CHRISTOPHER BROWN

Toward a reconcilement of endogenous money and liquidity preference

Abstract: *A theoretical synthesis of endogenous money and liquidity preference is not possible so long as the latter is cognized as a theory of the demand and supply of money. A key step toward the reconcilement of the two theories is a revival of the original version of Keynes's theory, which appeared in the* Treatise on Money *as the "theory of bearishness." The most widely known version of liquidity preference is misspecified in that it conflates two distinct phenomena—changes in money balances required to effect a fluctuating stream of current or planned transactions as against portfolio disequilibrium—into a single demand for money function.*

Key words: *endogenous money, liquidity preference, Post Keynesian thought.*

> I am more attached to the comparatively simple fundamental ideas that underlie my theory than to the particular forms in which I have embodied them. (Keynes, 1937b, p. 211)

Two decades of theoretical elucidation and exegesis have firmly established the money endogeneity principle (MEP) as a defining feature of Post Keynesian economics.[1] However, the ascent of the MEP to fundamental tenet status has not been without controversy. This is especially true as regards the theoretical compatibility (or lack thereof) of the MEP and what had once been universally viewed as an ineluctable component of Post Keynesian thought—that is, the liquidity preference theory.[2]

The author is Professor of Economics, Arkansas State University. He is grateful to Paul Davidson and Michael Lawler for their help.

[1] Contributors include Arestis and Howells (1996), Dow (1997), Kaldor (1982), Lavoie (1985; 1996), Moore (1988), Pollin (1991), Rousseas (1985), and Wray (1992).

[2] Dow and Chick note that "[t]he theory of endogenous money is generally seen as antithetical to and a replacement for Keynes's liquidity preference theory" (2002, p. 587). Another controversy concerns Moore's contention that the MEP exposes the Keynesian multiplier as "fundamentally flawed" (Moore, 1988, p. 312). See Cotrrell (1994).

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The purpose of this paper is to argue that the sources of disagreement between the MEP and liquidity preference are *not* found in the elemental insights that underpin or give substance to the respective theories. Rather, the logical inconsistencies surface when the formal, partial equilibrium representations of liquidity preference and the *MEP* are juxtaposed. A revival and rearticulation of the nascent, nonformal version of Keynes's theory (which appears in the *Treatise on Money* as the "theory of bearishness") is a key step in achieving an analytical synthesis of liquidity preference and the MEP.

What is the essence of liquidity preference?

It is best to think of liquidity preference, or the theory of bearishness, as an attempt to account for what were, from a historical perspective, new sources of economic instability—specifically, those springing from the development of organized markets for debt and equity.[3] The sine qua non of liquidity preference (LP) is the relief from anxiety that liquid assets confer in a transmutable reality—that is, one in which individuals face true uncertainty.[4] Shackle defines liquidity as "the means of coping with a *lack of knowledge of the yet non-existent.* An asset will be liquid if it evades the consequences of such unknowledge" (Shackle, 1989, p. 49).

The facility with which a thing of value evades the consequences of uncertainty (at least in the view of its holder) depends in part on the existence and expected futurity of continuous and deep for markets for

[3] The clearest linkage between the *Treatise* and the *General Theory* as regards the theory of interest can be found in Keynes's description of the speculative motive to liquidity and the "bear position" elucidated in the earlier work. For example, Keynes described the speculative motive as "the object of securing profit from knowing better than the market what the future will bring forth" (Keynes, 1936, p. 170). A reading of Keynes's explanation of the bear position leads to the conclusion that the shift to the "speculative motive" was strictly terminological: "The second category of Savings-deposits comprise what . . . we will call the 'bear' position—including however, as bears not only those who have sold securities 'short' . . . but also those who would normally be holders of securities by prefer for the time being to avoid securities and lend cash—the former anticipating that securities will fall in cash-value and the latter they will rise" (Keynes, 1930, p. 250).

[4] Reality is transmutable when "future economic outcomes may be permanently changed in nature and substance by today's actions of individuals or groups (for example, unions, cartels, or governments), often in ways not perceived by the creators of change" (Davidson, 2002, p. 52). Hicks described true uncertainty as a situation in which agents "do not know what is going to happen and know they do not know what is going to happen. As in history!" (Hicks, 1977, p. vii).

assets of that type.[5] Kaldor explained the prerequisites for the development of perfect, or semi-perfect markets: "(1) The good must be fully standardized, or capable of standardization; [and] (2) It must be an article of general demand" (Kaldor, 1939, p. 3, emphasis deleted).

Tangible capital goods of the modern industrial era are characterized by heterogeneity (or task specificity) and indivisibility—factors that militate against the emergence of anything approximating perfect markets.[6] At the same time, the capital requirements of modern industry are staggering. The appearance of well-organized secondary markets for industrial securities in the latter half of the nineteenth century was a decisive innovation in terms of reconciling the public's desire for liquidity with the illiquidity of man-made instruments of production. Owing to the development of near perfect markets for debts and equities, the irreversible commitment by *individuals* to positions in tangible capital goods was no longer a necessary condition for the employment of resources in capital goods industries. Rather, wealth could be held in the form of financial assets that are readily marketable under normal conditions.

In illustration of the axiom that the solution to any problem contains the seeds of another problem, the development of the securities industry, by providing the individual wealth-holder a "frequent opportunity . . . to revise his commitments" (Keynes, 1936, p. 151), facilitated the rapid accumulation of (reproducible) capital goods, but at the same time created fertile soil for speculation.

> [T]he question of the desirability of having a highly organized market for dealing with debts presents us with a dilemma. For, in the absence of an

[5] Robinson (1979) differentiated between *income* uncertainty—that is, the uncertainty that a holder of a financial asset must bear due to uncertainty about the future stream of interest or dividends yielded by the asset, and *capital* uncertainty, meaning uncertainty deriving from potential changes in the price at which an asset can be marketed at future dates. Short-dated, gilt-edged securities are a good hedge against capital uncertainty, but carry income uncertainty. Widows, orphans, and university endowments favor high grade, longer dated securities since they are characterized by low-income uncertainty. Holders of corporate equities typically must bear income *and* capital uncertainty. Bearishness, or rising liquidity preference due to the *speculative* motive, can be redefined as an increased preference for those assets that are characterized by low capital uncertainty. Narrowly defined money is merely a subset of the class of assets desired by those seeking refuge from capital uncertainty.

[6] Davidson explains that "since the spot market for most durables (especially fixed capital and consumer durables) are so poorly organized and discontinuous (if they exist at all) because of destandardisation, high carrying cost, and the absence of a financial institution to "make" the spot market. . . . It would [therefore] be patently foolish to store value in any specific physical durable good" (1978, p. 194).

> organized market, liquidity-preference due to the precautionary-motive would be greatly increased; whereas the existence of an organized market gives an opportunity for wide fluctuations due to the speculative-motive. (ibid., pp. 171–172)

Liquidity preference is informed by the recognition that, in a developed market economy, the stock of outstanding debt and equity is so immense that secondary markets are more important than primary markets in terms of the pricing of securities. In other words, the success of public offerings (or private placements) of new bonds or shares depends to a large degree, though not completely, on the prices that comparable securities are fetching in the secondary market.[7] The prices and yields of newly issued securities have little, if any, connection to the "real" forces of productivity and thrift. Given the ultrahigh elasticity of substitution between previously issued and newly issued debts and equities of the same type, fluctuating prices in secondary markets (brought on by episodic shifts in market psychology from bullish to bearish and vice versa) invariably affect conditions in primary issue markets.[8] As the pace of capital goods spending is linked to the flow of newly issued bonds and equities, speculative activities have the potential to induce detrimental real sector effects.[9]

The above rendering of Keynes's ideas is at variance with the standard mental picture of LP. Most (Post Keynesians included) have taken their cue from the partial equilibrium representation of LP that appears in chapter 15 of the *General Theory.* The use of the Marshallian idiom has steered economists to a particular interpretation of the theory.[10] That is,

[7] Of the first wave reviewers of the *General Theory,* only Townshend seized on this cardinal aspect of liquidity preference: "[I]t is an essential part of Mr. Keynes' theory of interest that the rate of interest . . . is not causally determined by the conditions of supply and demand (for new loans) at the margin. Rather are the demand and supply schedules for new loans determined by the value set on the market for existing loans (of similar types)" (1937, p. 157).

[8] The reader will recall Keynes's comment that "the daily revaluations of the Stock Exchange, though they are primarily made to facilitate transfers of old investments between one individual and another, inevitably exert a decisive influence on the rate of current investment" (1936, pp. 150-151).

[9] A recent illustration of this principle is given by the collapse in volume on the market for initial public offerings in the aftermath of a steep fall in share prices for small and medium capitalization firms in the United States beginning in 1999.

[10] The initial reaction to liquidity preference was likely preordained by the method used to explicate it in the *General Theory.* Right from the beginning, liquidity preference was categorized as an application of price theory to the problem of the rate of interest. The comments of Fellner and Somers illustrate the point: "According to the loanable-funds theory of interest, the rate of interest is determined by the interaction of

LP ostensibly explains how "the" rate of interest fluctuates according to the forces of demand and supply operating in the "money market."

Partial equilibrium: an effective platform for Keynes's insights?

The purpose of this section is to argue that partial equilibrium proved an ineffective platform for the delivery of Keynes's path-breaking insights about the economic implications of liquid securities markets. Specifically, I argue that the mismatch between fundamental ideas and formal apparatus is manifest in the following defects of the 1936 version of the theory:

1. As a theory of "the" rate of interest, LP is (implicitly) based on the assumption that securitized assets are homogeneous in terms of liquidity/capital uncertainty.
2. Keynes's 1936 formulation of the theory takes the money supply as a fixed or exogenous magnitude.
3. Keynes's application of the standard economic technique merged two separable or nonequivalent phenomena into a single "demand for money" function.

LP and asset homogeneity

The formalized version of liquidity preference evinces a novel application of the Marshallian framework.[11] Keynes sought to explain the price of one thing (that is, the price of bonds or, equivalently, the reciprocal of the yield of bonds) by specifying demand and supply functions for *another* thing—money. Partial analysis is useful in explaining the price of a *single* article (assuming all other prices as given). The price of the good normally changes when the demand function shifts, ceteris paribus.[12] Where LP is concerned, the familiar apparatus works so long as the portfolio choice is restricted to two assets—money and a homogeneous, interest bearing security. Relaxing assumptions about the substi-

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the demand for, and the supply of, loanable funds. . . . According to the liquidity-preference theory of interest, the rate of interest is determined by the interaction of the demand for, and the supply of, money. This is the Keynesian interest theory as presented in the *General Theory of Employment, Interest, and Money* and in Mr. Keynes' more recent writings" (Fellner and Somers, 1941, p. 43).

[11] For an account of the influence of Marshall and "Marshallian economics" in shaping Keynes's methodological approach, see Lawlor (2002).

[12] The only exception would be if the supply curve for the item was perfectly elastic (horizontal).

tutability of different types of assets within portfolios yields ambiguous solutions with respect to the effect of changing liquidity preference on the price of bonds (and yields). Consider, for example, the case where falling liquidity preference (or a shift to the left of the demand for money function) due to the speculative motive, was partly of wholly manifest in an increased demand for equities.

By his choice of tools, 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. All of these assets are assumed to be at an equal distance from money in terms of liquidity. Hence a rise in liquidity preference translates to a heightened desire for money proper. Rising liquidity preference is therefore not conceived of as a generalized urge on the part of the wealth-holding or controlling community, *at the prevailing set of prices for equities, bonds, bills, and so forth,* to shift into asset categories that are situated at degrees closer to money on the liquidity continuum.[13]

Boulding (1944) argued that if liquidity preference were divorced from the "demand for money," the former could come into its own as a theory of financial asset pricing. According to this view, rising liquidity preference or a "wave of bearish sentiment" is manifest in a shift from certain asset categories, specifically, those that are characterized by high capital uncertainty (that is, uncertainty about the future value of the asset as a result of market revaluation) to assets such as commercial paper or gilt-edged securities.[14] Rising liquidity preference, interpreted as a "flight to safety," can, under plausible circumstances, result in a *decrease* in the yields of assets nearest to money. Keynes understood this point perfectly well. In a brief 1933 note to Joan Robinson, Keynes remarked that

[13] Keynes acknowledged that the definition of money used in his *Treatise on Money*—that is, money is coextensive with bank deposits, was arbitrary: "[W]e 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 generalized purchasing power which the owner has not parted for a period in excess of three months, and *debt* what cannot be recovered for a period longer 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 and occasionally, even instruments as (e.g.) treasury bills" (1936, p. 167, n. 1).

[14] For a discussion of Boulding's contribution, see Wray (1991). Mott (1985–86) has persuasively argued that a "change in liquidity preference" is manifest in, and revealed by, a change in the spread between the yields of differentiated financial assets. Also see Duquech (2000).

"[you are] quite right—bearishness may lower the short-term rate" (1971, p. 419).

It is the ever-present potential for convulsive shifts in the structure of relative prices among securities, brought about by the interplay of psychological and institutional factors, that is, or more accurately, ought to be, the quintessence of LP. A key part of the Post Keynesian program should be a reconfiguration of the theory to account for long-term or sudden movements in the prices of some assets (e.g., equities) vis-à-vis others (bonds, bills, etc.).[15]

LP and exogenous money

Fitting the concept of liquidity preference into an equilibrium framework was not feasible without the creation of an artificial or fictitious institution—the money market.[16] The money market might be explained away as a heuristic device that aids in making the concept of liquidity preference or bearishness intelligible to formally trained economists. Be that as it may, the money market invention has caused an untold amount of confusion. For one thing, equilibrium analysis is based on the assumption that supply and demand functions are "independent" in the sense that one function can shift without causing the other to shift.[17] The assumption that money supply is determined by independent money demand, or money *exogeneity,* apparently makes LP an obsolescent theory in light of the MEP.

[15] Robinson's (1979) work on liquidity preference provides an excellent start in this direction. Robinson's approach does not restrict the portfolio choice to money and bonds, but rather allows for four types of assets—that is, money, bills, bonds, and equities. The latter two assets are characterized by relatively high capital uncertainty, so that rising liquidity preference due to the speculative motive (or bearishness) will raise the price of bills compared to bonds and equities.

[16] Here a careful distinction needs to be made between the money market and the credit market. A transaction involving the loan of money today in exchange for the promise of repayment of money later *is not* a money market transaction according to the meaning of the term in Keynesian theory. The purchase of money in exchange for bonds *would* qualify as a money market transaction in the 1936 schema, but should be classified as a bond market exchange. The only real-world markets in which "money buys money" (as differentiated from a credit market in which money buys a newly issued promise to pay money) are foreign exchange markets. Hence Keynes's money market is a heuristic without correspondence to real-world phenomena.

[17] The reader will recall that Keynes criticized the classical theory of interest on the grounds that the saving function was based on a given level of real income, which would change if the investment function were to shift—hence the two functions were not independent. See Keynes (1936, pp. 175–185, especially the diagram on p. 180).

Although the money endogeneity literature is marked by disagreement on several points, the following statements, intended to convey the essence of the MEP, should not be controversial.

1. The control of the monetary authority over the quantity of high-powered money (bank reserves) is weak.[18] What influence the monetary authority does have over high-powered money, or monetary aggregates in general, derives from its capacity to target the *price* that depository institutions must pay to acquire reserves or, equivalently, yields of short-dated securities.
2. Oscillations in the time paths of monetary aggregates are more accurately interpreted as the *effect* of changes in the scale of current and planned economic activity rather than the cause.
3. The familiar vertical supply of money schedule gives a misleading analogy of the real-world mechanics of money creation and destruction.

The third statement goes directly to the "incompatiblist" view. It is revelatory that the *horizontalists* (a small group of contributors with a preference for packaging the MEP in a supply and demand framework) are the strongest opponents of LP within the Post Keynesian camp.[19] The dissatisfaction with LP among this group is based mainly on the supposition that Keynes's theory has merit only in the context of a commodity money system, or a system wherein it is logical to conceive of the money supply as an exogenously determined magnitude.[20]

[18] This statement applies most strongly when liability management, such as through the issue of negotiable certificates of deposit, is widely practiced within the banking system. See Moore (1988).

[19] The horizontalists, whose ranks include Kaldor (1982), Lavoie (1985), and Moore (1988), are so called because they have portrayed the (credit) money schedule as a horizontal line in interest rate–money space. Moore's objections to LP are well-known. The "verticality" assumption implicit in LP prompted Lavoie to remark with regard to LP that "Post Keynesians do not abide it anymore" (1985, p. 76). Rochon commented that, because it assumes money exogeniety, "Keynes's theory of liquidity preference is irrelevant" (1997, p. 290).

[20] In a "commodity money" system, changes in the (nominal) stock of money could come about by changes in the balance of trade or if real resources were employed in augmenting the stock of the commodity to which money is tied—for example, gold. Thus, in the short run, the money supply would be highly inelastic. Niggle points out that exogeneity in the *control* sense is possible without commodity money so long as the monetary authority has both the power and will to control the total quantity of bank deposits. That is, in principle at least, exogeneity is achievable by legal or regulatory means. See Niggle (1991, especially p. 144, table 1).

It is ironic that the horizontalist literature suffers from the same problem as the formal version of liquidity preference—that is, a mismatch between the ideas motivating it and the framework into which the ideas are projected. For example, the switch from a vertical to a horizontal supply function is accomplished by making the interest rate an exogenous or administered variable.[21] Thus, this form of the MEP gives no importance to speculative activities in the determination of short-term interest rates. Also, the horizontal money or credit supply schedule apparently assumes away the problem of lender's risk—it is implicitly based on the assumption that borrowers are homogeneous with respect to credit worthiness.

Misspecification of liquidity preference

The object of this section is to identify the subtle, but highly significant, flaw in Keynes's formal presentation of liquidity preference (in chapter 15 of the *General Theory,* "The Psychological and Business Incentives to Liquidity"), which is the source of so much confusion about the theory. Specifically, Keynes failed to make note of the fact that a change in liquidity preference connected to the *speculative* motive has fundamentally different economic implications than a change in liquidity preference adjoined to the income motive or the business motive (and, I would add, the finance motive to liquidity).[22] Whereas a change in liquidity preference associated with the latter motives *might* cause a change in the volume of shares transacted on secondary markets for financial assets, a change in liquidity preference linked to the speculative or asset motive to liquidity will *necessarily* bring about a revaluation of asset prices. Thus, while a change in the demand for money for purposes of executing product or factor market transactions might, under plausible conditions, be neutral with respect to the structure of security prices and yields (as claimed by the horizontalists); the non-neutrality of a generalized

[21] It is this aspect of horizontalism that caused Wray to classify it as "an extreme endogenous money approach" (Wray, 1992, p. 297).

[22] Keynes added the finance motive in his oft-cited article "Alternative Theories of the Rate of Interest" (1937a). The same principle developed in connection with the transactions motive also applies to the finance motive, namely, that an increase in the demand for money to bridge the interval between disbursement of factor costs and receipt of sales proceeds does not necessarily mean there will be increased selling of securities since the need for finance is ordinarily fulfilled by the draw down of existing bank credits or the use of revolving credit facilities (overdrafts).

shift in the desired composition of portfolios, with respect to asset prices is, for all intents and purposes, guaranteed.

Once again, the trouble can be traced back to Keynes's determination to recast the incipient theory of asset pricing, contained in the *Treatise,* in the shape of a partial equilibrium model of the "money" market. To restate the essential point, the problem was a failure to explicate the basic asymmetry of outcomes resulting from a change in the preferred mix of portfolio assets as contrasted to a change in desired bank balances underpinned by the transactions or finance motives to liquidity. Wray (1992) has noted this asymmetry, but explained it in terms of the differing response of the commercial banks to a change in the liquidity preference as compared to a change in the "flow" demand for money.[23] Although Wray correctly observes that "rising liquidity preference primarily causes price adjustments rather than quantity adjustments" (ibid., p. 303, n. 17), he attributes this phenomenon to the (ostensibly) inelastic response of the quantity of bank liabilities available for hoarding. In fact, a sell-off of any significant magnitude on the AMEX, the NYSE, the NASDAQ, the NIKEI and other secondary markets will force specialist traders to access "contingent capital," which most often takes the form of pre-negotiated lines of credit with commercial banks.[24] Thus, the money supply is likely to expand endogenously in consequence of intense selling pressure as specialists draw on overdraft privileges to make the market. Similarly, the money supply will expand if commercial banks or the central bank move to support the price of government securities. Wray nevertheless seems to have been moving in the right

[23] Whereas banks will generally meet rising demand for money, they will not normally expand the money supply when liquidity preference rises. The reasons are simple: rising liquidity preference will be associated with reductions of planned spending, with a shift of public preferences toward the most liquid bank liabilities, and with rising reserve requirements coupled with a reserve drain at the individual bank level. Rising liquidity preference is also associated with falling profit expectations, which is not the sort of environment in which banks are likely to expand their balance sheets (Wray, 1992, p. 303).

[24] New York Stock Exchange regulations require specialist traders to maintain liquid capital (bank deposits and near monies) equal to a mere 0.014 percent of the market capitalization of the shares they deal in—a sum hardly sufficient to maintain the salability (and "lean against the wind") of shares under intense selling pressure. The start of trading on Black Monday (October 1987) was delayed due to concerns about the adequacy of backup lines of credit. The IBM specialist, for example, began the day with liquid assets equal to $20 million, whereas the market capitalization of IBM at the end of trading on the previous Friday was (approximately) $13 billion. See Leland and Rubinstein (1988).

direction in making the distinction between flow demand for money (defined as the demand for liquid assets to effect a flow of current and planned transactions) and liquidity preference. A change in the former variable mainly affects the volume of bank intermediation; whereas a change in the latter, though it might impinge on the pace of bank lending, is manifest primarily in the change in the volume and price of shares transacted in secondary markets for financial assets. Most importantly, a decrease in the flow demand for money need *not*, when assessed in the institutional context of a *credit money* system, result in a redistribution of existing liquid balances among public and private balance sheets.[25]

Moore claims that "it seems quite clear that Keynes viewed the money supply as exogenously determined by the central bank. His entire treatment of liquidity preference and monetary policy makes sense only when viewed in this light" (1988, p. 187). Moore's view cannot be discounted if one is determined to interpret liquidity preference strictly as a theory of the demand for money (as opposed to a theory that can explain how the fickleness and caprice of the wealth-holding ("controlling") public can, by its reaction with market-making institutions, bring about a sudden and dramatic change in the relative prices of financial assets).

The alternative idea of liquidity preference leads to the radically different conclusion—that is, it is made more intelligible if the money supply is *endogenously* determined. To see why, consider the following situation: suppose that, owing to diminished confidence of firms about near-term proceeds from the sale of goods, there is a decrease in the demand for money to satisfy the transactions/finance motive. If the nominal money stock is exogenously determined, it cannot automatically adjust to a decrease in the scale of output and employment brought about by a change in the state of "short-term expectations" (Keynes, 1936, p. 47). Hence, as the contraction proceeds, a successively increasing proportion of the money stock is released to satisfy the speculative or asset motive to liquidity. At the prevailing set of interest rates, there must be an excess supply of money available to satisfy the speculative demand for money,

[25] In a credit money system, money has a zero (or negligible) elasticity of production, so that an increase in the nominal quantity of money requires no commitment of real resources. The measured money supply "is the statistical result of successful efforts to spend: of success in setting in motion the processes of payment for the things people or businesses buy or the people they hire" (Neale, 1981, p. 7). To state it differently, in a credit money system the money supply (which takes the form primarily of bank liabilities) expands and contracts pari passu with the volume of bank intermediation.

or what is the same thing, a shortage of Bears. An adjustment of security prices is required to bring forth additional Bears to hold the increment of cash freed up by the diminution of money held for transactions purposes.[26] What mechanism brings about the necessary adjustment of interest rates? Presumably, the effort by agents to shed liquid balances, which hitherto were held to satisfy the transaction/finance motives, generates an attendant surge in the demand for bonds, and so on. But this view presupposes that those who are scaling back on the disbursement of factor costs *already* possessed the liquid balances necessary to carry out the previous level of transactions. That is, the only method available to reduce the transactions demand for money is to decrease *existing* money balances. It would be as though a home owner who, determined to cut his or her utility bill, was "selling back" some fraction of the electricity required to sustain the previous level of consumption.

The foregoing treatment of liquidity preference is underpinned by the notion that there is a fixed (nominal) quantity of money out there that must be distributed among private and public balance sheets, so that if less money is desired by some agents, there somehow has to be a transfer of unwanted liquid balances to other agents. This view is logical in the context of a *commodity money* system—that is, a system in which the nominal money stock bears a determinate relationship to some commodity that is non-augmentable in the short period. However, the term *a change in the demand for money* takes on a different meaning when placed in the institutional setting of credit money. In a credit money system, a scaling back in the volume of factor disbursements does not create an "excess supply" of liquid balances held for such purposes. Rather, spending agents reduce their demand for money by failing to renew bank credits or deferring the use of overdraft privileges. An economic contraction does not automatically give rise to redundant money balances, since the quantity of money adjusts to the new level of economic activity via the pace of bank intermediation.

The conventional interpretation of liquidity preference makes the interest rate partly a function of the quantity of money "available for hoarding." But in a credit money system, a decrease in the flow demand for money does not increase the quantity of money available to hoard, nor

[26] As Shackle puts it, "Once the transactions motive is satisfied, all the rest of the existing money must be held by Bears (or at least, non-Bulls), of whom there have to be enough for this purpose. The business of the interest rate, *qua* equilibrator of liquidity preference, is to move to such a level as will create these necessary Bears, or eliminate some if there are too many" (1961, p. 212).

does an increase in the flow demand diminish it. An upgraded version of liquidity preference would establish the independence of the rate of interest (or more precisely, the structure of financial asset prices) from the quantity of money.[27]

Changing liquidity preference is a situation of portfolio disequilibrium. Wealth-holders as a group have decided that, at the prevailing set of relative prices, their current mix of assets does not suit them. In the most likely scenario, the population of financial asset controllers has reached the (average) opinion that the prices of equities or bonds will shortly change relative to alternative portfolio choices. If the prevailing view is that share prices will appreciate, this will stimulate a redistribution of speculative money balances from the newly bullish to those who, because of more attractive prices, have been induced to part with their shares. In the case where shares are purchased exclusively with borrowed money, there is no redistribution of speculative balances since those who are adding shares to their portfolios are not subtracting from their credit balances at the bank but rather adding to their debits.

Because the outstanding stock of bonds, equities, commercial paper, and other financial assets *must be held by someone*, the adjustment to equilibrium necessarily entails a change in the structure of relative prices. Rising liquidity preference *might* entail a net increase in the desire to hold bank liabilities. Taking into account the way in which modern securities markets operate, one could anticipate an elastic response in the supply of bank liabilities in the event of a flight from securities to narrowly defined money.

Concluding remarks

Post Keynesian economics is definable by its emphasis on the effects of uncertainty. Keynes's theory of liquidity preference is an attempt to de-

[27] Again, let us not rule out the possibility of an indirect connection between the nominal quantity of money and the yield of short-dated near monies or the structure of financial asset prices in general. The Federal Reserve System is obviously a dominant player in the U.S. market for short-term debt, and its open-market operations can be expected to exert an influence on the measured money stock as well as asset prices. Moreover, proceeds of bank loans are used (directly or through brokers) to purchase shares, bonds, and so on (such as in the case of margin buying). The recently publicized travails of hedge funds (such as the Tiger fund) have shown that the patronage of these highly leveraged entities by money center banks, is a nontrivial factor in financial asset pricing, inasmuch as bank exposure to these units supports the capability of hedge funds to purchase gigantic block of Treasury bonds, foreign currency, or other assets.

scribe how changing views about an uncertain future, in interaction with the institutions that exist to make securities marketable, are linked to output and employment. The purpose of this paper has been to argue that the problem with liquidity preference is not, or at least should not be, with the basic insights that underpin the formal model. Rather, the problem is that the ideas themselves are of a type that defy expression by formal means. The restoration of liquidity preference as an essential and defining element of the Post Keynesian architecture will therefore require a restatement of the main principles outside the confines of equilibrium analysis.

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