See Patinkin (1965, p. 349).

> Indeed, owing to the unwillingness of most monetary authorities to deal boldly in debts of long term, there has not been much opportunity for a test. Moreover, if such a situation were to arise, it would mean that the public authority itself could borrow through the banking system on an unlimited scale at a nominal rate of interest.
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> (*General Theory*, p. 207)

This paragraph makes it clear that what is at issue is not whether Keynes considered a state of "absolute liquidity preference" to be a theoretically possible one (which, as the paragraph just cited shows, he obviously did), but whether he considered this possible state of affairs to be the one that characterized the actual world he was analyzing (which, as the paragraph also shows, he obviously did not).

This distinction also manifests itself in Keynes' discussion a few pages earlier:

> The difficulties in the way of maintaining effective demand at a level high enough to provide full employment, which ensue from the association of a conventional and fairly stable long-term rate of interest with a fickle and highly unstable marginal efficiency of capital, should be, by now, obvious to the reader.
>
> Such comfort as we can fairly take from more encouraging reflections must be drawn from the hope that, precisely because the convention is not rooted in secure knowledge, it will not be always unduly resistant to a modest measure of persistence and consistency of purpose by the monetary authority. Public opinion can be fairly rapidly accustomed to a modest fall in the rate of interest and the conventional expectation of the future may be modified accordingly; thus preparing the way for a further movement — up to a point. The fall in the long-term rate of interest in Great Britain after her departure from the gold standard provides an interesting example of this; — the major movements were effected by a series of discontinuous jumps, as the liquidity function of the public, having become accustomed to each successive reduction, became ready to respond to some new incentive in the news or in the policy of the authorities.
>
> (*General Theory*, p. 204)

Similarly, a few pages later Keynes writes:

> We have assumed so far an institutional factor which prevents the rate of interest from being negative... In fact, however, institutional and psychological factors are present which set a limit much above zero to the practicable decline in the rate of interest..., which in present circumstances may perhaps be as high as 2 or 2½ per cent on long term. If this should prove correct, the awkward possibilities of an increasing stock of wealth, in conditions where the rate of interest can fall no further under laissez-faire, may soon be realized in actual experience. Moreover if the minimum level to which it is practicable to bring the rate of interest is appreciably above zero, there is less likelihood of the aggregate desire to accumulate wealth being satiated before the rate of interest has reached its minimum level.
>
> The post-war experiences of Great Britain and the United States are, indeed, actual examples of how an accumulation of wealth, so large that its marginal efficiency has fallen more rapidly than the rate of interest can fall in the face of the prevailing institutional and psychological factors, can interfere, in conditions mainly of laissez-faire, with a reasonable level of employment and with the standard of life which the technical conditions of production are capable of furnishing.
>
> (*General Theory*, pp. 218-19)



Thus once again it is clear that in Keynes' judgment "conditions where the rate of interest can fall no further" have not yet been "realized in actual experience". On the other hand, it is clear from the second paragraph in the preceding passage that what Keynes does consider to be "realized in actual experience" is the unemployment generated by the fact that the rate of interest falls *too slowly* in relation to the marginal efficiency of capital.[5]

At first sight, the following passages from the *General Theory* would seem to contradict this interpretation:

> ...in the extreme case where money-wages are assumed to fall without limit in face of involuntary unemployment through a futile competition for employment between the unemployed labourers, there will, it is true, be only two possible long-period positions — full employment and the level of employment corresponding to the rate of interest at which liquidity-preference becomes absolute (in the event of this being less than full employment).
>
> (*General Theory*, p. 191)

> If... money wages were to fall without limit whenever there was a tendency for less than full employment... there would be no resting

[5] This is also the interpretation to be placed on Keynes' discussion in Chapter 17 of the *General Theory*, and of p. 236 in particular. The same is true of the discussion on pp. 172-73.

> place below full employment until either the rate of interest was incapable of falling further or wages were zero.
>
> (*General Theory*, pp. 303-304)

However, the true meaning of these passages can be established only after first determining whether Keynes was thinking about a hypothetical "long-period position" or "resting place" that had never yet been realized, or whether he was thinking about the contemporary real world whose unemployment he was analyzing. And in view of what I have shown above in connection with Keynes' discussion on pp. 207 and 219 of the *General Theory*, I would contend that the former is the case. In any event, there is nothing in the context of Keynes' discussion on pp. 191 and 304 that runs contrary to this contention.

Evidence in support of this contention — or at least in support of the contention that Keynes did not attach much practical importance to the absolute lower limit on the rate of interest — is provided by the fact that in his Chapter 18 on "The General Theory of Employment Re-Stated" (in which, presumably, Keynes restated what he considered to be the major components of his position) Keynes makes a statement very similar to the one just cited from p. 191 — but omits any reference to "the rate of interest at which liquidity-preference becomes absolute". This passage reads:

> For if competition between unemployed workers always led to a very great reduction of the money-wage, there would be a violent instability in the price-level. Moreover, there might be no position of stable equilibrium except in conditions consistent with full employment; since the wage-unit might have to fall without limit until it reached a point where the effect of the abundance of money in terms of the wage-unit on the rate of interest was sufficient to restore a level of full employment. At no other point could there be a resting place.
>
> (*General Theory*, p. 253)

There is, however, one passage in the *General Theory* that does support the contention that Keynes saw the "liquidity trap" as a situation characterizing the real world. This passage reads:

> But the most stable, and the least easily shifted, element in our contemporary economy has been hitherto, and may prove to be in future, the minimum rate of interest acceptable to the generality of wealth-owners. If a tolerable level of employment requires a rate of interest much below the average rates which ruled in the nineteenth century, it is most doubtful whether it can be achieved merely by manipulating the quantity of money.
>
> (*General Theory*, p. 309)



To my mind, however, the weight of this single quotation from the *General Theory* is offset by the other quotations that I have discussed above and which show that Keynes did not consider a situation of "absolute liquidity preference" to be one that actually prevailed in the world of unemployment he was analyzing.

What these quotations do, however, show is that Keynes saw as a realistic possibility (and even characteristic of the 1930's) a situation of unemployment disequilibrium in which wages and interest continue to decline, but in which (taking into account the low-interest-elasticity of investment and the adverse state of expectations in the system) the rate of interest declines too slowly to stimulate investment adequately, so that the level of aggregate demand — and hence the level of employment — continues to decline, or at least does not rise sufficiently fast. And this is, accordingly, the interpretation of Keynesian economics presented in the preceding section.

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