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A Reinterpretation of Liquidity Preference

This paper reinterprets Keynes's theory of liquidity preference to emphasise its reliance on liquidity. It argues that liquidity preference is not based on either the demand for money, the most tradable asset, or a theory of bearishness. Instead, liquidity preference represents a demand for price-protected assets, most directly inside and outside money, but also quasi-money such as self-liquidating assets and security repurchase agreements (repo). The theory of liquidity preference explains that the public is willing to forgo interest income to hold price-protected assets due to the capital and price uncertainty associated with relying on market liquidity, or how easy it is to convert an asset into money. It follows that the rate of interest is a monetary phenomenon and is determined independently of saving and investment.

Key Words: Liquidity, Liquidity Preference, Asset Pricing.

JEL classifications: E41, E43

1. Introduction

Keynes's theory of liquidity preference (Keynes, 1936) makes a clean break from the theories of the rate of interest and asset-pricing that are based on pure exchange and general equilibrium. The theory of liquidity preference stipulates that the rate of interest is a monetary phenomenon, not one that is driven by the forces of productivity and thrift as suggested by the theory of loanable funds. As observed by Chick (1983, p. 174, original emphasis), 'Keynes argued that his theory of interest follows naturally from what interest *is*: the price of having money now instead of later; the price of being liquid.' In contrast to the loanable funds theory of interest, Keynes's theory of liquidity preference states that the rate of interest is not a reward for saving, but instead is a reward for not hoarding cash, or 'parting with liquidity for a specified period' (Keynes, 1936, p. 167).

A reward for not hoarding money is required because of the 'convenience of liquidity' which mitigates the 'existence of *uncertainty* as to the future of the rate of interest' (Keynes,

1936, p. 168, original emphasis). The risk in holding bonds, for example, is that ‘if a need for liquid cash may conceivably arise before the expiry of n years [the length of the bond], there is a risk of a loss being incurred in purchasing a long-term debt and subsequently turning it into cash, as compared with holding cash’ (Keynes, 1936, p. 169). If an asset with capital risk needs to be converted into money at some point in the future, its value at that time is uncertain. In essence, cash provides protection against asset-price risk.

This paper questions many of the standard interpretations of Keynes’s theory of liquidity preference and argues that a re-interpretation is necessary. The paper opens by briefly outlining the motives that drive a demand for liquidity in Section 2 to form as a basis for interpretation. It then proceeds to show that liquidity preference cannot be based on market liquidity (Section 3), a narrow demand for money or portfolio balancing (Section 4), or a theory of bearishness (Section 5). Section 6 concludes with the interpretation that liquidity preference is a willingness to forgo interest income to hold price-protection assets due to the capital uncertainty associated with relying on market liquidity.

2. Motives for Liquidity

According to Keynes, four motives drive the demand for liquidity: the transactions, finance, precautionary and speculative motives (Keynes, 1936, 1937a). The transactions, finance and precautionary motives are assumed to be largely interest-inelastic; only the speculative motive is sensitive to the rate of interest (Keynes, 1936, p. 199). The transactions motive covers the liquidity required to conduct current exchanges and can therefore be interpreted as the opening demand in the monetary circuit (Graziani, 1990), with its demand related to the cost of output or income. Similarly, the finance motive is the demand for money to begin an investment project, and, as such, is the investment equivalent of the transactions motive (Bibow, 1995), since it reflects the fact that planned investment requires finance to begin production (Keynes, 1937a, p. 246).

The precautionary motive represents a desire to hold a reserve of liquid assets as a protection against uncertainty. It provides ‘for contingencies requiring sudden expenditure and for unforeseen opportunities of advantageous purchases, and also to hold an asset of which the value is fixed in terms of money to meet a subsequent liability fixed in terms of money’ (Keynes, 1936, p. 196). It is here that an emphasis on liquidity over money must be recognised. A liquid reserve need not consist solely of the medium of exchange itself; assets with a price-protection feature, convertible into the medium of exchange with little price risk, will serve the same purpose (Ricks, 2011). The precautionary motive is satisfied not just by money-proper, but also by short-term assets that can provide ‘portfolio diversification for precautionary purposes’ (Chick, 1983, p. 202). It is a mistake to focus solely on money-proper, but, since many price-protected assets also yield a rate of interest, care must be taken in interpreting the precautionary motive and the determination of the rate of interest.

Finally, the speculative motive displays the most sensitivity to the rate of interest. The holdings of liquid assets that an investor demands depend on how far the current rate of interest differs from the investor’s perceived ‘safe’ level of the rate of interest (Keynes, 1936, p. 201). Keynes first presents the theory of liquidity preference in a two-asset model comprising only two types of asset: ‘money’ or ‘cash’; and ‘debts’ or ‘bonds’. Thereafter the theory is generalised to consider all assets. In the two-asset model, when the current rate is below the safe level, there is a strong desire to maintain holdings of cash, to avoid capital losses by delaying the purchase of debt until the rate has risen closer to the safe level. For those with the opposite belief, ‘the purchase of debts will be a preferable alternative to holding cash’ (Keynes, 1936, p. 170, n. 1). Therefore, the

individual, who believes that future rates of interest will be above the rates assumed by the market, has a reason for keeping actual liquid cash, whilst 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, 1936, p. 170)

Importantly, the speculative motive depends on an organised market for trading assets, for ‘in the absence of an organised market, liquidity-preference due the precautionary-motive would be greatly increased; whereas the existence of an organised market gives an opportunity for wide fluctuations in liquidity-preference due to the speculative-motive’ (Keynes, 1936, pp. 170-171). The existence of organised markets, which can be interpreted as the presence of dealers that allow easy conversion of assets into money, or market liquidity, presents an individual with the ‘opportunity to revise his judgement and change investment’ (Keynes, 1936, p. 153). An organised exchange providing market liquidity gives investors some assurance of saleability, but Keynes highlights the uncertainty regarding asset prices at the time of sale. Organised markets allow for the existence of an observable interest rate that the public can compare to their subjective safe interest rates.

3. Liquidity Premium

In Keynes’s generalised model, the total return expected from holding an asset is given by $a + q - c + l$, where a is the expected price appreciation of the asset measured in the unit of account, q is the yield or output of the asset, c is the carrying cost, and l is the liquidity premium (Keynes, 1936, pp. 225-228). The attributes q , c and l are measured in terms of the asset itself, so a is an adjustment factor necessary to convert each asset’s return into the common unit of account, and hence become comparable across assets.

The meaning of the liquidity premium l , however, is somewhat ambiguous and requires careful interpretation. Keynes describes it as the return that an investor is willing to forgo for the ‘potential convenience’ of ‘the power of disposal over an asset’ (Keynes, 1936, p. 226). On the surface, it is tempting to interpret this liquidity premium as a reference to the convenience of saleable assets with deep market liquidity, except that Keynes’s premium

is one of convenience given to liquid assets, not an extra return required to compensate for illiquidity. Keynes's liquidity premium is highest for money itself, whereas the premia for machinery, wheat and houses are likely to be 'negligible' (Keynes, 1936, pp. 226-227). The size of the liquidity premium for non-money assets is ambiguous, and so clarification must be made as to how Keynes's liquidity premium relates to market liquidity.

Keynes uses the term 'liquidity' in both *A Treatise on Money* (Keynes, 1930a, 1930b), and in the *General Theory* (Keynes, 1936) to put forward the theory of liquidity preference. As highlighted by Beggs (2015), subsequent interpretations of these usages have developed along two 'careers' or 'strands' and have consequently affected the understanding of liquidity preference. The *Treatise* strand found its home in the 'practical world of bankers, central bankers, and policymakers' (Beggs, 2015, p. 1), whereas the strand stemming from the *General Theory* was restricted to the realm of theoretical economics.

The second strand is considered in Section 4. The first strand, as stated in the *Treatise* when ranking the portfolio choices of bankers describes 'more "liquid"' as 'more certainly realisable at short notice without loss' (Keynes, 1930b, p. 67). Hicks employs this description as a definition of liquidity that could 'be reinterpreted so as to give it a wider reference' (Hicks, 1989, p. 64). Again, it would be tempting to align this 'definition' with market liquidity and the ability to trade immediately with certainty in efficient markets. The difficulty with this characterisation is the interpretation of the final characteristic: without loss. The unresolved question is: without loss relative to what? For Hicks (1962, p. 790), the answer is that, for a liquid asset, the 'price at which it is realisable at short notice is much the same as that at which it is realisable at longer notice.' Hicks concludes that the term 'liquidity' refers to marketability (that is, market liquidity) relative to an absolute fundamental or long-period price, supported by an organised market of dealers (Hicks, 1962, p. 791).

The attempt to interpret liquidity preference within a framework built on market liquidity is a direct consequence of the commodity, as opposed to the credit, view of money (see Ingham, 2004). The view that money is simply the most saleable commodity limits the analysis of liquidity to market liquidity only. This ontological starting point leads Bronfenbrenner (1945) and Hicks (1962), among others, to conclude that liquidity preference can be satisfied by a selection of assets from across a spectrum of assets ranked by market liquidity. To illustrate, consider Bronfenbrenner's description of 'perfect liquidity':

By calling a commodity "perfectly liquid" in a given use we mean that it is *absolutely certain* that its holder can obtain for a unit of the commodity at least *one hundred per cent* of its (deflated) money cost to him minus only depreciation compensated for by actual use, measured in terms of general purchasing power, *immediately* upon deciding to dispose of it. (Bronfenbrenner, 1945, p. 407, original emphasis)

When money is merely the most traded commodity then market liquidity or saleability is the only form of liquidity that can be considered, simply because no other form of liquidity is possible. Bronfenbrenner's interpretation of 'without loss' protects the holder from losses in value compared to the original price in real or price-deflated terms but leaves unanswered what the holder can obtain in return for the unit of commodity.

Hicks's long-period idea, on the other hand, introduces the unstated assumption of a fundamental value derived from a long-period or general equilibrium that can be used as a benchmark for the observed market price, with perfect market liquidity providing the frictionless benchmark. Unfortunately, due to its assumption of perfect market liquidity, neo-Walrasian general equilibrium theory is inappropriate for a deep analysis of liquidity. If money and liquidity are non-neutral and no long-period equilibrium exists, then the fundamental value that Hicks relies on is undefined. In practice, market liquidity is based on the existence of dealers who are prepared to provide continuously tradable prices for small amounts with a view to relative value. Dealers do not, as a rule, attempt to measure

fundamental value (Mehrling, 2013, p. 356). In the limit, when all assets have perfect market liquidity, money has no need to exist. Market liquidity cannot form the theoretical basis of liquidity preference.

In its reliance on dealer support, market liquidity is a form of liquidity that disappears in a crisis and is thus unable to satisfy liquidity preference at the very moment it is needed. Market liquidity is a mirage:

This is the inevitable result of investment markets organised with a view to so-called “liquidity”. Of the maxims of orthodox finance none, surely, is more anti-social than the fetish of liquidity, the doctrine that it is a positive virtue on the part of investment institutions to concentrate their resources upon the holding of “liquid” securities. It forgets that there is no such thing as liquidity of investment for the community as a whole. (Keynes, 1936, p. 155)

Market liquidity suffers from a fallacy of composition. It should be clear from the context that ‘liquidity of investment’ refers to market liquidity, as opposed to money-liquid assets, since ‘[i]nvestments that are “fixed” for the community are thus made “liquid” for the individual’ (Keynes, 1936, p. 153). Organised markets, supported by dealers, allow long-term investments to be transformed into short-term investments for individuals, but not for the economy as a whole. Market liquidity itself is not an ‘intensive property’ (Lozano, 2015, p. 16), instead it is a ‘property described by functional relationship between delay time and percentage realization, and not by a single number’ (Tobin & Golub, 1998, p. 14). This multidimensional and functional nature means that ‘there may be no simple ordering of assets according to [market] liquidity’ (Tobin & Golub, 1998, p. 14), and any ordinal relationship is necessarily complex.

Furthermore, the cost of market liquidity in organised markets does not justify a liquidity premium beyond that which covers the expected cost of trading. In liquidity preference, the ‘underlying idea of the liquidity premium is that assets will have an “illiquidity discount” relative to money if their future price is less predictable than that of money’ (Bibow, 1998,

p. 245, n. 9). Crucially, the uncertainty relates to the fact that the ‘price may go *either way*’ (Bibow, 1998, p. 245, n. 9, original emphasis). Transactions costs and market illiquidity belong in the carrying cost component c , since it is ‘a clear cut *one-way* guess’ (Bibow, 1998, p. 245, n. 9, original emphasis). The measure of an asset’s market liquidity—its bid-ask spread—would be seen in its carrying cost, not its liquidity premium.

In the absence of organised markets, and hence market liquidity, the speculative motive would not operate, although liquidity preference would still be driven by the other motives. Keynes distinguishes market liquidity from the form of liquidity embedded in money: ‘If individual purchases of investments were rendered illiquid, this might seriously impede investment, so long as *alternative ways* in which to hold his savings are available’ (Keynes, 1936, p. 160, original emphasis). These alternative ways involve ‘hoarding or lending *money*’ (Keynes, 1936, p. 160, original emphasis), and would be preferred without the existence of organised markets in which investment assets ‘can be easily realised for money’ (Keynes, 1936, p. 161). Therefore, although liquidity preference cannot be built on a preference for assets that have market liquidity, its operation is affected by the presence of organised exchanges that reduce the sale costs of assets. Liquidity preference explains the desire for the aggregate or macroeconomic liquidity available in assets displaying price-protection, thus justifying the sharp distinction between money and non-money assets in the two-asset model that Keynes first uses to present the theory of liquidity preference.

Instead of favouring assets that can be sold with limited ‘marketing time and effort’ or concerns about ‘the depth of an asset’s market’ (Beggs, 2015, p. 15), it is market risk and market liquidity risk that create a preference for liquidity. Investors wish to hold assets with a price-protection feature because they are uncertain about future price variability. Liquidity preference describes the choice between near-money assets that mature before the investor’s horizon and longer-term assets with capital-uncertainty that rely on market

liquidity for conversion into the medium of exchange. Market liquidity does not clarify the concept of ‘liquidity’ in the theory of liquidity preference, because a high degree of market liquidity does not indicate that an asset has a low degree of uncertainty regarding its future price or return—the very reason given for liquidity preference. Exchange-traded stocks and shares generally have a high degree of market liquidity but also a high degree of price variation.

Liquidity preference also mitigates the uncertainty relating to the interest rate payable for ‘selling’ a newly created debt ‘asset’ to a lender. In other words, liquidity preference would also be a defence against problems with funding liquidity and the future cost of borrowing. It is applicable to the liability side of an investor’s balance sheet as well as the asset side (Beggs, 2015, p. 24). A decision to maintain a stock of price-protected assets because of uncertainty regarding the cost of future borrowing is consistent with liquidity preference.

Thus, it is a mistake to align Keynes’s liquidity premium with the illiquidity premium derived from the transactions and search costs theory of liquidity. It follows that Keynes’s liquidity premium is not an increase in expected returns for illiquid assets as it is in the empirical literature on liquidity. Instead, the abstract liquidity premium associated with money sets the standard that all other assets must match, meaning that liquidity preference is a theory of the rate of interest, and not a theory of liquidity premia. The correct interpretation is that liquidity preference is a desire to hold assets that have price stability in terms of the unit of account, and therefore provide price-protection. Price-protection is the essential feature of liquidity preference due to the ‘convenience of holding assets in the same standard as that in which future liabilities may fall due and in a standard in terms of which the future cost of living is expected to be relatively stable’ (Keynes, 1936, pp. 236-237).

4. Portfolio Rebalancing and the Demand for Money

The second strand of liquidity identified by Beggs (2015) concerns the demand and supply of money itself. In this strand, the interpretations of liquidity preference theory explain the demand for money due to risk aversion (Tobin, 1958) and the determination of asset prices by portfolio rebalancing (Hicks, 1989; Tobin, 1969). The portfolio-rebalancing paradigm involves equilibrating the supply and demand of available assets, including money, where expected rates of return are given by each asset's marginal rate of productivity, so that 'the price of assets moved to ensure that all assets were held by someone' (Mehrling, 2011, p. 62). On the one hand, the portfolio rebalancing approach is Walrasian because all assets 'are assumed to be saleable at prices determined by the balance of supply and demand' (Mehrling, 2011, p. 64). The implication for liquidity is that the 'demand for money is not a demand for the ultimate *liquid* asset but only a demand for the ultimate *riskless* asset, as all assets are assumed to be liquid' (Mehrling, 2011, p. 64, original emphasis). On the other hand, the approach is also Wicksellian due to its reliance on capital in value, not physical, terms and returns determined by the marginal productivity of capital (Rogers, 1989, pp. 117-124).

The assertion that portfolio rebalancing is Walrasian, just because all assets are tradable, is not entirely accurate. Walrasian analysis cannot specify asset returns without the model being over-determined, some prices cannot be 'traded' because asset returns are given by the Wicksellian set up of the model (Rogers, 1989, p. 53). These aspects mean that the expected return and variance of each asset is known. This prior knowledge of all asset returns ensures consistent expectations, thereby removing uncertainty and the need for liquidity. The portfolio rebalancing interpretation of liquidity preference suffers from the problems associated with Wicksellian and Walrasian theories (Rogers, 1989).

The most significant obstacle for portfolio rebalancing to be a valid interpretation of

liquidity preference is that the speculative motive is not used to determine interest rates (Chick, 1991). The portfolio rebalancing theory loses the key element of the liquidity preference theory—that uncertainty about future rates determines current interest rates and a demand for liquidity (Chick, 1983, pp. 213-214). The speculative motive is unnecessary, since returns are already determined, all that is left is the precautionary motive as a utility-derived selection based on asset volatility. The portfolio rebalancing theory is, at best, complementary to liquidity preference (Bibow, 1998, p. 260; Chick, 1983, p. 213).

Although liquidity preference has been interpreted as a demand for money, Keynes's definitions of liquidity and money are flexible and depend on investment horizons:

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 whatever 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 coextensive with bank deposits. (Keynes, 1936, p. 167, n. 1, original emphasis)

Depending on the investor's time horizon, the definition of ‘money’ is flexible and the distinction between liquidity and illiquidity is similarly relative. With this relative distinction, Keynes is able to present the theory of liquidity preference using the two-asset model consisting of ‘money’ and ‘debts’, to represent liquid and illiquid assets, respectively. Liquidity preference does not concern money *per se*; the difference between liquid and illiquid assets matters:

The current rate of interest depends, as we have seen, not on the strength of the desire to hold wealth, but on the strengths of the desire to hold it in liquid and illiquid forms respectively, coupled with the amount of the supply of wealth in the one form relatively to the supply of it in the other. (Keynes, 1936, p. 213)

The conclusion to draw is that Keynes uses the terms ‘money’ and ‘liquidity’ as synonyms in the context of liquidity preference. Liquidity preference is satisfied by holding assets ‘in the form of immediate, liquid command’, that is, ‘in money or its equivalent’ (Keynes, 1936, p. 166). The theory of liquidity preference rests on liquidity in general and not on money in particular; it is a theory of liquidity or asset pricing (Wray, 1991), not a theory of the demand for money.

Liquidity preference expresses a tendency to avoid assets with capital uncertainty in favour of those with a price-protection feature, but not just money-proper. Keynes’s liquidity premium only applies to such liquid assets as short-dated, self-liquidating, near-money securities with a price-protection feature, and, in the modern context, this set of liquid instruments would include security repurchase agreements (repo). Although this spectrum of liquidity in assets is juxtaposed with the sharp bifurcation of liquid and illiquid assets in Keynes’s two-asset model, we can reject the assertion that, by adopting the two-asset model, ‘Keynes invoked a simplifying assumption, namely, that bills, bonds, equities, or other securities can be treated for analytical purposes as holding the same relationship to money’ (Brown, 2003, p. 330; see also Tobin, 1958).

Nor is liquidity preference a desire for less volatile instruments due to risk aversion, as it is in portfolio rebalancing. It is concerned with the uncertainty of the realised asset return if conversion to money is required unexpectedly, and so refers to a desire to hold price-protected or self-liquidating assets, instead of assets with market liquidity that can only be converted into money by means of market makers and organised markets. The key issue that portfolio-rebalancing theories fail to cover is the very risk that liquidity preference mitigates: that the market price of an asset falls at the precise moment that it must be converted into a means of payment. It does not cover the possibility that the investment horizon may change unexpectedly, and, since the asset must be liquidated before the

planned investment horizon, its expected return cannot be realised. The fixed-term analysis of Hicks and Tobin fails to address this form of liquidity risk.

Hicks (1974, p. 37), therefore, realises that ‘we need something more than a portfolio selection theory; we need a theory of liquidity.’ For Hicks, an important addition to the theory would consider ‘things which are unknown now, but will become known in time’ (Hicks, 1974, p. 39). Portfolio construction is not a single choice activity, but involves decisions sequenced in time where optimal choices change with the arrival of new information, and, for Hicks, liquidity relies on time and the postponing of investment decisions: a waiting theory of liquidity (Bibow, 1998). It is rational that a store of liquid assets ‘permits the individual to take advantage of currently unforeseeable, future opportunities, while simultaneously self-insuring the holder against untoward events’ (Davidson, 1988, p. 335).

Placing the waiting theory into the context of modern portfolio theory shows that it relies on marketable assets that allow for managed portfolio reallocation, and therefore has Walrasian roots, since it could easily be handled by a suitable number of Arrow-Debreu contracts or continuous trading (Lucas, 1984). Market liquidity available for portfolio reallocation allows agents to respond to new information (Hicks, 1974). By emphasising the managed portfolio benefits of liquidity, the waiting theory relies on shiftability and the framework reverts to one based only on market liquidity, since investors prefer assets with marketability (Hicks, 1974, p. 42), or low transactions costs, so that they can perform subsequent changes in asset choice at minimum cost. Liquidity preference then becomes a preference for marketable assets over non-marketable assets, such as ‘a new factory’ (Hicks, 1974, p. 42), but Bibow (1998) rightly dismisses the choice between a new factory and an existing marketable security as an investment, not a portfolio, decision.

Hicks (1974, p. 43, original emphasis) recognises that an asset can be ‘imperfectly

liquid' if, at a random time of sale its price can be '*abnormally* low'. The risk of loss at sale is a factor in the ability to make sequential decisions. The key factor is not market liquidity but the possibility of loss at the time of sale; we need to consider the relationship between liquidity preference and the riskiness of assets.

5. Theory of Bearishness

If liquidity preference is simply a response to concerns that asset prices will fall, then liquidity preference could be interpreted as an extension of Keynes's (1930a) theory of bearishness (Brown, 2003; Ertürk, 2006). As Keynes puts it, in an organised market, the 'price will be fixed at the point at which the sales of the "bears" and the purchases of the "bulls" are balanced' (Keynes, 1936, p. 170; see also Keynes, 1930a, p. 250). For a bear, the alternative option is to hold money, and 'each increase in the quantity of money must raise the price of bonds sufficiently to exceed the expectations of some "bull" and so influence him to sell his bond for cash and join the "bear" brigade' (Keynes, 1936, p. 171). The speculative motive, as well as being tied to the concept of a safe level of interest rate, expresses 'the object of securing profit from knowing better than the market what the future will bring forth' (Keynes, 1936, p. 170). Following this line, Chick (1983, p. 204) has speculators, with short-term investment horizons, as the instigators of the speculative motive, and downplays the idea of the safe rate of interest, instead emphasising a 'normal' rate to which the speculator expects the current market rate to return, with deviations from this normal rate being a source of profit.

An analysis of market liquidity, and its reliance on market makers, should make us wary of emphasising the role of speculators. The necessary condition for the speculative motive is an organised market, which, in turn, requires the support of market makers. It is a mistake that an 'economist might refer to a market maker as a "speculator"' (Black, 1971, p. 29). An overemphasis on speculators also introduces the misleading concept of fundamental

value that conflicts with the reality of limited information and uncertainty. According to Friedman (1953, p. 175), speculators add stability to asset prices by providing the countervailing forces that restore prices to their fundamental values when affected by speculative bubbles or over-pessimistic market crashes. But fundamental uncertainty means that price moves on an organised exchange should be unpredictable in the short term. Speculators may well add stability, but, if so, they cannot be market makers.

Even within the two-asset model, several difficulties arise from the interpretation of liquidity preference as a theory of bearishness. First, short selling—selling bonds that are not currently owned now, in anticipation of buying them back more cheaply in the future—is a superior strategy for an individual with a belief that asset prices will fall. A bear trader could be a short-seller and not just one ‘who prefers at the moment to avoid securities’ and hold bank deposits (Keynes, 1930a, p. 250). By conducting a short sale, the bear does not take a position in money-proper; the funds received from the sale of the bonds in the present are used to borrow the very bonds needed to complete the sale. The position is the exact counterpart of the bullish investor, who can borrow short term to purchase longer-term debts. Both bulls and bears can express their views by leveraged positions in the bond asset, without any cash position, just as per the Capital Asset Pricing Model.

Chick (1983, p. 198) recognises this problem: ‘The speculative demand is made to look ridiculous because it seems to imply that speculators occasionally hold a totally barren asset when obvious alternatives are available.’ For Chick, however, the problem is more to do with the existence of interest-bearing, short-term, liquid assets that are just as good as money-proper to mitigate problems with the timing of sales of longer-term assets. As already concluded, however, liquidity preference should be defined in terms of near-money assets. The issue of short selling is more problematic.

Ultimately, the interpretation of liquidity preference as a pure theory of bearishness can

be rejected by noting that the return on short selling can also go either way—the same problem identified with building liquidity preference solely on market liquidity. A convinced bearish investor can take a short position but would have the same exposure to uncertainty as a bullish investor with complete conviction. Although it is not always practically possible to engage in short selling, a theory of liquidity based on bearishness is undermined by the theoretical existence of instruments that would provide ready substitutes. That liquidity preference cannot simply be a theory of bearishness is reinforced when it is realised that Keynes’s theory of bearishness was constructed within a Wicksellian loanable funds model, which the theory of liquidity preference was explicitly developed to oppose (Smithin, 2006).

Instead, the element of uncertainty, and liquidity’s ability to provide safety from uncertainty, must be emphasised (Cardim de Carvalho, 2010; Hayes, 2018). Market liquidity underpins the speculative motive by permitting, not general equilibrium and fundamental prices, but a focus on the near-term. Organised ‘liquid’ markets create the possibility of short-term speculative trading strategies and not an evaluation of long-term investment prospects (Keynes, 1936, pp. 158-159). The investor’s decision is not based on ‘the *absolute* level of r [the rate of interest] but the degree of its divergence from what is considered a fairly *safe* level of r , having regard to those calculations of probability which are being relied on’ (Keynes, 1936, p. 201, original emphasis). Thus, the likelihood and size of the anticipated gain from purchasing an asset must outweigh the likelihood and size of loss expected at the time of sale, which itself is uncertain. The ‘actuarial profit or mathematical expectation of gain calculated in accordance with the existing probabilities—if it can be so calculated, which is doubtful—must be sufficient to compensate for the risk of disappointment’ (Keynes, 1936, p. 169). It follows then that, for any given set of expectations, there must exist an interest rate at which the investor’s subjective expectation

of gain and loss are in balance. This balance must also be in terms of risk-neutral, or utility-adjusted, probabilities to incorporate not just monetary loss, but ‘disappointment’.

For Kahn (1954), however, the distinction between the precautionary motive and the speculative motive is less about organised markets and more about the investor’s degree of conviction in his expectations. The speculative motive is more prevalent if there is ‘complete conviction’ in expectations, and the precautionary motive enters when expectations are subject to uncertainty, represented by a perceived unreliability of the investor’s subjective probability distribution. The precautionary motive operates in conjunction with the speculative motive, when expectations about future interest rates are not held with complete conviction and gives the speculative motive ‘something to bite on’ (Kahn, 1954, p. 246). With complete conviction, a bull can do no more than invest entirely in non-money securities, regardless of interest rate (Tobin, 1958), yet if there is any uncertainty, a bull investor will hold some money as a precautionary measure. Although the speculative motive appears to be a pure theory of bearishness, it is the addition of uncertainty, and the associated precautionary motive, that introduces the motivation for investors to hold liquid assets (Keynes, 1937b).

In the context of a theory of the rate of interest based on uncertainty, the idea that any investor can know better than the market, and believe as much, can only be interpreted as signifying different degrees of opinion as to the future of the market. For example, Runde (1994, p. 134, original emphasis) views the relationship between the speculative motive and uncertainty as one where ‘speculators do not choose particular levels of speculative balances *because* they are uncertain about future price movements’, but instead ‘because they regard future price movements in one direction as more probable than in the other.’ In other words, the compensating price associated with the safe rate of interest will differ for each individual, and none will necessarily agree with the ‘market’ price visible in an

organised market. Agents will compare their compensating price for an asset with the market price to decide whether to purchase the asset or not. Deviations from each investor's safe rate inform the individual's decision on the amount of price-protected liquidity to hold in their portfolios.

Risk alone cannot explain liquidity preference. The balance of bulls and bears is in terms of risk, not liquidity, and liquidity is not conceptually the same as risk:

I am rather inclined to associate risk premium with probability strictly speaking, and liquidity premium with what in my *Treatise on 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, original emphasis)

In the *Treatise on Probability*, Keynes (1921) introduces a truth relationship between proposition a and hypothesis h with probability p as $a/h = p$. For Keynes, however, new evidence h_1 , even if it leaves the probability p unchanged, 'increases the *weight* of the argument' (Keynes, 1921, p. 71, original emphasis), meaning that the proposition is not more or less likely, but that the probability estimate is more reliable. 'New evidence will sometimes decrease the probability of an argument, but it will always increase its "weight"' (Keynes, 1921, p. 71). The new evidence must be 'relevant' in the sense that any part of the evidence can affect the probability, even if the new evidence as a whole and on balance does not (Keynes, 1921, pp. 55, 71-72). With this new evidence the weight of the argument $V(a/h)$ is increased to $V(a/hh_1)$. Keynes's intuitive concept of weight can be re-interpreted to be reflected in the theory of imprecise probabilities (Weatherson, 2002), whereby weight can be represented by an interval of probabilities—the wider the interval, the more uncertain the event is, and the less is its weight.

Crucially, probability and weight are independent, since 'the weighing of the *amount* of

evidence is quite a separate process from the *balancing* of the evidence for and against' (Keynes, 1921, p. 74, original emphasis). Runde (1990, pp. 282-283), however, questions the conclusion that new evidence must always increase the weight of a probability with the counter argument that new evidence may alert us to more alternatives or possibilities, and thereby undermine our previous confidence. Uncertainty can arise 'when new evidence is acquired to the effect that there are more alternatives or a larger field of possibility than previously imagined' (Runde, 1990, p. 283). This counterexample relies on epistemological difficulties in determining the range of possible outcomes—a quite separate matter from assigning probabilities to them. It may not necessarily apply specifically to variations in asset prices. Nevertheless, Keynes's 'two-tier theory of belief' of probability and weight (Runde, 1994, p. 133) is needed to understand liquidity preference.

Keynes's liquidity premium differs from a risk premium in that it relates to a desire for liquidity to mitigate a lack of confidence, with 'the difference corresponding to the difference between the best estimates we can make of probabilities and the confidence with which we make them' (Keynes, 1936, p. 240). The liquidity premium in liquidity preference, stems from uncertainty over the rate of interest in the future, and is subject to Keynes's concept of the weight of evidence supporting a proposition. The liquidity premium l is a payment or acceptable reduction in yield for otherwise identical assets 'of equal initial value' (Keynes, 1936, p. 226) and provides a sense of comfort or utility. Time and uncertainty are necessary for money to have a fundamental place. Asset prices are, in substantial part, determined by uncertainty and economic agents' desire to maintain a store of wealth in a liquid form that can provide a level of insurance against this uncertainty.

6. Conclusion

Keynes's theory of liquidity preference makes a valuable contribution to the analysis of liquidity, but some reinterpretation of the theory is necessary. The meaning of the term

‘liquidity’ that underpins the theory is price-protection, most commonly associated with money and near money. Inasmuch as money (read liquidity) can include the command over general purchasing power that can only be recovered over a period of months, then liquidity preference can be satisfied by quasi-money categories of self-liquidating assets and security repurchase agreements. Liquidity preference is not built on market liquidity; measures of liquidity based on trading volumes, returns reversals, or zero trading days fail to capture the liquidity risk mitigated by assets with the price-protection feature specific to liquidity preference.

The characteristic of full value, outside of general equilibrium theory, begs the question. If money is non-neutral, no long-period neo-Walrasian equilibrium exists, and the concept of a fundamental value is undefined. We must eschew the idea that ‘full value’ represents ‘without loss’. Full or fundamental value relies on a general equilibrium, and perfect market liquidity, which has no requirement for money, and is not relevant to the consideration of liquidity. It is the mistaken path to considering liquidity as a friction.

The theory of liquidity preference is that agents are willing to forgo interest income to hold price-protection assets due to the capital uncertainty associated with relying on market liquidity. This uncertainty regarding sales price is not just the transactions cost of illiquidity arising from markets without perfect market liquidity; it is due the uncertainty about future expected returns. Market liquidity is an illusory form of liquidity that allows measures of value to masquerade as measures of cash flow.

The interpretation taken here is that illiquidity is a systemic property of all assets that do not display the price-protection property, since expected returns are predominantly based on systematic factors. Keynes’s two-asset exposition is justified: any further expected return or premium over that determined by liquidity preference is based on the asset’s systematic risk, not liquidity. This is not to say that all non-money assets are perfect

substitutes, only that the component of the interest rate determined by liquidity preference is shared by all assets. Liquidity preference then becomes an essential part of a theory of asset pricing.

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