

# Asset Price Bubbles, Liquidity Preference and the Business Cycle

by

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## **Abstract**

In his *Treatise on Money*, Keynes relied on two different themes to argue that the interest rate need not rise with rising levels of expenditure. One of these was the elasticity of the money supply, and the other was the interaction between financial and industrial circulation. A decrease (increase) in what Keynes called the bear position was similar in its impact to that of a policy-induced increase (decrease) in the money supply. In the *General Theory*, this second line of argument lost much of its force as it became reformulated under the rubric of Keynes liquidity preference theory of interest. Assuming that the expected return on capital adjusts to the interest rate in short period equilibrium, Keynes ignored the effect of bull or bear sentiment in equity markets as a second order complication that can be ignored in analyzing the equilibrium level of investment and output. The objective of this paper is to go back to this old theme from the *Treatise* and underscore its importance for Keynesian theory of the business cycle.

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This paper is motivated by the author's perception that Keynes' *Treatise on Money* sheds much better light on many of today's economic problems than his better known *General Theory* (GT), whether it is the burst of asset price bubble in the US, liquidity trap in Japan, currency crises in emerging markets or the threat of global deflation. Whereas financial circulation, asset price expectations and market speculation were an integral part of Keynes' macroeconomic analysis in the former work, they have been pushed to the background in the latter. Keynes' remarks in the GT - both in his famous chapter on long term expectations and the one on the trade cycle - about market speculation was much more forceful than anything one can find in his *Treatise*. However, these penetrating insights on how securities markets could malfunction were not woven back into his analysis of how investment and output were determined in the GT. Keynes on occasion remarked that his two works complemented each other on monetary and financial matters, but among the following generations of his readers few had the benefit of any in depth knowledge of his earlier work. Thus, revisiting the *Treatise* can be a timely exercise for both the fresh insights it might give on many of today's problems and the clues for better understanding where Keynes was coming from.

To highlight the aspect of the *Treatise* that is emphasized in this paper, it is useful to start out from what Hicks (1937) found novel about Keynes' theory at the time. This was the notion that an increase in expenditures and income did not necessarily put an upward pressure on the interest rate. Hicks called this Keynes' "special theory," and distinguished it from his GT. The latter, in his view, was closer to orthodoxy since it implied that - as his IS/LM formulation he believed made evident - an increase in expenditure led to a rise in the interest rate, all other things being equal (p. 152).

According to this yardstick, Keynes argument in his *Treatise* is perhaps more "Keynesian" than the GT. In the earlier work, Keynes relied on two different themes to argue that the interest rate need not rise with rising levels of expenditure. One, the elasticity of the money supply, depended on the policy of the banking sector as a whole and that of the central bank, while the other referred to the interaction between financial and industrial circulation.<sup>1</sup> A decrease (increase) in what Keynes called the bear position, i.e., a fall (rise) in the financial circulation, was similar in its impact to that of a policy-induced increase (decrease) in the money supply. It typically fell in the early phase of a business cycle expansion with the expectation of rising asset prices, compensating the upward pressure put on the interest rate by the rising level of expenditure and income. Likewise, the period of late expansion was associated with the rising preponderance of market opinion that held that asset prices are excessive in relation to the actual earning performance of firms. That, in turn, gave momentum to the rise in the bear position, making it harder for the banking system to accommodate rising levels of output without an increase in the interest rate.

In the GT, Keynes had abandoned both of these themes. On the one hand, he assumed that monetary authorities could exogenously control the money supply,<sup>2</sup> and, on the other, reformulated *liquidity preference* into a theory of the interest rate, severing thereby the connection between asset price expectations and monetary circulation. This made it harder to introduce market speculation and asset price bubbles into macroeconomic analysis - as argued below. In fact, the whole notion of 'speculative demand for money' had disappeared in the so-called, Neo-classical - Keynesian synthesis

with the shifting of emphasis onto the interest elasticity of transactions demand for money (Tobin 1956, 1958, and Baumol 1952). Keynes' disciples at Cambridge, critical as they were of this neo-classical interpretation of his theory, had found little of interest in the *Treatise* and by and large ignored monetary theory (Kregel 1985). Also a forceful detractor of the mainstream interpretation of Keynes, Leijonhufvud (1968, 1981), by contrast, emphasized the monetary foundations of Keynes' thought and the continuity between the *Treatise* and the GT. However, his neo-Walrasian slant and the adherence to the loanable funds theory have dampened interest in his work among Keynesian economists (Littleboy 1997).<sup>3</sup>

Among Post Keynesian economists who retained interest in Keynes' monetary theory, a false dichotomy has later emerged between the notion of an elastic money supply and liquidity preference, where the growing emphasis on the former has come to eclipse the latter (Kaldor 1981, 1982, Dow and Dow 1989, Lavoie 1992, Ch. 4).<sup>4</sup> Thus, the extent of attention on the connection between speculative asset price expectations, liquidity preference and monetary circulation has remained relatively minor, seldom going beyond exegeses on the possible instability of speculative demand for money (Davidson 1978). Even Minsky (1975), who has reintroduced asset price expectations back into Keynesian theory, seems to have paid little attention to the said connection.

The objective of this paper is to make a case for the importance of the original argument of liquidity preference as found in the *Treatise*, in conceptualizing the role market speculation and asset price misalignments play in business cycle fluctuations. The following discussion is organized in three sections. The argument in the *Treatise* is discussed in the first section, and contrasted against its reformulation in the GT, in the second. The third section provides an alternative formulation that is based on the IS/LM model. Despite its well-known limitations - especially when used to draw inferences about dynamic phenomena such as business cycles - this framework is used deliberately on account of its historical importance in framing the discussion on Keynes and to show that the argument can be made even at this simple preliminary level. The paper ends with a few concluding remarks.

### **Financial Circulation in the *Treatise***

In the *Treatise*, Keynes divides monetary circulation into two components, calling them respectively industrial and financial circulation. The former is linked to the production and circulation of goods and services, and the latter to decisions involving the holding or exchange of existing titles to financial wealth. Roughly speaking, the former involves the use of *cash* deposits and the latter that of *savings* deposits.<sup>5</sup> The volume of industrial circulation is closely related to the level of output and expenditures while that of financial circulation is not. Instead, the latter, and its rough measure the volume of saving deposits,<sup>6</sup> primarily reflect what Keynes calls the magnitude of the bear position,<sup>7</sup> referring to those who choose to keep their resources in liquid form and those who sold securities short.

Of course, the desire to remain more, or less, liquid is not independent of the changes in security prices. Although rising state of bearishness (bullishness) causes volume of savings deposits to increase (decrease), the amount of this increase (decrease) depends on the extent to which the fall (rise) in security prices in relation to the short term rate of interest offsets the bearish (bullish) sentiment. This implies that, "[t]here will

be a level of security prices which on the average opinion just balances the bullishness [or bearishness], so that the volume of savings deposits is unchanged. (CW, V, p. 224). If security prices fall (rise) beyond this point, then the savings deposits might actually decrease (increase).

In the *Treatise*, Keynes defines four types of speculative markets in connection with different configurations of the bear position, which typically correspond to different phases of the business cycle (CW, V, p. 226). The first involves a decreasing bear position, i.e., a decreasing volume of saving deposits, at a time of rising security prices. Keynes calls this a “bull market with a consensus of opinion” and distinguishes it from a “bull market with a difference of opinion” which he defines as a situation where the bear position is increasing at a time when security prices are also rising. In the former case, which typically holds during early expansion, the preponderance of market opinion holds that security prices have not risen sufficiently, while in the latter case, corresponding normally to late expansion, a rising segment of the market thinks that security prices have risen more than sufficiently. The third case, which corresponds to early recession, is a “bear market with a consensus,” and again Keynes distinguishes this from a “bear market with a division of opinion.” The former involves a rising bear position, i.e., increasing volume of saving deposits, at a time of falling security prices and the latter a decreasing bear position when security prices are still falling. In the former, the predominant market opinion is that security prices have not fallen sufficiently and that they have fallen more than sufficiently in the latter.

From the point of view of orthodox theory of finance, it is nonsensical to say that security prices have increased or decreased more, or less, than *sufficiently* if no new information has emerged at a given point in time. For, if securities are thought to be undervalued, then arbitrageurs would continue to buy them until their prices are bid up to a level that is no longer considered low. Likewise, if securities are thought to be overvalued, again, arbitrage would bring their value down to a level consistent with what is considered to be their ‘true’ value. Thus, at a given point in time, with a given information set, the prevailing asset prices must be the best estimates of fundamental values.<sup>8</sup>

However, Keynes’ approach in the *Treatise* is consistent with the modern “noise trader” (or the so-called *behavioral*) approach to finance, which holds that *riskless* arbitrage is not effective in relation to the prices of shares or bonds as a whole and severely limited even when it comes to the relative prices of individual assets (Shleifer & Summers 1990, Shleifer & Vishny 1997). According to this view, even when it is assumed that arbitrageurs know what fundamental values are, they face no *riskless* arbitrage opportunities when actual prices deviate from their true values. For with a finite time horizon, an arbitrageur faces two kinds of risk: when s/he, say, sells overvalued assets short it is possible that by the time s/he is supposed to liquidate his/her position (i). the economy can grow so rapidly that the true values increase, or, more importantly, (ii). the asset prices might be even more overpriced. In both cases, the arbitrageur would be experiencing heavy losses. Thus, the fear of loss would limit the initial positions the arbitrageurs take and thus prevent them from driving prices down in any significant way. Moreover, if we drop the assumption that arbitrageurs know what the true values are, the risk of loss they face is higher, and the compensatory shift in demand smaller.

In a vein very similar to the modern behavioral approach, in the *Treatise*, Keynes remarks that when prices deviate from their ‘true’ values no automatic mechanism exists in the short run to check their deviation. *Opinion*, or what we would today call, *noise* (Black 1986) moves prices. “If everyone agrees that securities are worth more, and if everyone is a ‘bull’ in the sense of preferring securities at a rising price to increasing his savings deposits, there is no limit to the rise in price of securities and no effective check arises from a shortage of money” (CW, V, p. 229). However, as prices continue to rise, a ‘bear’ position begins to develop, and that is what can eventually check the rise in prices. “...[I]n proportion as the prevailing opinion comes to seem unreasonable to more cautious people, the ‘other view’ will tend to develop, with the result of an increase in the ‘bear’ position...” (CW, V, p. 228-9).

In Keynes’ discussion in the *Treatise*, the rise of the bear position at a time when security prices are rising plays an important role in explaining the turning point of a business cycle expansion. In his view, “it is astonishing ... how large a change in the earnings bill can be looked after by the banking system without an apparent breach in its principles and traditions” (CW, V, p. 272). Yet, the banking system’s ability to accommodate a rising level of production is typically impaired at some point during a business cycle expansion. That happens typically not because the banking sector is held back by the central bank or faces some intrinsic difficulty, but because the financial sentiment falters. The trigger can have a myriad of immediate causes but the underlying reason is almost invariably the fact that the actual performance of profits, though they might still be rising, falls short of the high expectations that underlie asset prices. As the view that the market might be overvalued begins to take hold, the bear position develops, and “...the tendency of the financial circulation to increase, on the top of the increase in the industrial circulation ...break[s] the back of the banking system and cause it at long last to impose a rate of interest, which is not only fully equal to the natural rate but, very likely in the changed circumstances, well above it” (CW, V, p. 272).

In a similar manner, a declining bear position during a business upswing prevents the interest rate from rising with increasing levels of activity. Again, *stock* decisions dominate *flow* decisions. It can, stylistically, be thought that in a given accounting period the amount by which the net increase in new securities issued by firms (investment) exceeds the net increase in demand for such securities by savers (savings) are purchased by those speculators who, expecting securities’ prices to rise, draw down saving deposits in the aggregate. In fact, if the bullish sentiment is strong enough the prices of securities can even rise, implying that the bond rate might actually decrease rather than increase. Thus, independently of the policy of the banking system, an increase in investment in excess of saving need not put any downward pressure on asset prices.

### **Liquidity Preference in the *General Theory***

In exchanges with his critics - Robertson, Hawtrey and Ohlin - after the publication of the GT, Keynes (1937a, 1937b, 1937c, 1938) conceded that a rise in planned investment would also raise the demand for money prior to its execution, and, thus, all other things being equal, the interest rate. In arguing why this effect on the interest rate would not in practice amount to much, he emphasized primarily the elasticity of money supply rather than variations in financial circulation. Could it be that in his exchanges with his critics Keynes chose to ignore the role of asset price expectations in business

cycle dynamics because it no longer fit in easily within the structure of the GT? In fact, an argument to that effect can be made on two related grounds: (i) in his latter work, arguing that the interest rate sets the expected return on capital in equilibrium, Keynes tacitly assumed that the bull or bear sentiment in equity markets is a second order complication that can be ignored in analyzing the short period equilibrium level of investment and output, and (ii) the reformulated version of his liquidity preference theory presumed inelastic expectations with respect to the future interest rate, further restricting the scope of swings in the bull and bear sentiment under consideration to the variations in the current bond rate in relation to the long bond rate.

(i). On the face of it, translating the argument in the *Treatise* to the terminology of the GT seems to amount to the simple proposition that the liquidity preference schedule shifts down (up) when the marginal efficiency of capital shifts up (down) on account of more optimistic (pessimistic) expectations. In fact, Keynes appears to have made such a connection himself.<sup>9</sup> On closer examination, however, the suggested translation of the argument to the language of the GT may not be as straight forward as it first appears.

For one, in the GT, Keynes centers his whole argument of liquidity preference on the expected variations in the price of loan capital, and delineates the variations in share prices as a separate issue to be dealt with under the marginal efficiency of capital.<sup>10</sup> In turn, the very concept of the marginal efficiency of capital, which as Keynes stresses is *fixed* by market valuation, implicitly precludes the notion of an asset price bubble. Note that if the marginal efficiency of capital shifts up on account of higher expectations of future profitability that are *justified*, then the initial increase in asset prices will cease to be excessive when actual investment and profits increase. Yet it is not clear how this case would be distinguished from a situation where the higher profit expectations are somehow *unjustified* or that the increase in asset prices are “excessive” in relation to these expectations, all other things again being equal. If investment rises with the higher marginal efficiency of capital as it should and the multiplier is what it is in both cases, then it is unclear how one could define market overvaluation, barring capacity or employment constraints.

Whether actual return on investment turns out to be less than or equal to what was expected, Keynes assumes that the expected rate of return on capital adjusts to the interest rate in equilibrium through variations in the scale of investment.<sup>11</sup> Because he ignores, by assumption, fluctuations in share prices in the short period, speculative activity in the stock exchange does not influence the level at which the two rates equalize. “Long term expectations” refer to the future profit expectations that are reflected in equity prices and are assumed given within his short period. This enables him to focus on asset price changes that would be brought about by changes in the interest rate resulting from shifts in the portfolio choice between bonds and money alone.

(ii). In the reformulated version of his liquidity preference argument, Keynes remarks that “... what matters is not the absolute level of  $r$  [the interest rate] 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. 202). Though Keynes accepts that this ‘safe’ rate can itself vary from time to time, he takes this to be the exception rather than the rule. Thus, assuming that the safe rate is expected to remain

unchanged, he remarks that every decrease (increase) in the current interest rate increases the expectation that bond prices will fall (rise) in the future, and thus raising (lowering) “the risk of illiquidity.” As Kaldor (1939) later elaborated, in this situation even a very small change in bond prices would be sufficient to induce speculators to buy the new bonds firms issue, since they would be expecting the bond prices to rise in the future, as long as their expectations with respect to the long rate remained inelastic.<sup>12</sup>

Note that here the bearish (bullish) sentiment now refers to this heightened (reduced) sense of risk associated with illiquidity, as the focus of the argument moves from shifts in the liquidity preference function as a whole to variations in the demand for liquidity when the said function remains unchanged. By contrast, when Keynes refers to a shift in liquidity preference as a result of the collapse in the marginal efficiency of capital in his chapter on the trade cycle – referred to above – he means a shift in the whole schedule and presumably a change in what is considered a safe rate as well. Thus, in its reformulated version in the GT, the speculative demand for money, expressed as a function solely of the interest rate, refers to the quantity of liquidity demanded, holding liquidity preference (i.e., the whole schedule) and expectations about the long rate constant.

In this setting, the only type of an asset price bubble that can occur is that in bond prices, caused by an aggressively expansionary monetary policy that brings about too steep a fall in the current rate of interest in relation to the ‘safe’ rate. The *liquidity trap* that can result in this instance is reminiscent of Keynes’ *bull market with a division of opinion* in the *Treatise*, though, its scope is much more limited. Incidentally, if the liquidity preference varied with shifts in the marginal efficiency of capital, then, it is less plausible that expectations about the ‘safe’ rate are inelastic, complicating the manner in which one can derive an interest elastic money demand schedule on the basis of the speculative motive.

### **An Alternative Reformulation**

Despite its well-known deficiencies, the IS/LM framework might be useful here to underscore more precisely how Keynes’ argument in the *Treatise* differs from the GT, albeit, in its textbook version. As remarked above, in the GT, Keynes had separated the determination of prices of assets and debts, and defined his ‘short period’ in terms of a given set of expectations with respect to the future earnings capacity. While this had the advantage of highlighting the potential of economic policy – to the extent interest rates could be controlled – in influencing asset prices, it at the same made it harder to conceptualize the macroeconomic effects of asset prices the market opinion held to be misaligned. In part, at least, the organization of the argument in the *Treatise* seems better equipped to address this latter problem.

To underscore the point, the following discussion does away with the differential determination of the prices of assets and debts and lumps all securities together as Keynes had done in the *Treatise*. Secondly, while it still adheres to the GT notion of the ‘short period’ that is defined in terms of a given set of “long period expectations,” it now assumes that these expectations can just as well refer to market opinion about *trends*, according to which changes in asset prices can be excessively or insufficiently high.

Accordingly, the demand for money, defined coextensively with bank money as in Keynes, can be expressed as a function of not only income ( $Y$ ) and the interest rate ( $i$ ) but also of expected future price of securities ( $P$ ):

$$L = L(Y, i, P)$$

where ( $P$ ) can move with income, either in an increasing or decreasing way, (i.e.,  $P_Y$  is positive or negative) depending on the exogenously given state or trend of “long term expectations.” A positive (negative) value implies that increases (decreases) in income and profits fuel the expectation that asset prices have not yet risen (fallen) sufficiently.

For the sake of argument, the money supply is initially assumed fixed:

$$M = \bar{M}$$

Setting the two equations equal to one another and totally differentiating both sides gives the slope of the LM schedule:

$$\left. \frac{di}{dY} \right|_{LM} = - \frac{(L_Y + L_P P_Y)}{L_i}$$

where, as usual, it is assumed that  $L_Y > 0$ ,  $L_i < 0$ . The effect of a higher (lower) expected future price of securities on liquidity is negative (positive), implying that  $L_P < 0$ . This implies that the slope of the LM schedule depends on the sign of  $P_Y$ , which indicates whether asset prices are expected to rise or fall further during, respectively, an expansion and a recession. During an upturn,  $P_Y$  positive when there is a “bull market with a consensus of opinion” and negative when there is a “bull market with a division of opinion.” Likewise, a positive  $P_Y$  during a downturn – with both  $P$  and  $Y$  falling – implies that asset prices are not thought to have fallen sufficiently, i.e., a “bear market with a consensus”; and, a negative sign implies that future asset prices are no longer expected to fall even though income is still decreasing, i.e., a “bear market with a division opinion”.

It can readily be seen that the slope of the LM schedule is definitely positive when  $P_Y$  is negative. This corresponds to a period of late expansion during an upturn associated with an overvalued market when the increase in the level of activity, which might be depicted by a series of upward shifts in the IS schedule, drives the interest rate higher. As shown in Figure 1, even if the transactions demand remains unchanged, when  $P_Y$  is negative (depicted in the third quadrant in the  $Y - P$  space) expected future asset prices fall with rising output, causing an increase in the speculative, and the total, demand for money - as depicted in, respectively, the second and first quadrants.<sup>13</sup> The fourth quadrant shows a positively sloped LM schedule, indicating that an increase in output leads to a higher interest rate.

### Figure 1: Late Expansion (Contraction)

By contrast, a positive  $P_Y$  during an expansion, indicating a bull market with a consensus of opinion, implies that the slope of the LM schedule need not be positive. Depending on the extent to which the fall in demand for liquidity on account of expectations that asset prices will continue to rise ( $L_P P_Y$ ) offsets the increase in transactions demand ( $L_Y$ ) it might even be negative or flat. In Figure 2, where transactions demand is assumed to remain unchanged, the LM schedule is negatively sloped.

### Figure 2: Early Expansion (Contraction)

A bear market with consensus during the early phase of a downturn also implies a positive  $P_Y$ . The demand for liquidity rises on account of expectations that asset prices will continue to fall, offsetting at least in part the fall in transactions demand. Thus, in a business cycle downturn whatever monetary relief there is in the form of a lower rate of interest rate might come about more on account of changed expectations about asset prices having hit bottom than because of a lower transactions demand associated with decreased level of activity. Unless  $P_Y$  turns negative first (indicating a bear market with a division of opinion) downward shifts in the IS schedule need not result in lower interest rates.

Above, a fixed supply of money was assumed to bring into sharp relief the reach of Keynes' original liquidity preference argument. However, the ongoing discussion can also be made more consistent with Keynes' analysis in the *Treatise* - though it requires a separate analysis in another paper to develop it fully - by incorporating banks' own liquidity preference, i.e., the responsiveness of bank credit to the level of activity and asset price expectations. Thus, the supply of money can also be expressed as a function of the level of income, the interest rate and expected future price of securities.

$$M = M(Y, i, P),$$

and the slope of the LM schedule is then given by:

$$\left. \frac{di}{dY} \right|_{LM} = \frac{(M_Y - L_Y) + (M_P - L_P)P_Y}{(L_i - M_i)}$$

where it is assumed that all three variables affect the supply of money positively:  $M_Y > 0$ ,  $M_i > 0$  and  $M_P \geq 0$ . Provided that  $M_Y \leq L_Y$ , the gist of our earlier argument about the changing slope of the LM schedule over different phases of the business cycle remains basically the same.

However, the revised formulation enables us to consider the effects of possible changes in bank behavior over the cycle as well. In more general terms, it gives an idea how the interaction of banking sector behavior, the state of bearishness, and the level of industrial circulation (the three variables Keynes emphasized in the *Treatise*) determines the interest rate over the business cycle, subject of course to the well known limitations of the static IS/LM model in drawing dynamic inferences. It is interesting to note that a strict “horizontalist” position, which can perhaps be characterized for our purposes here by the assumptions,  $M_Y = L_Y$  and  $M_i = M_P = 0$ , need not imply a horizontal LM schedule and is thus closer to the earlier specification with a fixed supply of money than generally anticipated. More specifically, changes in the slope of the LM schedule over the cycle is determined (i) solely by shifts in the state of bearishness in the “horizontalist” position; (ii) by the interaction of the level of activity (transactions demand) and the state of bearishness in the “verticalist” position; (iii) and, by the interaction of all three variables in Keynes’ *Treatise*.

Finally, it can be noted that this formulation is in no need of Keynes’ notion of equilibrium in the *Treatise* to stand on its feet. The gist of Keynes’ monetary theory in the *Treatise* comes to its own as the notion of a natural rate of interest is shown to be dispensable to his argument, i.e., once it is recognized that arbitrage in financial markets between assets representing claims against real capital and debts does not cause, what Marx called, the ‘profit of enterprise’ to be competed away.<sup>14</sup> Thus, contrary to Leijonhufvud’s contention, a rejection of Keynes’ formulation of liquidity preference into a theory of the interest rate in the GT need not imply a return to the loanable funds theory and the notion that the interest rate is determined by the interaction of productivity and thrift. Nor, is there any reason to define equilibrium in terms of the consistency of beliefs about the future prospects of the economy between the entrepreneurs and speculators (Leijonhufvud 1981, p. 163).<sup>15</sup>

## Conclusion

In Keynes’ discussion in the *Treatise*, variations in the state of bearishness had a direct *quantity* effect on the relative size of inactive balances without necessarily causing a change in the rate of interest. This made it possible to discuss the effects of market speculation and asset price bubbles on monetary circulation in a way that became impossible to do in the GT. With the methodological shift to equilibrium analysis in the GT, the short period equilibrium point - where the expected rate of return on capital becomes equal to the rate of interest with a given set of “long term expectations” – came to be defined independently of asset price misalignments. In this setting, changes in the

liquidity preference function lacked any determinate functional link to speculative asset price expectations, with the result that shifts in them were seen to be caused by unexplained – and, by implication, unpredictable – shifts in market psychology. Moreover, whatever shift now occurred had solely a direct *price* effect, causing the rate of interest to vary until the “aggregate desire to hoard becomes equal to the available cash.”

With this reformulation, the argument’s focus has shifted over time onto the interest elasticity of the demand for liquidity, setting the stage for its eventual microeconomic reinterpretation along the lines of portfolio theory (Tobin 1956, 1958 and Baumol 1952). With an elastic money supply, even this watered down price effect became indeterminate, - leading Kaldor (1982, p. 26) to retort, “liquidity preference turns out to have been a bit of a red herring,”- and whatever link still existed in the GT between liquidity preference and the bull and the bear sentiment as understood in the *Treatise* was lost. Thus, paradoxically, by its overemphasis on unpredictable shifts in market psychology, GT made it harder to say anything determinate about the monetary effects of market speculation and asset price misalignment that are so prevalent in today’s deregulated financial markets.

Notes:

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<sup>1</sup> In fact, these two themes are interrelated in Keynes' notion of endogenous money in the *Treatise*, unlike much of the contemporary treatments of the topic. Though important on its own right, this point cannot be pursued here.

<sup>2</sup> However, he returned to it in his exchanges with his critics after the publication of the *General Theory* (see below).

<sup>3</sup> Leijonhufvud's (1967, 1981, Ch. 6) well known critical stance on Keynes' formulation of the liquidity preference argument into a theory of the interest rate in the GT and insistence that *speculation* - and the *speculative motive* - played a key role in Keynes' economic system resembles the argument here, though only superficially. As we shall see, his interpretation of Keynes, and especially of the *Treatise*, differs significantly from the present argument.

<sup>4</sup> Other Post Keynesians have continued to stress the importance of Liquidity Preference (Kregel 1988, Wray 1990), shifting the emphasis to its impact on the structure of asset prices (Wells 1983, Kregel 1984-5 and Mott 1985-6). For precursors of this line of interpretation, see: Townshend (1937) and Boulding (1944); and for more recent attempts at reconciling liquidity preference with endogenous money, see: Dow & Chick (2002) and Brown (2003-4)

<sup>5</sup> Keynes maintained that saving deposits would typically be held in the form of "deposit accounts" (which corresponds to time deposits in the US) and while cash deposits would take the form of "current accounts" (checking or demand deposits in the US).

<sup>6</sup> "In modern conditions, both in GB and the US, the total 'bear' position can, of course, much exceed the amount of saving deposits ..., since professional investors have other, and generally more profitable, means of lending 'bear' funds against liquid claims on cash than through the banking system, e.g., by buying treasury bills and by direct loans to the money market and the stock exchange" (CW, V, p. 225).

<sup>7</sup> The size of financial circulation depends less on the volume of trading, because of the excessively high velocity of financial transactions.

<sup>8</sup> The more elaborate justification of this position is based on 'the efficient market hypothesis,' which has gained currency among economists after Samuelson's (1965) "proof" that in a market that is *efficient* in appropriating all available information stock prices should exhibit a random walk and Fama's (1965) demonstration that they almost actually do. But, neither proposition is considered valid any longer in the contemporary finance literature. Empirically, it is shown that stock prices do not exhibit random walk, and theoretically it is shown that *unforeseeable* prices are neither necessary nor sufficient for *rationally* determined stock prices. See, among others, Lo & MacKinlay (2002), Bossaerts (2002) and Shleifer (2000).

<sup>9</sup> In Chapter 22 of the GT, liquidity preference schedule shifts up only after the marginal efficiency of capital collapses, setting off a downturn. In Keynes (1937a), there is more a sense of an ongoing interaction between the two schedules, where he writes, "When a pessimistic view taken about future yields, that is no reason why there should be a diminished propensity to hoard. Indeed, the conditions which aggravate the one factor tend, as a rule, to aggravate the other. For the same circumstances which lead to

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pessimistic views about future yields are apt to increase the propensity to hoard” (CW, XIV, p. 118).

<sup>10</sup> “Whilst liquidity-preference due to the speculative-motive corresponds to what in my *Treatise on Money* I called “the state of bearishness”, it is by no means the same thing. For “bearishness” is there defined as the functional relationship, not between the rate of interest (or price of debts) and the quantity of money, but between the price of assets and debts, taken together, and the quantity of money. This treatment, however, involved a confusion between results due to a change in the rate of interest and those due to a change in the schedule of the marginal efficiency of capital, which I hope I have here avoided. (Keynes 1936, p. 173-4).

<sup>11</sup> Keynes writes, “Put shortly, orthodox theory maintains that the force which determine the common value of the marginal efficiency of various assets are independent of money, which has, so to speak no autonomous influence, and that prices move until the marginal efficiency of money, i.e., rate of interest, falls into line with the common value of the marginal efficiency of other assets as determined by other forces. My theory, on the other hand, maintains that this is a special case and that over a wide range of possible cases almost the opposite is true, namely, that the marginal efficiency of money is determined by forces partly appropriate to itself; and that prices move until the marginal efficiency of other assets fall into line with the rate of interest” (Keynes 1936, p. 178).

<sup>12</sup> Leijonhufvud (1967, 1981) erroneously reads this aspect of the argument in the GT into the *Treatise*. He holds that inelastic expectations with respect to the long bond rate is the very essence of Keynes’ explanation of why the interest rate fails to equilibrate investment and savings, even as early as in the *Treatise*. Following a fall in the *natural* rate of interest caused by a fall in investment demand, economic contraction and unemployment result from the fact that the actual long bond rate fails to adjust downward because of *bear* speculation resulting from the inelastic expectations about the future bond rate. A falling *natural* rate of interest means a rising price of newly issued financial assets whose supply decreases in relation to its demand with the falling off of investment demand. Because the *bear* speculators satisfy the excess demand of savers for financial assets thinking that the asset price increase is only temporary, the long bond rate cannot fall to the level of the *natural* rate. According to Leijonhufvud, having already made this argument in in the *Treatise*, Keynes’ novel idea in the GT was his the recognition that the contraction of output that results from the initial discrepancy between investment and savings (and thus decrease of income) permanently shifts down savings (and thus the demand for financial assets schedule), making the discrepancy between the actual long bond rate and the *natural* rate permanent even if the *bear* speculation ceased to continue. Leijonhufvud argues that Keynes had obscured this central argument of his theory by doing away with the loanable funds theory of interest rate in the GT, thereby causing numerous misunderstandings about his views that befuddled economists ever since. Be that as it may, inelastic expectations, on which Leijonhufvud places such great emphasis, preclude asset price bubbles, and thus cannot be consistent with Keynes’ discussion of them in the *Treatise*. It can also be argued that Keynes’ critique of the loanable funds theory is more convincing in the context of the argument in the *Treatise* (Bibow 2000), though to do so would take us too much afield.

<sup>13</sup> I am grateful to Mark Lautzeheiser for the suggestion of a graphical presentation.

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<sup>14</sup> As Keynes put it after the GT, “the necessity of equalizing the advantages of the choice between owning loans and assets requires that the rate of interest should be equal to the marginal efficiency of capital. But this does not tell us at what level the equality will be effective. The orthodox theory regards the efficiency of capital as setting the pace... (...) Thus, instead of the marginal efficiency of capital determining the rate of interest, it is truer (though not a full statement of the case) to say that it is the rate of interest which determines the marginal efficiency of capital” (XIV, pp. 122-3). As Minsky (1975, pp. 79-80) has rightfully remarked, the level of *generality* Keynes reverts to in his Chapter 17 of the GT in his discussion of arbitrage between real and financial assets, underpinning the argument in this passage, is at variance with his general emphasis on the institutional characteristics of a ‘monetary production’ economy, where the return on real capital and that on claims on real capital are not one and the same thing. Thus, a more satisfactory third alternative in Keynes discussion above would have been to disassociate the rate of profit from the rate of interest altogether and recognize that the interest rate has a “life of its own” (Robinson 1969, p. 242) - the very position Joan Robinson seems to have come to following in the footsteps of Kalecki and Marx. The formulation here is consistent with this third position.

<sup>15</sup> In his later book, *Information and Coordination*, Leijonhufvud (1981) has argued that effective demand problems are in essence “coordination failures caused by incomplete information.” This has prompted Solow (1984, p. 23), to retort that Leijonhufvud’s line of reasoning would lead one to think that the Second World War was caused by incomplete information: “if Hitler had known what was going to happen, he would have never invaded Russia, perhaps not even Poland.” Also, instructive is a comparison of Joan Robinson’s (1969, 1982) reviews of Leijonhufvud’s two books, (1968) and (1981). In the latter review, she remarks, “when I reviewed the earlier book I purported to find some sense in it (which surprised some of my colleagues) but this time I am quite defeated” (Robinson 1982, p. 295). Also, the author’s views on the Keynesian notion of equilibrium and the transition from the *Treatise* to the GT are found in Erturk (1966).

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