Journal of the History of Economic Thought,
Volume 35, Number 3, September 2013

GENTLEMEN PREFER LIQUIDITY: EVIDENCE FROM KEYNES

BY
SYLVIE RIVOT

This paper deals with the concept of liquidity in Keynes' theoretical and political writings. First of all, liquidity, according to Keynes, is a concept much more comprehensive than commonly held nowadays: for Keynes, liquidity means more than an easy convertibility, a high marketability (land might have been highly liquid in ancient times). In short, an asset is highly liquid when its value is weakly dependent on a change in our long-term state of expectations. In a second step, this reassessment of liquidity is applied to Keynes' political writings, in particular to monetary policy and also to the 'buffer-stock' scheme. On the one hand, our investigation shows that in a context of 'uncertainty,' monetary policy basically aims to encourage the private sector to have confidence in long-term expectations. Private wealth owners should accordingly ask for lower and lower 'liquidity premium.' On the other hand, Keynes' 'buffer stocks' of commodities are not intended for a direct control of prices. Rather, their proper purpose is to confer more liquidity to commodities; i.e., to transform them to 'monetary assets.' All in all, monetary policy and buffer-stocks schemes prove to be two basic rationales of Keynes' concept of liquidity still worth being investigated—today as before.

I. INTRODUCTION

Maynard Keynes' reputation has recently undergone a significant upgrade as a result of abnormal circumstances. When the 2008 financial collapse triggered a severe real

University of Mulhouse – GRAICO. Email: rivot@cournot.u-strasbg.fr. This paper was presented at the fourth workshop on 'interface between history of economic thought and economic theory' that took place in Strasbourg (France) in December 2010. I am very grateful to an anonymous referee for trenchant criticism, which was of great help in my final revision of this paper.

Many years before Hawks' famous movie *Gentlemen Prefer Blondes* (1953), the banker Andrew Mellon is said to have claimed that "gentlemen prefer bonds." In the early 1900s, his argument was that wealth owners held bonds that were tax-free rather than other capital assets, so that if the government were to reduce the rate of taxation, its revenue would increase.

ISSN 1053-8372 print; ISSN 1469-9656 online/13/03000397-422 © The History of Economics Society, 2013
doi:10.1017/S1053837213000230

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

downturn, there were pleas for extensive budgetary schemes, state expenditure, and incentives to support both private consumption and investment. This 'Keynesian revival' was actually quite short-lived, and the "return of the master" (Skidelsky 2009) turned out to be a chimera. The prospect of a deflationary spiral is now supposed to be over, and it is thought that now is the right time for cuts in public spending and the reduction of state deficits; in short, the control of 'unsustainable' debt. This is most deplorable since, as shown by Laidler (2010), Keynes' relevance for today goes much further than his policy advice. Indeed, the contemporary crisis "calls for a reconsideration of Keynes' insights into the mechanics of inter-temporal coordination in a monetary economy and their proneness to occasional failures" (Laidler 2010, p. 59).

Leaving aside the issue of the current economic crisis, this paper offers a slightly different route for investigating Keynes' relevance for today. We will focus on two particular phenomena of our economy in evidence shortly before the 2008 autumn collapse. The first of these, contrasting sharply with the pathologies we now experience, was 'speculation,' in particular on global raw material markets.[1] It is striking that at that time, commodity markets simultaneously experienced soaring prices and a high degree of volatility. Second, during the latter half of 2007, the subprime crisis spread to other financial markets through what is commonly called "increased market illiquidity, funding illiquidity, or even default risks" (Frank, Gonzales-Hermosillo, Hesse 2008, p. 5). In our opinion, there is, at the theoretical level, a common critical concept at work in both episodes: the liquidity premium attached to any asset in a monetary economy.

Any reassessment requires that we establish a coherent rationale for Keynes' concept of liquidity. In contrast to the most common interpretations, liquidity was, for Keynes, in no way a crude synonym for easy marketability or perfect convertibility. Indeed, one can read Keynes' maintaining that in ancient times land might have been considered the most liquid asset—despite the obvious lack of well-organized markets. In fact, within Keynes' theoretical framework, liquidity is closely linked to our current state of expectations, and more precisely to the confidence with which we can maintain these expectations. As soon as the concept of liquidity is reassessed from Keynes' perspective, it can be understood that, in addition to 'speculation,' large fluctuations in commodity markets might be the result of their lack of liquidity—despite the apparent ease with which commodities are traded. As for the second feature of the pre-2008 episode, a crisis of confidence in interbank money markets, not to speak of the freezing of particular sectors of money markets, should be viewed as a much more intractable issue than a simple chain reaction triggered by a sudden suspension of marketability. Instead, it signifies a sudden and sharp revision in the conventions governing opinion concerning which assets are the least dependent upon changes in our expectations. In both cases, far-reaching regulation is involved.

We present below an investigation of two particular points made by Keynes. These are not the familiar advocacy of public works and fiscal policy in general, but are less well known: monetary policy and a 'buffer-stock' scheme for the control of commodity prices. To the best of our knowledge, these two lines of argument have never been linked together in one line of reasoning, probably because Keynes' idiosyncratic conception of liquidity has been ignored. In what follows, the issue of budgetary policy

[1]See Helbling, Mercer-Blackman, Cheng (2008).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

is left entirely to one side. This is not to denigrate the capacity of public intervention to influence private-sector long-term expectations. In Keynes' perspective, fiscal policy is still the most influential weapon against deficient effective demand. As we will show, even if subordinated to budgetary policy, monetary policy in a long-run perspective and buffer-stock schemes in a shorter one are critical means to ensure full employment. It will be demonstrated that these provide two basic rationales for Keynes' concept of liquidity, which remain worthy of examination today.

In what follows, we shall first review the necessary theoretical background of our inquiry through a reassessment of Keynes' concept of liquidity in a monetary economy. We shall then apply this reassessment to what Keynes considers an appropriate monetary policy and to his proposed 'buffer-stocks' scheme. Ultimately, these two rationales of Keynes' concept of liquidity will shed new light on the two particular episodes mentioned above.

II. LIQUIDITY IN A MONETARY ECONOMY

In common parlance, liquidity implies the ease with which money and assets can be converted; they are highly marketable: "*Liquid assets* are durables traded in well-organised and orderly markets" (Davidson 1978, p. 61). In his investigation of the functioning of financial markets, Keynes himself reminds us that on these markets, "there is no such thing as liquidity of investment for the economy as a whole" (Keynes 1973a, p. 155). This statement is usually understood as follows: investment in newly produced capital goods is made once and for all, as opposed to purchases of financial instruments in stock markets that can be easily reversed by the individual wealth owner. In this sense, financial assets are thought to be much more liquid than physical capital assets: they are much more easily liquidated. If liquidity is understood in this way, there is, however, one particular statement in *The General Theory* that appears very difficult to rationalize; namely, the claim that "it may be that in certain historic environments the possession of land has been characterised by a high liquidity-premium in the minds of the owners of wealth" (Keynes 1973a, p. 241). Here, Keynes does not pose the issue in terms of the choice-set faced by wealth owners before sophisticated financial markets existed, as North (1991) would have done.[2] Very strikingly, emphasis is instead laid on two characteristics that land shares with money: low elasticities of production and of substitution. In addition to this, there is also the concept of "liquid capital" defined in *The Treatise on Money* as "goods in stocks, which are yielding nothing but are capable of being used or consumed at any time" (Keynes 1971a, p. 116). There is clearly no reference here to high marketability or perfect convertibility, so that this quotation also appears rather cryptic.[3]

[2]"In the modern world, insurance and portfolio diversification are methods for converting uncertainty into risks and thereby reducing, through the provision of a hedge against variability, the costs of transacting" (North 1991, p. 106).

[3]In this latter example, one might argue that *The Treatise* belongs to a quite different theoretical framework, the 'Keynes 1' epoch prior to the Keynesian Revolution. We would argue otherwise. Keynes often refers to his *Treatise* in *The General Theory*, precisely in Book IV (see, for example, ch. 13, sec. IV; or ch. 17, sec. VI). And so, regarding the absence of Keynes' explicit repudiation of his previous work on this particular issue, there is no reason *a priori* to consider that the same wording would not have the same meaning.

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

What Is a Monetary Economy?

In the preparatory works to *The General Theory,* Keynes distinguishes three types of economy: a *cooperative* or *real-wage* economy; a *neutral* economy; and an *entrepreneur* or *money-wage* economy. In the first, "the factors of production are rewarded by dividing up in agreed proportions the actual output of their cooperative efforts" (Keynes 1979, p. 77). In a neutral economy, factors of production are rewarded in money. However, "there is a mechanism *of some kind* to ensure that the exchange value of the money incomes of the factors is always equal in the aggregate to the proportion of current output which would have been the factor's share in a co-operative economy" (Keynes 1979, p. 78). It should be recalled here that this 'mechanism of some kind' actually corresponds to the classical theory of the interest rate. In short, there exists a unique interest rate determined by non-monetary factors such as productivity and thrift, to which the long-term money interest automatically adjusts. A neutral economy functions *as if* factors of production were remunerated in kind. Finally, in a money-wage economy, factors of production are rewarded in terms of money but the "mechanism of some kind" ensuring that the actual product will, in turn, be bought is absent. It will be only by mere chance that effective demand will coincide with full employment. This means that the exchange value of the remuneration to factors of production is independent of the scale of aggregate output. In other words, factors of production are now capable of *hoarding* the asset in which they are paid.

It should be noticed that the same problem would arise if factors of production were paid in 'something other' than money.[4] If they were to be paid with obsolete stamps, they would be able to hoard and, thus, defer purchasing power for an indefinite time in terms of obsolete stamps. In such an economy, obsolete stamps are held as a reserve of wealth precisely because they are the means of exchange. Indeed, since contracts are formulated in terms of obsolete stamps, individuals seek to defer purchasing power in the same standard. This statement will be made again in *The General Theory*: "so long as there exists any durable asset, it is capable of possessing monetary attributes and, therefore, of giving rise to the characteristic problems of a monetary economy" (Keynes 1973a, p. 294). What are these "monetary attributes"? First, the monetary asset is supposed to have a zero elasticity of production, in the sense that no more labor would be employed if its demand-price rises. This is clearly the case for 'money'—its supply depending on the behavior of the central bank—but also for plots of land or obsolete stamps. The stock of these monetary assets is, thus, given during the current period, and their future supply is easily predictable. Second, the monetary asset is characterized by a zero elasticity of substitution. The monetary asset is demanded 'for itself' so that demand would not fall when its price rises. Why, then, would individuals prefer to keep purchasing power in terms of the monetary asset (which provides no yield) rather than to purchase consumption or capital goods? What is the price of this

[4]Indeed, the key characteristic of a monetary economy is as follows: "Money is *par excellence* the means of remuneration in an entrepreneur economy which lends itself to fluctuations in effective demand. But if employers were to remunerate their workers in terms of plots of land or obsolete postage stamps, the same difficulties could arise. Perhaps anything in terms of which the factors of production contract to be remunerated, which is not and cannot be a part of current output and is capable of being used otherwise than to purchase current output, is, in a sense, money. If so, but not otherwise, the use of money is a necessary condition for fluctuations in effective demand" (Keynes 1979, p. 86).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

monetary asset and why does its demand-price not necessarily decrease when the quantity supplied rises? Precisely because of its liquidity, to which we now turn.

Liquidity and Uncertainty

In a monetary economy, Say's law is flawed from the outset: there is no mechanism that ensures effective demand is consistent with full employment. Entrepreneurs have now to form expectations on the future state of demand when deciding how many factors of production (both labor and capital) to hire. As for wealth owners, they now need to anticipate the prospective yields of the assets they hold. The point here is not merely that the future is unknown and must be anticipated, but more fundamentally that the possible 'states of the world' are also not completely known. Moreover, we do not even know the extent to which our knowledge is lacking. In contemporary parlance, a monetary economy is characterized by *uncertainty* rather than *risk*.[5] Here we find a critical application of Keynes' conception of probability.[6] Indeed, Keynes holds a "two-tier theory of belief" (Runde 1994, p. 133). Briefly, there is first of all probability, understood as a logical relation between a proposition and the available evidence: the probability corresponds to our 'degree of rational belief' in the proposition. Second, since the information set is not fully known—in other words, since we cannot fully rely on the proposition under consideration—our confidence corresponds to the 'weight' attributed to the probabilistic argument. The more complete the information becomes, the more relevant evidence we can acquire, the more will be the weight of the argument under consideration.[7] Since the knowledge and evidence available to each of us are not the same, it should be noted that both the propositions examined and the degree of rational belief in them (namely, its probability) will differ from person to person.

Let us apply this conception of probability to the choice-set faced by the individual wealth owner. For him, the point is to form expectations of the expected price (or of the prospective yields) of the asset he holds, but also to attribute weight to these

[5]Until recently, Keynes' conception of uncertainty was conflated with Knight's. For example, Davidson (1972) spoke of uncertainty "in the Knight–Keynes sense" (Davidson 1972, p. 102). Yet, a closer examination shows that the two conceptions should be more carefully distinguished. For Knight, risk refers to quantitative probabilities, while uncertainty does not. In contrast, for Keynes, uncertainty might refer to a measurable probability, whereas risk corresponds both to a probabilistic measure and a high weight attributed to the argument (Roncaglia 2009). Another way to distinguish Keynes and Knight on this issue has been suggested by Lawson (1998): while for Keynes, probabilities are an aspect of knowledge, they are by contrast for Knight part of the material reality. As an echo of very recent debates prompted by the 2008 crisis, Davidson (2010) shows that what one considers today to be 'black swans' corresponds to Knight's uncertainty; i.e., "high degree unique" (Knight 1921, p. 233) events, whereas Keynes' uncertainty does not refer to very rare events. For Keynes, uncertainty refers to the proposition, not to events: "future outcomes may turn more adverse than what knowledge of past history envisions" (Terzi 2010, p. 563).

[6]There is an extensive literature devoted to Keynes' treatment of uncertainty, especially on the links to be made with, on the one hand, the frequentist approach, and the subjectivist—or Bayesian—approach, on the other. In our view, Runde (1994) and Roncaglia (2009) rightly argue that Keynes holds a 'objective' conception of probability, in the sense that the probability formed is independent of our own judgment.

[7]In Keynes' own words: "Probability is not related to the balance between favorable and unfavorable evidence but to the balance between the *absolute* amount of relevant knowledge and of relevant ignorance. … An accession to new evidence increases the *weight* of an argument. New evidence will sometimes decrease the probability of an argument, but it will always increase its 'weight'" (Keynes 1973b, p. 77).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

expectations. Confidence is defined here as "on how highly we rate the likelihood of our best forecast turning out quite wrong" (Keynes 1973a, p. 148). The less the weight placed on expectations, the less confidence attributed to the latter. The price expected by the individual wealth owner is set at a level such that the probability that the future price falls short of the expected value is equal to the probability that it lies above the expected value. Everyone is considering this problem in the same way, yet without either the same knowledge or the same available evidence, so that the asset market price is set at the level where the bear positioning is just compensated by the bull positioning. For simplicity's sake, let us consider three types of aggregates: capital assets, bonds, and 'monetary assets' (including saving deposits and even short-term bonds, etc.).[8] At equilibrium, the prospective returns of these three assets must be equal: "there is nothing to choose in the way of advantage between the alternatives" (Keynes 1973a, pp. 227–228). Both bonds and capital assets are titles to prospective returns that are supposed to be discounted by the same interest rate to obtain their present value. Yet, prospective returns of the former can be safely considered as fully known in advance, while the latter are to be anticipated. Since the future 'states of the world' are not fully known—in other words, since 'uncertainty' prevails—prospective returns are merely the result of a convention, which "lies in assuming that the existing state of affairs will continue indefinitely, expect in so far as we have specific reasons to expect a change" (Keynes 1973a, p. 152). Keeping in mind Keynes' conception of uncertainty, this statement can be reformulated as follows: a probability statement regarding a proposition and the available evidence will be retained until new evidence compels us to revise our judgment.

In the case of a weak state of confidence, when the weight attributed to expected asset value is quite low, the first thing that the wealth owner can do is to hold short-term assets rather long-term ones. Indeed, "holding assets that have a greater term to maturity involves a greater degree of uncertainty because the predictability of future events decreases as the term to maturity increases" (Koutsobinas 2011, p. 753). The second thing that the wealth owner might choose to do is to hold financial assets instead of capital goods. Here is to be found the illusion of 'liquidity' that prevails on organized investment markets: "investments which are 'fixed' for the community are thus made 'liquid' for the individual" (Keynes 1973a, p. 153). What does this mean? To benefit from 'liquidity,' to "beat the gun" (Keynes 1973a, p. 155), requires the maintenance of the existing market convention. In that case, and in that case only, an individual investor can feel himself allowed, thanks to his knowledge, his personal abilities, and so on, to revise the available evidence underlying the market evaluation of a capital asset before anyone else in that market, and, hence, to reverse his

[8]Keynes' definition in *The General Theory* is highly enlightening. Let us quote him extensively: "We can draw the line between 'money' and 'debts' at whatever point is most convenient for handling a particular problem. For example, we can treat as *money* any command over general purchasing power which the owner has not parted with for a period in excess of three months, and as *debt* what cannot be recovered for a longer period than this; or we can substitute for 'three months' one month or three days or three hours or any other period; or we can exclude from *money* what is not legal tender on the spot. It is often convenient in practice to include in money time-deposits with banks and, occasionally, even such instruments as (e.g.) treasury bills. As a rule, I shall, as in my Treatise on Money, assume that money is co-extensive with bank deposits" (Keynes 1973a, p. 167, n.1).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

investment.[9] He could, for example, turn his investment into bonds that pay a fixed income return, or into shorter assets, the value of which is less dependent on a change in the long-term state of expectation. But, in fact, this 'liquidity' offered by financial instruments is an illusion: were all investors tempted to reverse their investment at the same time, the market valuation for these prospective returns on capital assets would not remain unchanged—far from it.

To benefit from liquidity, from 'true' liquidity (of monetary assets) instead of 'liquidity' (on financial markets) as an illusion, is a quite different issue. Here is the critical distinction emphasized by Hayes (2006) between *'liquidity'* in organized investment markets that proves to be an illusion, and *liquidity* (what can be called 'true' liquidity) offered by money. In the case of a weak state of confidence, the wealth owner prefers to hold assets whose value will not be affected if he is prompted to revise his long-term expectations. Here, liquidity does not merely mean ease of convertibility in money because of well-organized markets. Rather, it "includes the degree to which the value of an asset, measured in any given standard, is independent of changes in the state of the long-term expectation" (Hayes 2006, p. 151). It should also be noted that this is precisely the reason why "money itself loses rapidly the attribute of 'liquidity' if its future supply is expected to undergo sharp changes" (Keynes 1973a, p. 241). With regard to this interpretation of liquidity, the following quotation is illuminating:

> I am rather inclined to associate risk premium with probability strictly speaking, and liquidity premium with what in my *Treatise in Probability* I called 'weight'. An essential distinction is that a risk premium is expected to be rewarded on the average by an increased return at the end of the period. A liquidity premium, on the other hand, is not even expected to be so rewarded. It is a payment, not for the expectation of increased tangible income at the end of the period, but for an increased sense of comfort and confidence during the period. (Keynes 1979, pp. 293–294)

Risk premium would correspond to the notion of variance (i.e., of actuarial risk) when the probability distribution of expected returns is fully known; this is supposed to be remunerated. By contrast, an asset liquidity premium represents the sacrifice to which we consent in terms of prospective yield to insure ourselves against a change of value of this asset because of a revision of our expectations—the extent of this possible revision being as yet unforeseen. In other words, the prospective yields of a bond can roughly be considered as known in advance, so bonds encounter only a liquidity risk: the only risk one takes in possessing a bond is to sell it, for a reason *as yet unanticipated*, before maturity, and then to support a capital loss because of the higher yields offered by newly issued bonds. By contrast, a capital asset encounters both an actuarial and a liquidity risk.[10] That is the true meaning of the liquidity risk carried by assets that pay

[9]This is precisely the reason why "speculation" is defined as "the activity of forecasting the psychology of the market" (Keynes 1973a, p. 158).

[10]That is the reason why, except in Chapter 12 of *The General Theory*, Keynes generally considers the state of long-term expectations to be given. However, in Chapter 12, the arbitrage in question is between, on the one hand, capital assets and financial instruments (the prospective returns of which must be anticipated); and, on the other, bonds that bear a known-in-advance return. Elsewhere, Keynes deals with the arbitrage between money and bonds—the prospective returns of the existing non-monetary assets being considered a given. As we will see below, investment fluctuations are then explained by the *indirect* influence of the interest rate as determined by liquidity preference.

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

fixed prospective streams, "the possible (not probable or expected) loss of value as a result of a change in the state of expectation, which includes the state of confidence" (Hayes 2006, p. 21). The less confident we are in our expectations, the higher the rate of return we shall require if we are to part with liquidity. The fundamental characteristic of any monetary asset follows from this: it is viewed as an asset, the value of which is weakly dependent on fluctuations in the long-term state of expectation.

Liquidity applies to all assets: "there is, clearly, no absolute standard of 'liquidity' but merely a scale of liquidity" (Keynes 1973a, p. 240). Taking this definition, wealth owners would probably consider their saving-deposits as more liquid than bonds, bonds more liquid than equities, and equities more liquid than capital goods. Here, the fact that financial instruments are more easily resalable than capital goods helps them to carry a higher liquidity premium but, as shown above, this is only part of the story. In addition, the shorter the life of the asset until maturity, the higher its liquidity, since the possibility of an unexpected change of value is less probable in this case. What about the liquidity conferred on land? In ancient times, land might have been considered the most liquid asset, despite its low marketability. The common points between land at that time and money today are their zero elasticity of production and their very low elasticity of substitution—two crucial characteristics of monetary assets. The existence of very long-term contracts more or less guarantees land yields in the long run and, thus, mitigates our ignorance of the future: the risk premium on land was considered quite low. In those times, land was thus demanded 'for itself' because it was considered as the least liable to unforeseen changes of value. As a matter of convention, and despite the lack of a well-organized market for it, land was considered to be an asset whose value was quite unlikely to be revised in case of an unforeseen change in the long-term state of expectations: its liquidity risk was considered quite low. As a result, "it is conceivable that there have been occasions in history in which the desire to hold land has played the same rôle in keeping up the rate of interest at too high a level which money has played in recent times" (Keynes 1973a, p. 241).

The Interest Rate in a Monetary Economy

Why does the interest rate "rule the roost" (Keynes 1973a, p. 223) in a monetary economy? As a prerequisite, it should be kept in mind that the problem does not arise from the inelasticity of investment with respect to changes in the interest rate. In contrast with consumption goods, capital goods are long-lived. For wealth owners, bond streams and equity streams must be roughly substitutes at equilibrium, so capital goods and debts can be lumped together in the 'non-monetary asset' aggregate. As clearly argued by Leijonhufvud (1968), this non-monetary asset can be viewed, in the simplest case, as a title that pays a stream of a dollars per year during T years. The price of this asset then depends on, first, the discounting rate of these streams (in short, the interest rate) and, second, the prospective value of a. The current value of these prospective streams roughly corresponds to what Keynes calls the "marginal efficiency of capital." Once the marginal efficiency of capital (as determined by the long-term state of expectation) is considered as given in the short run, the interest rate plays the role of an (inverse) index of the non-monetary asset price. This non-monetary asset is highly sensitive to the long-term interest

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

rate. Accordingly, investment fluctuations are basically explained by the *indirect* influence of the interest rate:

> In Keynes' language, 'a decline in the interest rate' *means* 'a rise in the market prices of capital goods, equities, and bonds'. Since the representative non-money asset is very long-lived, its interest-elasticity of present value is quite high. The price-elasticity of the output of augmentable income sources is very high. (Leijonhufvud 1968, p. 42)[11]

Newly produced capital goods' being now properly considered sensitive to the interest rate, explanation of the basic problem that arises in a monetary economy turns on explaining the downward rigidity of the interest rate. To put it more precisely, it is the long-term rate that requires investigation, since capital goods are long-lived. Uncertainty then enters the problem in a twofold way:

> It is not surprising that the volume of investment, thus determined, should fluctuate widely from time to time. For it depends on *two sets of judgements about the future*, neither of which rests on an adequate or secure foundation—on the propensity to hoard and on opinions of the future yield of capital assets. (Keynes 1973c, p. 114)

As is well known, the interest rate is defined by Keynes as "the reward for parting with liquidity for a specified period" (Keynes 1973a, p. 167). Here, the problem is put in terms of the arbitrage between monetary assets and bonds—that is, titles that pay an income stream fully known in advance, so that the analysis focuses on liquidity premium. Why, then, hold money that pays nothing, instead of a bond? Because of the "uncertainty as to the future of the rate of interest" (Keynes 1973a, p. 168). This basic issue involves two points. First, as a matter of principle, it cannot be excluded that we will be obliged for any reason yet unforeseen to sell this bond before term and, thus, to incur "a risk of loss" (Keynes 1973a, p. 169), the magnitude of which cannot be anticipated today. There is also the possibility of 'staying liquid' to be ready for opportunities as they come up; that is, to benefit from "unforeseen opportunities of advantageous purchases" (Keynes 1973a, p. 196). Here is to be found the precautionary motive of liquidity preference.[12] The more uncertain is the future, the less weight we can place on our expectations of future rates of interest (that is, on our expectations of future non-monetary asset prices), the more liquid we will wish to be in holding assets whose value is highly independent of a sudden revision of long-term expectations, the aim being to avoid loss of capital. The second point is more subtle, and corresponds to the speculative motive for liquidity preference that derives from the existence of "organised market for dealing in debt" (Keynes 1973a, p. 169) and that undermines the relevance of the reasoning stated above. Once again, the point is that an individual investor can feel himself permitted, thanks to his knowledge, his personal abilities, and so on, to revise the available evidence underlying the market evaluation of interest rates before anyone else in that market. He will reverse his investment, turning it, for

[11]Viewed this way, Keynes' two-commodity model entails an explanation of the investment level contrasting sharply with that of the income-expenditure 'Keynesian' level (i.e., IS-LM), where capital goods are perfect substitutes for consumer goods (and, hence, short-lived), and where, incidentally, the investment level is inelastic with respect to the interest rate.

[12]The precautionary motive means "to provide for contingencies requiring sudden expenditure and for unforeseen opportunities of advantageous purchases" (Keynes 1973a, p. 196).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

example, into very short-term or into purely monetary assets, if he regards future asset price rises less probable than future falls in asset prices. By contrast, "the individual who differs from the market in the other direction will have a motive for borrowing money for short periods in order to purchase debts of longer term" (Keynes 1973a, p. 170). In Keynes' words, this means "knowing better than the market what the future will bring forth" (Keynes 1973a, p. 170). The marginal efficiency of capital being considered as given, let us apply Keynes' "two-tier theory of belief" (Runde 1994, p. 133). The expected value of non-monetary assets being given, price movements are then explained by our degree of distrust in our expectations: distrust in our own capacity to formulate probable judgments in the case of the precautionary motive, and, much more importantly, distrust in the conventional valuation operated by the market in the case of the speculative motive. As emphasized by Runde (1994, p. 134), after *The General Theory*, the speculative and the precautionary demand for money are lumped together as the demand for inactive balances. In Keynes' words: "The demand for liquidity can be divided between what we may call the active demand which depends on the actual and planned scales of activity, and the inactive demand which depends on the state of confidence of the inactive holder of claims and assets" (Keynes 1973c, p. 221). Whether we are distrustful of our own long-term expectations or of the market estimation of the community's expectations as a whole, and even assuming that it is possible to clearly disentangle the two motives, the result will be the same in holding 'inactive' monetary assets. Here is to be found the "dilemma" (Keynes 1973a, p. 170) of our modern economies. On the one hand, in the absence of an organized market for non-monetary assets in general, everyone could not but rely on individually available evidence to formulate his own expectations of future rates. Our optimism with regard to liquid assets (such as land, perhaps, as a convention), compared with our distrust of our own calculations regarding the future, would be quite high. Because of the very existence of financial markets, the precautionary motive of liquidity preference is moderated. On the other hand, the speculative motive exacerbates our demand for liquid resources when a doubt arises about the market capacity to reveal probable future asset valuations. That is the reason why "the stability of the system … should be so dependent on the existence of a variety of opinion about what is uncertain" (Keynes 1973a, p. 172).

As rightly argued by Laidler, "a monetary economy is not an 'as if barter' economy precisely because, when money can be held as a store of value, the rate of interest also acquires a crucial role in portfolio allocation decisions, which may undermine its capacity simultaneously to coordinate the allocation of resources over time" (Laidler 2010, p. 54).[13] To put it the other way around, in a world of 'risk'—namely, in a neutral economy in Keynes' sense of the word—our liquidity preference would simply disappear. There would be no reason to demand an asset that provides no yield. Indeed, money is *par excellence* the most liquid asset: contrary to all other assets, there is no reason for its demand-price to fall when its quantity in circulation rises. Here is to be found the

[13]To put this another way: "decreases in real rates of return on capital create discrepancies between the rate of return on monetary and non-monetary assets. If money's marginal liquidity return is unresponsive to changes in real balance held, a re-equilibration through interest rate changes will not occur in the short run" (Cowen and Kroszner 1994, p. 381).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

fundamental reason for the downward rigidity of the rate of interest that prevents capital accumulation. Since our expectations of future interest rates are anchored in what we consider as a matter of convention to be probable 'states of the world,' to deviate more readily from liquidity requires that our expectations be founded upon firmer judgment.

The Special Issue of Liquid Capital

To conclude our inquiry into the functioning of a monetary economy, let us focus on the concept of liquid capital that Keynes discusses in *The Treatise of Money*. In contrast to "fixed capital"[14] and "working capital,"[15] "liquid capital" is there defined as "the goods in stock, which are yielding nothing but are capable of being used or consumed at any time" (Keynes 1971a, p. 116), whether made up of final goods, raw materials, or commodities.[16] In our view, we can find here a critical application of Keynes' concept of liquidity. Indeed, liquid capital is held in the expectation of—or, unfortunately, as a result of—unforeseen mismatches between supply and demand, and, again, to be ready for unforeseen opportunities. By that very fact, liquid capital yields nothing *per se*. Its sole return comes with disposal, the "potential convenience or security given by [its] power of disposal" (Keynes 1973a, p. 226), as Keynes defines liquidity premium in Chapter 17 of *The General Theory* so that, just like money, its gross yield is equal to its liquidity premium: when redundant stocks are the result of a decision, their liquidity premium is quite high, but this premium falls as redundant stocks accumulate. Finally, Chapter 29 of *The Treatise* demonstrates that the costs of retaining liquid capital are very great, so that there is no incentive to hold large, redundant stocks. Beyond wastage and interest charges, Keynes insists on the risk of capital loss due to unforeseen changes in the value of these stocks in terms of the standard of value. Indeed, "the anticipated normal price, and also the length of time which will elapse before the stocks are absorbed, are matters, not of certainty, but of conjecture. Hence there is a risk that someone must bear" (Keynes 1971b, p. 122). In the short run, both the elasticity of production and elasticity of substitution of capital stocks are zero. Their price fluctuations are then very great, and the same applies for the premium that 'speculators' ask for bearing this liquidity risk. A vicious circle then arises, there being no incentive to hold redundant liquid stocks because of very low net returns: "our present economic system abhors a stock of liquid goods" (Keynes 1971b, p. 130).

It is certainly true that Keynes' concept of liquid capital applies to all kinds of inventories. With regard to our reassessment of the concept of liquidity, let us, however, set final liquid goods (i.e., "hoards" in Keynes' terminology) aside and focus on commodities and raw materials, for which organized markets exist. The reader might

[14]Namely, "the goods in use, which are only capable of giving up gradually their full yield of use or enjoyment" (Keynes 1971a, p. 115).

[15]Namely, "the goods in process, i.e. in course of preparation by cultivation or manufacture for use or consumption, or in transport, or with merchants, dealers and retailers, or awaiting the rotation of seasons" (Keynes 1971a, p. 115).

[16]Final liquid goods are called "hoards" (Keynes 1973a, p. 116). Raw materials might belong to working capital or liquid capital, depending on whether they are "normal stocks required for efficient business" or "surplus stocks" (Keynes 1973a, p. 116). Hence, "liquid capital=stocks plus hoards" (Keynes 1973a, p. 116).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

object that the matter at hand here is not really akin to Keynes, since forward markets for commodities exist, mitigating coordination failures. Second, the relevant duration here is not so long that risk rather than uncertainty prevails. On the first point, Keynes acknowledges that the existence of forward markets might not help the avoidance of sudden large-scale movements in spot prices—mainly because of low elasticity of production and of substitution. Furthermore, and precisely because of high volatility, even in the short period, definite price expectations are quite hard to formulate. In other words, 'fundamental' prices of commodities are not easy to infer—the complete 'states of the world' are not fully known—so that stock holders allocate a low weight to their expectations. The consequences of this for the behavior of the economic system are far-reaching. Indeed, "the efforts to get rid of surplus stocks aggravate the slump, and the success of these efforts retards the recovery" (Keynes 1971b, p. 130). Accordingly, "the slow upward movement of the boom" is the counterpart of "the swift downward movement of the slump" (Keynes 1971b, p. 130).

Let us now apply our reassessment of liquidity as a basis for economic policy. In a monetary economy characterized by the existence of liquid assets, what is the true purpose of public authorities? Above all, when a severe slump occurs, the appropriate policy is definitely to raise *directly* the demand-price of newly produced capital goods through public works. Yet, for the maintenance of full employment, long-term policy requires that this demand-price be kept at a high level through the "socialisation of investment" (Keynes 1973a, p. 378). The prime component of the latter is the introduction of public or semi-public long-term capital schemes. Thanks to the implementation of a "Capital Budget" (Keynes 1980, p. 405), private actors will, at one and the same time, hold more optimistic expectations with quite high weight. Subordinated to budgetary policy and in quite different temporal perspectives, we can find two critical rationales in our reassessment of Keynes' concept of liquidity. In the long run and beyond the issue of the provision of liquidity to private actors, monetary policy ultimately requires that individuals be rendered more prepared to relinquish liquidity at increasingly lower interest rates. In addition to this, adopting a much more short-term perspective, smoothing the trade cycle requires the provision of incentives to entrepreneurs, retailers, and others, holding liquid capital through public warehousing, and, more generally, the implementation of 'buffer-stocks' plans. In the final analysis, such plans aim to confer a higher liquidity premium, as understood above, upon surplus stocks.

We now turn to these two instruments, whose implementation is critical to the full efficiency of budgetary policy.

III. MONETARY POLICY AND THE LONG-TERM INTEREST RATE

One might not agree with Tily when he argues that "for the whole of his life, Keynes was primarily concerned with monetary not fiscal policy" (Tily 2006, p. 657). But it still remains the case that "Keynes was first and foremost a monetary economist, whose views on the appropriate role and mode of monetary policy changed during his lifetime but who hardly denigrated its importance" (Moggridge and Howson 1974, p. 226). Keynes does attribute efficiency to monetary policy—depending on the particular

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

characteristics of time and place.[17] In short, he distinguishes the initial recovery, for which monetary policy might be impotent because of too pessimistic expectations, from the conditions under which a recovery might be sustained.

Here, a summary overview of Keynes' own arguments might be useful. First, in 1930, at the beginning of the Great Depression, Keynes considers the high level of the interest rate to be "if not the root cause of what is happening, at least one of the root causes" (Keynes 1981, p. 391). Two years later, the price of practically every kind of asset fell dramatically. When private initiative has completely collapsed, state intervention ought to *directly* raise the demand-price of newly produced capital goods by implementing public works that raise the marginal efficiency of capital. Such works are designed to "break the vicious circle" (Keynes 1982, p. 158). But that does not mean that monetary policy is set aside. In 1935, after the peak of the Great Depression, Keynes argues that a further decline in the interest rate will be necessary for a full recovery. What about upward swings of the trade cycle and an inflationary boom? On this issue, Keynes is explicit: trying to control the boom with dear money amounts to "playing with fire" (Keynes 1982, p. 389). For him, "the long-term rate of interest must be kept continuously as near as possible to what we believe to be the long-term rate optimum. It is not suitable to be used as a short-period weapon" (Keynes 1982, p. 389). All in all, the interest rate appears to be a quite critical variable that has to be controlled by the state. But this requires a long-run perspective; short-term manipulations should be avoided. That is the reason why Keynes argues:

> I am far from fully convinced by the recent thesis that interest rate plays a small part in determining the volume of investment. It may be that other influences, such as an increase in demand, often dominate in starting a movement. But I am quite unconvinced that low interest rates cannot play an enormous part in *sustaining* investment at a given figure, and when there is a movement from a higher rate to a lower rate in allowing a greater scale of investment to proceed over a very much longer period than would otherwise be possible. (Letter to M. Ezequiel, 7 June 1941, quoted in Moggridge and Howson 1974, p. 242)

In the investigation below, we argue that what Keynes calls for can be labeled 'guidelines for monetary policy'. Now, it should be noticed from the outset that Keynes' ideas and proposals discussed in the following all refer to the particular conditions prevailing in Britain at that time, especially at the institutional level.[18] Two cases are distinguished: we first deal with monetary policy as if only purely exogenous money existed;

[17]See, for example, in 1931: "I think the argument for public works in this country is much weaker than it is in Great Britain. … Here you can function as though you were in a closed system, and … for such a system I would use as my first method operating on the long rate of interest.

> I think in this country deliberate public works should be regarded much more as a tonic to any change of business conditions, but the means of getting back to a state of equilibrium should be concentrated on the rate of interest. That condition not being so in Great Britain, one had to lay great stress on public programs but in this country I should operate on the rate of interest (Keynes, summer 1931, Harris Foundation meeting, quoted in Moggridge and Howson 1974, p. 236).

[18]On this issue, see, in particular, Miller (1985, 1989).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

second, we focus on behavior in the banking sector. In both cases, we emphasize that the monetary policy advocated by Keynes cannot be fully understood if his general meaning of liquidity is not appreciated. Overall, his 'guidelines for monetary policy' implies "the euthanasia of the rentier" (Keynes 1973a, p. 376).

The Case of a Cooperative Banking System

The starting point of the analysis is the inflexibility of the interest rate in the short run, an inflexibility that follows from its conventional character: "*any* level of interest which is accepted with sufficient conviction as *likely* to be durable *will* be durable" (Keynes 1973a, p. 203).[19] Keynes distinguishes the long-term from the short-term interest rate. His main concern is with the former. Indeed, capital assets being long-lived, they are much more sensitive to long rates than to short ones. It is much easier to achieve low short rates than low long rates: the liquidity risk is then much lower. Of course, control over long rates involves the whole rates structure: "it is confidence in the future of short rates which is required to bring down long rates" (Keynes 1982, p. 375). Otherwise, a large spread would be maintained between short and long rates. Such a gap is evidence that the market lacks confidence in the maintenance of these short rates. Consistently with our reassessment of liquidity argued above, this means that a low weight is attributed to these expectations of prospective yield. With regard to the downward slope of the schedule for the marginal efficiency of capital, Keynes' position can be defined as advocating a slowly decreasing long-term rate of interest: "The major purpose of the Treasury should be to establish stable conditions with a gradually declining rate over a long period of years ahead, a necessary condition of which is the creation of a reasonable expectation that this is, in fact, the probable course of events" (Keynes 1982, p. 351).

Capital assets would still be remunerated but, thanks to the abundance of capital (in the sense of its lack of scarcity), there would be no longer any financial gain in deviating from liquidity as such, "so that the functionless investor will no longer receive a bonus" (Keynes 1973a, p. 376).[20] To some extent, in a world in which capital is no longer scarce, in a world of true 'abundance,' this amounts to the following: it is *as if* our uncertainty concerning what the future might hold disappears, since the liquidity premium required by investors has also disappeared. That explains why Keynes states that in such a world, "the aggregate return from durable goods in the course of their life would, as in the case of short-lived goods, just cover their labour-costs *plus* an allowance for risk and the costs of skill and supervision" (Keynes 1973a, p. 375). In short, actuarial risk will still be remunerated, but definitely not liquidity risk. How might we achieve this ultimate goal, both at the political level in mitigating inequalities of wealth, and at the economic level in maintaining full employment?

In Keynes' own words, such an objective is "attainable by attending to three simple principles: by giving the market the increased amount of liquidity which it demands in present circumstances, by waiting until the market is ready, and by promoting a sense

[19]In Hicks' (1946) sense of the word, our expectations are inelastic.

[20]Indeed, "Interest to-day rewards no genuine sacrifice, any more than does the rent of land. The owner of capital can obtain interest because capital is scarce, just as the owner of land can obtain rent because land is scarce" (Keynes 1973a, p. 376).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

of confidence in what the future borrowing policy of the Treasury is going to be" (Keynes 1982, p. 559). His views on monetary policy are well understood if it is kept in mind that "Keynes's policy has … two dimensions: managing 'money' and managing expectations" (Tily 2006, p. 662). Let us analyze these two levels of monetary policy while bearing in mind our reassessment of liquidity as given above.[21]

First, there is the issue of the "supply of liquidity" (Keynes 1982, p. 559) that involves "allowing holders to be just as liquid as they feel disposed to be" (Keynes 1978, p. 414). This is a highly complex issue: "the market should be supplied with securities of different types and maturities in proportions in which it prefers them" (Keynes 1982, p. 115). During World War II, when the borrowing needs of the Treasury became extremely high and Keynes was, in large part, responsible for the commitment of the authorities to a 3% rate,[22] he explicitly aimed to "feed the market" (Keynes 1978, p. 416) with a complex offer of rates and maturities so as to manage the liquidity preference of the private sector. At that time, the Treasury had a crucial advantage over private actors, given their "ability to wait" (Keynes 1982, p. 562). Finally, the authorities should accept borrowing for shorter terms than they would otherwise prefer if this allows them to maintain the long-term rate, and, hence, the whole structure, at its desired level: "the authorities are only fettered in their policy if they themselves have a counter-liquidity preference" (Keynes 1980, p. 391). The point here is to let private actors part with liquidity for a shorter period instead of allowing them to demand a higher liquidity premium.

Let us now turn to the second arm of Keynes' monetary policy: the management of expectations. First and foremost, the current position must be secured—that is, the stability of the long-term interest rate must be ensured. This requires confidence on the part of private actors: "there is no reliable way of establishing a low long-term rate of interest except by fostering a reasonable expectation that the rate of interest will continue low in the future" (Keynes 1982, p. 352). The preliminary step in the reduction of the long interest rate is, thus, a *stable* rate. It is as if each reduction in the long interest rate should be thought definitive by private wealth owners. Keynes' monetary rule would not succeed if wealth owners failed to believe that there was a tendency for long-term rates to decrease. Indeed, wealth owners would part from liquidity just as readily at the current rate for distant maturity, since they expected later rates to be less favorable. To put it another way, they would as readily deviate from liquidity at the now-prevailing low levels since they lacked confidence in the possibility of later rises.[23] As argued by Keynes himself: "Thus a monetary policy which strikes public opinion as being experimental in character or easily liable to change may fail its final objective of greatly reducing the long-term rate of interest" (Keynes 1973a, p. 203). In essence, this is the reason for his opposition to short-run manipulations of the

[21]For an overview of Keynes' monetary policy, see Bibow (2009).

[22]See Moggridge's note in Keynes (1978, p. 393).

[23]Indeed, "We shall not have fully mastered the position until the opposite expectation prevails, namely that the future rate of interest is more likely to go down than up. When that point is reached the more distant maturities will become popular.… As soon as the expectation prevails that the future rate of interest is more likely to be $2^{1/2}$ per cent than 3 per cent, then the public will seek to assure themselves of 3 per cent for as long a term as possible" (Keynes 1978, p. 418).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

long-term rate, since the latter proves to be highly conventional, at least in the short run. Individuals take time to revise their expectations and, above all, they take time to gain more confidence, to attribute more weight to their expectations in respect to non-monetary assets prices. Keynes goes on to point out the fundamental role played by the Treasury in this task of controlling private expectations. Indeed, it is a key point that "they should themselves show confidence in the expectation of a declining rate of interest in the future" (Keynes 1982, p. 351). If the Treasury is entrusted with the task of convincing private actors that they should make firmer judgments, they cannot themselves suddenly revise their own judgment. An erratic monetary policy is evidence that public authorities definitely do not possess superior knowledge about what the future holds. That is basically the reason why the Treasury has to be patient if they want financial investors and the general public to respect their commitment: "it is simply a question of waiting and of making it clear that loans will only be available at a modest rate of interest, becoming still more modest as time goes on" (Keynes 1982, p. 540).

During World War II, Keynes appeared very confident, even enthusiastic, about the ability of the Treasury to manage the market: "all that was necessary was to supply the market with all the liquidity it required, to produce the right psychological atmosphere and expectation, and to allow adequate time to elapse" (Keynes 1978, pp. 158–159). These two sides of monetary policy are intimately related: a supply of liquidity will be ineffective if liquidity preference moves in the opposite direction. And this dual path along which monetary policy operates is critical for understanding how monetary policy can meet with success. As we have shown above, to part with liquidity at lower and lower long-term interest rates at root implies the attribution of an ever-increasing weight to our expectations of non-monetary asset prices in the distant future. This is the fundamental task of monetary policy: to convince us that we should demand ever-lower liquidity premiums.

The Liquidity Preference of the Banking Sector

One of the major private actors has so far been ignored: the banking sector. What happens to the capacity of the authorities to control private-sector expectations once there is an intermediary, in the shape of a banking sector, able to create money? The next step of our study is to open this 'black box' so that we might understand how authorities are also supposed to manage this sector's liquidity preference.

The consequences of the existence of a banking sector for Keynes' liquidity-preference theory have been debated at length. It is commonly considered that the supply of money is exogenous in *The General Theory* since the banking sector is ignored—there is only 'outside' money. Once banks are taken into account, there is 'inside' money and the supply of money becomes endogenous. Even if it is endogenous, the creation of money can be 'politically controlled'[24] insofar as the central bank is able to influence banking sector behavior. In principle, the ability of the banking sector to create money

[24]As Desai clearly reminds us, "the basic issue is about the direction of causality—money to other variables or other variables to money. But as our understanding of the underlying statistical theory concerning causality and exogeneity has advanced in recent years, it must also be added that participants in the controversy conflate the exogeneity of a variable (especially of money) with its controllability by policy" (Desai 1989, p. 136).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

should not be considered incompatible with the liquidity-preference theory. Quite the contrary: as shown below, the task of the central bank is precisely management of the liquidity preference of the banking sector.

The Treatise on Money already deals with this issue of banks' behavior. First, banks are supposed to play the role of intermediaries between 'bullish' and 'bearish' actors on financial markets. Hence, "the banking system of *The Treatise* may facilitate a changing degree of diversity of opinion within the general public (the 'two views' scenario) by providing advances ('financial loans') to the 'bulls' who therefore buy out the 'bears'" (Bibow 2000, p. 541).[25] But, second, the banking sector as a whole may or may not follow private wealth owners in their expectations regarding the price of securities. In other words, banks are truly independent and act in accordance with their own liquidity preference. They play an active role in the determination of the price of investment goods, whether they agree or not with the private wealth owners on future security price: "it follows that the actual price level of investments is the resultant of the sentiment of the public and the behaviour of the banking system" (Keynes 1971a, p. 128). As a matter of principle, liquidity preference should apply to the composition, as well as to the size, of the banks' balance sheets. Because of the particular features of the British institutional system, banks in Great Britain have more discretion in choosing the form of their lending rather than its amount. The everyday job of a bank is to balance the profitability of each asset with regard to its liquidity. Indeed, "bills and call loans are more 'liquid' than investments, i.e. *more certainly realisable at short notice without loss*, and investments are more 'liquid' than advances" (Keynes 1971b, p. 59; emphasis added). As for private wealth owners, what ultimately explains the modification of banks' balance sheets is their liquidity preference. The less confidence that banks place in their expectations, the shorter their commitments: they will wish to keep liquid by holding assets weakly dependent on an—as yet unforeseen—revision of their expectations.

Where there is "the obstinate persistence of a slump" (Keynes 1971b, p. 332), the Keynes of *The Treatise* would advocate "the purchase of securities by the central bank until the long-term market rate of interest has been brought down to the limiting point" (Keynes 1971b, p. 332). Such a policy is called open-market operations "*à outrance*" (Keynes 1971b, p. 331). Member banks are supposed to follow suit, to "second the efforts of the central bank by themselves buying securities" (Keynes 1971b, p. 333). Hence, an open-market policy is supposed to work, thanks to the cooperation of member banks, the latter doing so by virtue of their incentive to make profits. Finally, monetary policy will prove efficient only if private wealth owners follow in turn: "the price of bonds will rise unless there are many persons to be found who, as they see the prices of long-term bonds rising, prefer to sell them and hold the proceeds liquid at a very low rate of interest" (Keynes 1971b, p. 333).

The Liquidity Trap

What about the 'liquidity trap'? It should be, first of all, noticed that this notion is "explicitly repudiated by Keynes" (Leijonhufvud 1968, p. 158). As a matter of fact, the

[25]On the 'two views' on the stock exchange, see especially Keynes (1971a, pp. 224–226).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

'liquidity trap' can arise at any level of the interest rate, since "the limitations of monetary management is not at all restricted to this hypothetical absolute floor" (Bibow 2000, p. 556). As seen previously, at issue here is driving down expectations of future rates. Actually, two situations have often been confused. The first issue is when the liquidity preference of anyone becomes absolute because "one no longer has confidence in one's own expectations" (Dos Santos Ferreira 2000, p. 278). Of this, Keynes acknowledges that "I know of no example of it hitherto" (Keynes 1973a, p. 207). By contrast, there is the case when speculators echo each other, so that opinions on future rates converge on a focal point. Here "an *excess* of coordination of expectations—unanimity among speculators—is then the source of a coordination *failure* of households' and enterprises' inter-temporal choices, the latter being the immediate cause of unemployment" (Dos Santos Ferreira 2000, p. 278).

Is this result qualified once the behavior of the banking sector is taken into account? Not at all. Indeed, the matter at hand turns into the relationship between banks and private wealth owners. Bibow reminds us that "as far as the general public is concerned, moving into cash means moving into bank deposits" (Bibow 2000, p. 557). If the central bank fails to drive down the interest rate, this is precisely because banks refuse to buy back securities sold by bears. In such a case, the central bank has failed to convince banks of the downward tendency of the interest rate, so that the liquidity premium demanded is still too high. Hence, "essentially, liquidity traps represent communication failures between the central bank and her clients: the banks" (Bibow 2000, p. 558).

From this, we may conclude that the liquidity preferences of both private individuals and the banking sector turn out to be a highly critical variable open to political control through state intervention. In 1920, Keynes considered "discrimination" (i.e., rationing) to be an alternative to dear money. But "discrimination, in order to be effective, presumes a *very high degree of socialisation of our whole industrial structure, so far as it concerns the supply of capital*" (Keynes' notes of interview with the Chancellor, February 15, 1920; quoted by Howson 1973, p. 458), which was unfortunately not the case at that time. During World War II, the Treasury had become the principal borrower. This new institutional set-up made it easier to manage the complete structure of interest rates, especially if the Treasury accepted borrowing on shorter terms than they had initially wished.[26] When he turned, in 1943, to dealing with "[t]he long-term problem of full employment," Keynes argues: "If two-thirds or three quarters of total investment is carried out or can be influenced by public or semi-public bodies, a long-term programme of a stable character should be capable of reducing the potential range of fluctuation to much narrower limits than formerly" (Keynes 1980, p. 322).

Such a program would solve the coordination failure in a twofold way. First, such a program would allow private actors to develop long-term expectations corresponding to a quite high marginal efficiency of capital. But, beyond that, we would now know that the state is involved in the maintenance of full employment. As a result, such a

[26]Moreover, discrimination has been enforced, thanks, for example, to "deferred pay" advocated by Keynes in *How to Pay for the War* (1940), or the Treasury Deposit Receipts. As described by Howson (1988), the Treasury developed in 1940 the TDRs by which major banks were *obliged* to lend to the Treasury: "of longer maturity (6 months) and non-marketable, TDRs were less liquid than Treasury bills and carried a slightly higher interest rate (1 1/8%)" (Howson 1988, p. 252).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

program would strengthen the confidence of private actors in their expectations. Since they would have less and less reason to suddenly revise their long-term expectation, private individuals would henceforth accept parting with liquidity at lower and lower interest rates. As far as the banking sector is concerned, Keynes was well aware of its increasing role among private investors. Banks are able to form their own expectations and, consequently, have their own liquidity preference. They may accordingly follow the central bank in their attempt to lower the long-term interest rate, or not. Hence, the more important private actor to be convinced of the future trend of interest rates is actually the banking sector. To this end, the central bank must convince the banks of their possession of sufficient "ammunition" and the will to use it. Ironically, Keynes did not consider that the task would be too difficult to achieve in an economy like our own, which is 'socialising itself,'[27] in which public and semi-public bodies play a growing role.

IV. THE BUFFER-STOCK PLAN

On the issue of commodity-price control, Keynes knew what he was talking about, having been involved in speculation since the early 1920s.[28] It has been rightly argued that Keynes' pleas are far from an "exotic outlier amid the body of his work" (Dimand and Dimand 1990, p. 124). Indeed, "Keynes's scheme from the outset focused on stabilizing commodity prices in order to reduce producer risk and to smooth the trade cycle" (Dimand and Dimand 1990, p. 121). These plans are usually interpreted as necessary to *directly* control commodity prices and so avoid large swings in the trade cycle.[29] But, viewed in this narrow way, there are statements by Keynes that remain puzzling; for example, his claim that stocks of commodities can be interpreted as "a form of central banking reserves alternative to gold" (Keynes 1982, p. 462).

Our aim here is definitely not an exhaustive examination of the various schemes that Keynes proposed. Instead, we intend below to shed light upon a crucial element hitherto overlooked by commentators. In our opinion, Keynes' schemes to stabilize commodity prices are, in fact, perfect rationales for his concept of liquidity, in the sense that they are basically intended to raise the liquidity premium on commodities. [30]

Let us start with Keynes' 1938 scheme for commodity-prices stabilization presented in his paper entitled "The Policy of Government Storage of Foodstuffs and Raw Materials."[31] Keynes' aim is to dampen very significant price fluctuations within a

[27]See *The End of Laissez-faire* (Keynes 1972, pp. 272–294).

[28]Fantacci, Marcuzzo, and Sanfilippo (2010) address the issue of Keynes as a speculator, and more precisely the links to be suggested between his practice and his theory of price determination on raw material markets.

[29]Keynes himself argues that they aim to vanquish "the fundamental malady of the trade cycle" (Keynes 1980, p. 121).

[30]The fact that the stocks to be increased are liquid capital and not merely working capital is clearly apparent in the following quotation: "It might prove advisable to require a certain notice—say, a month—of delivery and withdrawal and a minimum period of deposit—say, three months—so as not to attract *normal trading stocks which would be held here in any case*" (Keynes 1982, p. 465; emphasis added).

[31]Reproduced in Keynes (1982, pp. 456–470).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

given year, although he shares "the suspicion with which attempts at the long-period stabilisation of individual prices are rightly viewed" (Keynes 1982, p. 460). Not surprisingly, his first claim is for the collection of statistics on the state of stocks (both 'visible' and 'invisible' stocks held by manufacturers). Obviously, better-informed actors take more efficient decisions so that "complete facts about fluctuations in total stocks would be of great value in handling the trade cycle" (Keynes 1982, pp. 463–464). Second, if, as a matter of principle, outright storage by public authorities is not excluded, the basic goal of this device is "for the provision or subsidy of storage and finance for the purpose of inducing traders to hold augmented stocks" (Keynes 1982, p. 464). This incentive would be *directly* obtained thanks to the lowering of carrying-costs. There would, first, be warehouse facilities (at no charge, or a nominal one). Next, as far as finance is concerned, government would advance up to 90% of the market price of the commodity at the date of storage, again at no charge or at an interest rate equal to the Treasury bill rate (which was very low at that time). Both components of carrying-costs are supposed to be lower if borne by public authorities: collective warehousing facilities are supposed to be more efficient and less expensive than private ones; interest charges would also be reduced, thanks to publicly pooled borrowing instead of private borrowing. These stocks would still be in the ownership of manufacturers and retailers "who would run the risk of price changes" (Keynes 1982, p. 465). Thanks to this scheme, carrying-costs would be lower, commodity prices would no longer be subject to large and barely foreseeable short-period fluctuations, and private traders would hold stocks that were ultimately increased.

In order to link this scheme for public warehousing with our general concern for Keynes' concept of liquidity, we now have to look at *indirect* effects. Very large monthly fluctuations are henceforth diminished, so that future prices are more easily predictable. With better knowledge of the future probable state of commodity markets, individuals make firmer judgments. In other words, the liquidity premium of commodity stocks is now greatly increased, so holding such stocks is further encouraged. A second-round effect is that private holders no longer need to insure against liquidity risk, so the insurance premium in respect of price fluctuations (which significantly increases carrying-costs) are, in turn, lowered.[32] All in all, for both reasons, commodities extensively held in store would be susceptible to a lower degree of price fluctuation. Hence, their greater marketability should not be viewed merely as synonymous with their higher liquidity, but rather as a consequence of it.[33] If one keeps in mind that raw materials share with any 'monetary asset' the characteristics of a very low elasticity of

[32]The reasoning here implies Keynes' previous discussion on 'backwardation' on commodity markets. In short, "this theory held that futures prices were downward-biased estimates of the spot prices that would prevail when contracts expired, and attributed this bias to a risk premium" (Dimand and Dimand 1990, pp. 114–115). Beyond significant carrying-costs, backwardation explains the low incentive to hold commodity stocks.

[33]What is striking is the vocabulary used by Keynes here. If these stocks were held elsewhere in the British Empire or in Canada, Keynes considers that with this type of foreign investment, "the capital involved is *absolutely safe*" (Keynes 1982, p. 468; emphasis added). The income derived would not be direct: instead of dividend or interest, it would be "in the shape of *security* and in the facility to avoid paying excessive prices for purchases made subsequently in *circumstances of unusual need*" (Keynes 1982, p. 468; emphasis added). Keynes even speaks of "an accumulation of … *liquid* forms of wealth" (Keynes 1982, p. 468; emphasis added). In our opinion, this wording is far from casual.

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

production and of substitution during the period under consideration, it can now be understood why public warehousing is considered to be "a natural evolution of the policy of holding liquid stocks of gold outside the banking system" (Keynes 1982, p. 469). Indeed, their holding would be roughly considered as 'safe' as the holding of gold. As for private actors, such as retailers and manufacturers, this scheme basically consists of increasing the liquidity premium of 'surplus stocks' of raw materials and commodities, and, hence, transforming them into closer substitutes for monetary assets—at least in the short period under consideration that is the relevant one for them. In line with his general purpose concerning public works, "the technique adopted, so far from interfering with the ordinary course of trade, would facilitate it" (Keynes 1982, p. 466). Here is to be found a critical application of Keynes' middle-way doctrine.[34] According to this scheme, the trade cycle would be smoothed out, not because state intervention has *directly* damped price fluctuations, as is usually understood, but rather because stocks have been rendered more *liquid*—in Keynes' peculiar sense of the word. This dampens the trade cycle in both ways: it prevents the release of large surplus stocks that would worsen the downturn; it prevents the initiation of an inflationary process due to shortages during the upturn.

Is our interpretation of Keynes' views on the holding of commodities subject to qualification when we turn to the arguments elaborated during World War II? There are several versions of Keynes' buffer-stock plan, depending on his answers to criticisms coming from the Treasury, the Bank of England, and other directions. What is sure is that the buffer-stock scheme is much more comprehensive than the public warehousing scheme previously advocated. Again, Keynes' basic concern is for short-run variability: "we should aim at combining a short-period stabilisation of prices with a long-period price policy" (Keynes 1980, pp. 114–115). The essence of this scheme is that, first, a committee would determine for each commodity a "long-term *economic price*" (Keynes 1980, p. 123), this basic price being subject to revision at regular intervals. In this way, the committee will "help us to defeat the dark forces of time and ignorance which envelop our future" (Keynes 1973a, p. 155), as argued in *The General Theory*. Of course, uncertainty remains about future market conditions that determine this basic price, but it has been severely mitigated: there is no more room for conventional valuations open to sudden collapse. That is, thanks to their superior knowledge, public authorities are able to provide private actors with reliable information at regular intervals. Second, the committee would buy if the market price goes below a certain level, and would sell above the upper limit—Keynes suggests, for example, +/-10% around the determined basic price. Hence:

> Within these reasonably wide limits free and competitive markets would handle the trade as well as they would in the absence of control. The safeguards against excessive price fluctuations provided by the Control should allow merchants to hold stocks and *to operate with confidence within the determined range* and thus relieve the Control of a multiplicity of detailed operations in day-to-day business. (Keynes 1980, p. 116; emphasis added)

Due to the specific nature of commodities, the relevant period for traders is the short one. Thanks to buffer stocks, private holders now fully know the probable 'states of the

[34]See O'Donnell (1989) on this issue of Keynes' middle-way doctrine.

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

world' concerning commodity prices—true uncertainty has been erased for the relevant time period. In Keynes' opinion, the narrow range around this basic price would prevent destabilizing speculation: speculators would be stabilizing only in acting counter-cyclically within the range so defined.[35] From our point of view, this is the crucial point of a buffer stock: to give private actors confidence in their current expectations—actuarial risk being, of course, not avoided. The liquidity premium of commodities is, thus, sharply increased. This being done—and again, perfectly in line with his 'middle-way doctrine,' which underlies all his political counsel—Keynes' purpose is clearly to refrain from interfering with the usual functioning of the market, while eradicating "the fundamental malady of the trade-cycle" (Keynes 1980, p. 121).

Whereas monetary policy ultimately aims to discourage retention of money by wealth owners by lowering the liquidity premium conferred upon monetary assets, public warehousing schemes and 'buffer-stocks' devices aim ultimately to encourage the holding of redundant stock by the reduction of their carrying-costs, but above all through the rise of their liquidity premium. They avoid sharp movements in commodity prices, and, in turn, prevent volatile spillover effects for other markets, whether in upswing or downswing. Thanks to such plans, "we have at our disposal a weapon capable of producing large effects by rapid action, and of operating in the negative as well as in the positive direction" (Keynes 1980, p. 121).

V. CONCLUSION

On the theoretical level, it has been shown that liquidity, according to Keynes, is a concept that is much more comprehensive than commonly thought today: an asset is not liquid merely because of the ease with which it can be marketed. Under particular conditions, Keynes would regard land as a liquid asset, a conception that runs counter to current conceptions. As far as economic policy is concerned, our restatement of Keynes' concept of liquidity has major implications. Indeed, "first and foremost, the socialisation of investment aims to ensure expectations to a future state of full employment. But, in a world of uncertainty, private investors must also have confidence in their expectations" (Rivot 2011, p. 799). That means that the state is supposed to assist private actors in forming more certain and reliable judgments. Budgetary policy remains the vital weapon to ensure full employment, in that it directly "allows control both of the private sector's expectations so as to ensure a price-level for newly produced capital goods corresponding to the level of full employment in the private sector, and also the confidence placed in these expectations" (Rivot 2011, p. 800). Liquidity and confidence then become a matter of major concern for public authorities. To an extent, both monetary policy and buffer-stock schemes are subordinated to budgetary policy. They are the two other weapons of the socialization of investment. They, too,

[35]The way in which long-term and short-term considerations are related is well stated in the following quotation: "our object should be to combine the long-period advantages of free-competition with the short-period advantages of ensuring that the necessary changes in the scale and distribution of output should take place *steadily* and *slowly* in response to the steady and slow evolution of the underlying trends" (Keynes 1980, p. 126).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

entail control over the state of expectations in the private sector, and, more precisely, over the confidence in which these expectations are held. On the one hand, in a very long-run perspective, monetary policy aims to lower the liquidity premium granted to monetary assets. On the other, and in a much shorter-term perspective, buffer stocks aim by contrast to raise the liquidity of commodities. Beyond public works and the implementation of a capital budget, both monetary policy and buffer stocks should be regarded as instruments highly relevant for a consistent employment policy—at least in Keynes' view.

What lessons can be learned today from this journey into the past? Just before the sudden downturn in the fall of 2008, the salient feature of our contemporary world was an historical rise of commodity prices, especially in the prices of agricultural raw produce, metals, and oil. The 2000s have witnessed closer links between primary commodity and financial markets. Second, and roughly at the same time, the subprime crisis in the US mortgage market spread to other segments of financial markets that had hitherto been considered 'safe.' When the issue of the transmission of liquidity shocks is raised today, liquidity is roughly defined as 'easy marketability.'[36] But what has here been forgotten is the basic reason why, beyond easy marketability or perfect convertibility, liquidity really means "more certainly realisable at short notice without loss" (Keynes 1971b, p. 59).

Keynes' concept of liquidity makes it possible to present a fresh perspective on these two recent episodes. First, until now, "considerations on how to mitigate the impacts of instability in commodity markets have focused on the use of market-based commodity price risk management instruments" (United Nations Conference for Trade and Development 2008, p. 43). The problem of higher price volatility due to excessive speculation is made even more serious by the fact that a strong link is observed between price volatility of commodities and the rate of growth in commodity-dependent economies. Here is to be found a striking example of the "dilemma" (Keynes 1973a, p. 170) that exists in organized markets. Indeed, it appears that market liberalization and financialization of commodities did not have the expected results; far from it: "there is widespread dissatisfaction with the outcomes of unregulated financial and commodity markets, which fail to transmit reliable price signals for commodity producers" (United Nations Conference for Trade and Development 2008, p. 44). From Keynes' perspective, inefficiencies in commodity markets can be basically explained by the lack of liquidity premium conferred on these assets—even if easily marketable—in the sense that private holders cannot but have low confidence in their expectations of future spot prices. Buffer stocks are, hence, schemes that do not entail interference with the day-to-day functioning of the market through direct control over prices. The true purpose of these plans would be to render private actors in those markets more confident in their expectations, so that the fundamental principles of *laissez-faire* would be preserved. Second, among the lessons to be learned from the subprime crisis, it might be thought worth noting that an asset considered to be a close substitute for money—as was the case with asset-backed commercial paper (ABCP)—can suddenly have its probable future value revised and can become highly dependent upon unforeseen changes in our long-term state of expectations. In Keynes' perspective, this 'monetary' asset suddenly loses most of its liquidity premium. Lower marketability of

[36]As stated by IMF experts: "consistent with the existing literature, market liquidity is an asset-specific characteristic measuring the ease which positions may be traded without significantly affecting their corresponding asset price" (Frank, Gonzales-Hermosillo, and Hesse 2008, p. 5).

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

assets, as was the case, for example, with mortgage-backed securities in 2007, should be viewed as a consequence of, rather than synonymous with, lower liquidity. Assets hitherto considered to be close substitutes for money now encounter a very large liquidity risk. Keynes explicitly dealt with this "competitive panic to get liquid" (Keynes 1982, p. 40) in 1932. It is true that in such cases, "each individual who succeeds in getting more liquid forces down the price of assets in the process of getting liquid, with the result that the margins of other individuals are impaired and their courage undermined" (Keynes 1982, p. 40), a reasoning that is, at first sight, in line with the transmission of 'liquidity shocks' and 'liquidity spirals' as understood today. Yet, this "ghastly internecine struggle" (Keynes 1982, p. 40) does not merely mean that everyone flees markets on which asset marketability has seized up so that merely restoring the convertibility of assets would be enough to solve the problem. More importantly, this means that the extent to which our knowledge of future 'states of the world' is lacking has suddenly been revised. In Keynes' words, "the real explanation [of this lack of confidence] is to be found in the perplexity and discomfort which the business world feels from being driven so far from its accustomed moorings *into unknown and uncharted waters*" (Keynes 1982, p. 324; emphasis added). That means that we know much less than previously thought about what might happen in the long run, so that the confidence we can place in our expectations is weak.

What is the most liquid asset, and to what extent it is deemed worthy of accumulation, is partly a matter of convention and partly a matter of policy on the part of public authorities: it might be money, gold, or even, as in the ancient times, land. In a monetary economy, management of liquidity preference turns out to be a key task for the authorities. This basically means providing individuals with 'better knowledge' regarding the future 'states of the world,' so as to help them make firmer judgments on the basis of their expectations.

REFERENCES

Bibow, J. 2000. "On Exogenous Money and Bank Behaviour: The Pandora's Box Kept Shut in Keynes' Theory of Liquidity Preference." *The European Journal for the History of Economic Thought* 7: 532–568.

Bibow, J. 2009. *Keynes on Monetary Policy, Finance and Uncertainty*. London: Routledge.

Cowen, T., and R. Kroszner. 1994. "Money's Marketability Premium and the Microfoundations of Keynes's Theory of Money and Interest." *Cambridge Journal of Economics* 18: 379–390.

Davidson, P. 1972. "Money and the Real World." *The Economic Journal* 82: 101–115.

Davidson, P. 1978. "Why Money Matters: Lessons from Half a Century of Monetary Theory." *Journal of Post-Keynesian Economics* 1: 46–70.

Davidson, P. 2010. "Black Swans and Knight's Epistemological Uncertainty: Are These Concepts Also Underlying Behavioural and Post-Walrasian Economics?." *Journal of Post-Keynesian Economics* 32: 567–570.

Desai, M. 1989. "Endogenous and Exogenous Money." In J. Eatwell, et al., eds., *The New Palgrave*. London: Macmillan: 146–150.

Dimand, R. J. and M. A. Dimand. 1990. "J. M. Keynes on Buffer Stocks and Commodity Price Stabilization." *History of Political Economy* 22: 113–123.

Dos Santos Ferreira, R. 2000. "Keynes et le développement de la théorie de l'emploi dans une économie monétaire." In G. Béraud and G. Faccarello, eds., *Nouvelle Histoire de la Pensée Economique*. Volume 3. Paris: La Découverte, pp. 236–293.

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

Fantacci, L., M. C. Marcuzzo, and E. Sanfilippo. 2010. "Speculation in Commodities: Keynes' 'Practical Acquaintance with Future Markets.'" *Journal of the History of Economic Thought* 32: 397–418.

Frank, N., B. Gonzales-Hermosillo, and H. Hesse. 2008. "Transmission of Liquidity-Shocks: Evidence from the 2007 Subprime Crisis." *IMF Working Paper*, WP/08/200. (http://www.imf.org/external/pubs/ft/wp/2008/wp08200.pdf).

Hayes, M. G. 2006. *The Economics of Keynes, A New Guide to* The General Theory. Cheltenham: Edward Elgar.

Hicks, J. R. [1946] 1953. *Value and Capital, An Inquiry into Some Principles of Economic Theory*. Oxford: Clarendon Press.

Helbling, T., V. Mercer-Blackman, and K. Cheng. 2008. "Riding a Wave." *Finance and Development* 45 (1). (http://www.imf.org/external/pubs/ft/fandd/2008/03/helbling.htm#author)

Howson, S. 1973. "'A Dear Money Man'?: Keynes on Monetary Policy, 1920." *Economic Journal* 83: 456–464.

Howson, S. 1988. "Cheap Money and Debt Management in Britain 1932–51." In P. L. Cottrel and D. E. Moggridge, eds., *Money and Power: Essays in Honour of L. S. Pressnell*. Basingstoke: Macmillan, pp. 227–289.

Keynes, J. M. 1971a. *The Collected Writings of John Maynard Keynes*. Volume V: *A Treatise on Money*. Volume I: *The Pure Theory of Money*. London: Macmillan.

Keynes, J. M. 1971b. *The Collected Writings of John Maynard Keynes*. Volume VI: *A Treatise on Money*. Volume II: *The Applied Theory of Money*. London: Macmillan.

Keynes, J. M. 1972. *The Collected Writings of John Maynard Keynes*. Volume IX: *Essays in Persuasion*. London: Macmillan.

Keynes, J. M. 1973a. *The Collected Writings of John Maynard Keynes*. Volume VII: *The General Theory of Employment, Interest and Money*. London: Macmillan.

Keynes, J. M. 1973b. *The Collected Writings of John Maynard Keynes*. Volume VIII: *Treatise on Probability*. London: Macmillan.

Keynes, J. M. 1973c. *The Collected Writings of John Maynard Keynes*. Volume XIV: *The General Theory and After: Defense and Development*. London: Macmillan.

Keynes, J. M. 1978. *The Collected Writings of John Maynard Keynes*. Volume XXII: *Activities 1939–1945: Internal War Finance*. London: Macmillan.

Keynes, J. M. 1979. *The Collected Writings of John Maynard Keynes*. Volume XXIX: *The General Theory and After: A Supplement*. London: Macmillan.

Keynes, J. M. 1980. *The Collected Writings of John Maynard Keynes*. Volume XXVII: *Activities 1940–1946: Shaping the Post-War World: Employment and Commodities*. London: Macmillan.

Keynes, J. M. 1981. *The Collected Writings of John Maynard Keynes*. Volume XIX: *Activities 1922–1929: The Return to Gold and Industrial Policy*. London: Macmillan.

Keynes, J. M. 1982. *The Collected Writings of John Maynard Keynes*. Volume XXI: *Activities 1931–1939: World Crises and Policies in Britain an America Preparation*. London: Macmillan.

Knight, F. H. [1921] 1940. *Risk, Uncertainty and Profit*. Boston: Houghton Mifflin.

Koutsobinas, T. T. 2011. "Liquidity Preference in a Portfolio Framework and the Monetary Theory of Kahn." *Cambridge Journal of Economics* 35: 751–769.

Laidler, D. 2010. "Lucas, Keynes, and the Crisis." *Journal of the History of Economic Thought* 32: 39–62.

Leijonhufvud, A. 1968. *On Keynesian Economics and the Economics of Keynes*. Oxford: Oxford University Press.

Miller, E. 1985. "Keynesian Economics as a Translation Error: An Essay on Keynes' Financial Theory." *History of Political Economy* 17: 265–285.

Miller, E. 1989. "Keynes' Monetary Theory and Bank Reserves in Britain." *Atlantic Economic Journal* 27: 24–34.

Moggridge, D. E., and S. Howson. 1974. "Keynes on Monetary Policy, 1910–1946." *Oxford Economic Papers* 26: 226–247.

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press

North, D. C. 1991. "Institutions." *Journal of Economic Perspectives* 5: 97–112.

O'Donnell, R. M. 1989. *Keynes: Philosophy, Economics and Politics. The Philosophical Foundations of Keynes's Thought and Their Influence on His Economics and Politics*. Houndmills, Basingstoke, Hampshire, and London: Macmillan.

Rivot, S. 2011. "Special Remedies for Special Causes: Involuntary Unemployment in Keynes' Political Writings." *Cambridge Journal of Economics* 35: 785–803.

Roncaglia, A. 2009. "Keynes and Probability: An Assessment." *The European Journal of the History of Economic Thought* 16: 489–510.

Runde, J. 1994. "Keynesian Uncertainty and Liquidity Preference." *Cambridge Journal of Economics* 18: 129–144.

Skidelsky, R. 2009. *Keynes, The Return of the Master*. London: Penguin Books.

Terzi, A. 2010. "Keynes' Uncertainty Is Not about White or Black Swans." *Journal of Post-Keynesian Economics* 32: 559–565.

Tily, G. 2006. "Keynes's Theory of Liquidity Preference and His Debt Management and Monetary Policies." *Cambridge Journal of Economics* 30: 657–670.

United Nations Conference on Trade and Development. 2008. *Trade and Development Report 2008, Commodity Prices, Capital Flows and the Financing of Investment*. New York and Geneva: United Nations Publications.

https://doi.org/10.1017/S1053837213000230 Published online by Cambridge University Press