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## **Liquidity Preference Theory: A Comparison of William Baumol's and James Tobin's Propositions**

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### **Abstract**

*The refinement of liquidity preference theory was formulated by Baumol and Tobin in 1958 and their propositions were based on Keynesian model economy that emphasized on investing in risky assets, instead of transaction balances. William Baumol considered transaction balances to meet the working capital needs of the investors while Tobin emphasized on investment balances that premised on liquidity preference theory that seeks to explain the level of interest rate with regards to the interaction of money supply and desire of savers to hold their savings in cash or near cash. Therefore, the study attempts to compare and contrast liquidity preference theory of William Baumol and James Tobin's propositions. The study recommends*

*that since both of them are concerned about money, however what need to explain is not only the existence of demand for cash hence its yield is less than the yield on alternative assets but an inverse relationship between aggregate demand for cash and the level of different in yields.*

**Key words:** refinement, liquidity, preference theory, proposition, Keynesian model.

### Introduction

Liquidity preference theory was developed by Keynes during the early 1930's following the great depression with persistent unemployment for which the quantity theory of money has no answer to economic problems in the society Jhingan (2004). However, Uchendu (2011) stressed that, the theory, which was contained in his book, the general theory of employment, interest, and money published in (1936), rejected the notion that households and business want to hold a constant that, the income velocity of money depends on many complex variable factors. And the analysis also based on the presumption of constant velocity of money that was merely disguises the real character of causation (Pandey, 2005). Ankintoye (2000) also observed that, income velocity is not constant but its variability influenced by the level of interest rates, liquidity preferences, the change in income, the scale of anticipated expenditures, availability of money substitutes and the number of non-bank financial institutions. Keynes [1936], went further to distinguish three motive for holding money balances: (i) the transactions motive-to bridge the gap between receipt of income and planned expenditures; (ii) the precautionary motive-to provide a reservoir of purchasing power that can be used to finance unanticipated expenditures, and (iii) the speculative motive-to satisfy the desire to hold wealth in the most liquid form if one express interest rates on alternative assets to rise, thereby causing capital losses. The transactions demand for money relates to the need for cash balanced and to meet current assets and business transaction (Okpara 2010).

Generally, the transactions demand for money exists because people's income and needs are not perfectly synchronized (Gbosi, 2005). Parker (2007) asserted that, change in the transactions balances depend on such factors as level of income, employment, prices, business turnover, the normal periods between the receipt of income and disbursement of cash. Nzotta (2004) stated that, the transaction demand (L) is a direct and positive function of the level of income, and K (proportion of income kept for truncation purposes). According to Robinson, (2001), these could be expressed as follows:  $L_1 = K \cdot Y$ , where  $L_1$  = transaction demand for money,  $K$ =proportion of income kept for transactions purposes.  $Y$ = income. Jhingan (2004) agreed that, the precautionary demand for money relates to the desire of members of the public to provide for contingencies requiring sudden expenditure and to meet unforeseen opportunities of advantages purchases. This balance depends on the subjective factor of uncertainty and to some interest rates (Orsota, 2002). Transactions

and precautionary motives are relatively interest inelastic but income elastic (Akintoye, 2000). Ezirim (2005), observed that the implication of this is that as interest rate rise, the transactions and precautionary demand for money decline. The demand for transactions and precautionary balances could be combined into (L) function. The demand for money under the two motives ( $M_1$ ) is a function ( $L_1$ ) of level on income (Y) and is express as  $M_1 = L_1 Y$ . (Orsota 2002). However, the implication is that, the major determinants of transaction balances is the level of income rather than changes in the proportion of income kept for transactions purposes (Wrence, 1988). According to Andabai (2011) the expectations about changes in bond prices or changes in the current market rate of interest determines the speculative demand for money and he also expressed the speculative demand for money as:  $M_2 = L_2(r)$ . Where,  $L_2$  is the speculative demand for money. According to Andabai (2010), it is the expectation about changes in bond prices or in the current market rate of interest that determine the speculative demand for money.

#### Theoretical Framework

This theory was propounded by Lord Keynes in (1936), according to him the theory seeks to explain the level of interest rate with regards to the interaction of two important factors: the supply of money and desire of savers to hold their savings in cash or near cash. Keynes defines this theory as the rewards of not hoarding but the rewards for parting with liquidity for the specified period. This theory, therefore characterized as the monetary theory of interest as distinct from the real theory of the classical school of thought. Keynes (1936) further posits that, the determination of interest rates will be found in the money market and there are basically the supplies of money exogenously determined, while the demand for money depends on the following three motives. Keynes (1936) stressed that, money is held to finance expenditures, including both transactions and of the level of income. However, he believed that money is held for purpose other than as a medium of exchange. According to Koutsoyiannis (2003), speculative balances depend on the anticipated direction and magnitude of prospective changes in market interest rates. Nzotta (2004) opined that, if individuals believe that market interest rates are likely to increase in the future, they have an incentive to hold their wealth in the form of liquid assets in order to avoid the capital losses of long-term assets that would accompany the expected increase in interest rates.

Jhingan, (2004) confirmed that, those who hold money believe or expected that money balance will exceed the yield on alternative assets are said to exhibit liquidity preferences. Amadi and Akani (2005) were of the view that, more individual expect a future increase rates when the current level of interest rates is high. Andabai (2007) also view that, liquidity preference and the speculative demand for money are opined to be inversely related to the current level of interest rates. Liquidity preference as

seen here is the degree of risk aversion and the expected yield on alternative financial assets (Pandey, 2005). Okpara (2007) stated that, the total demand for money combines the speculative motive with the transaction and precautionary reasons Keynes called  $M_1$  which he made a function of nominal income. The part held for speculative purposes he called  $M_2$  which depends on the market rate of interest. Uchendu (2010) opined that,  $M_1$  and  $M_2$  should not be confused with the  $M_1$  and  $M_2$  definitions of money supply. According to Afolabi (1999), the demand for money (liquidity preference) depend on two factors: nominal incomes and the market rate of interest, alternately, the demand for money depends on a real income and the real rate of interest if the price level is constant or if the demand for money is stated in real terms.

According to Rose (2000), the rate of interest is the price of acquiring credit, usually expressed as a ratio of the cost of securing credit to the total amount of credit obtained. Interest rates send price signals to borrows, lenders, savers, and investor Andabai (2000). For instant, increase in interest rates (Deposit rate) generally will bring a greater volume of savings and loadable funds in the economy while lower rates of interest (Lending rate) attract borrowing and investment spending in the economy. According to Uchendu (2010), the functions of interest rate are as follows: it helps to guarantee that current savings will flow into investment that will promote economy growth, it retains the available supply of credit, generally providing loadable funds to those investment projects with the highest expected returns and it brings the supply of money into balance with the polices of demand for money. It is also an important tool of government policy through which its influence the volume of savings and investment (Akpan, 2004). Basically there are three theories on the determination of interest rate, Nzotta (2004): the loadable funds theory (classical theory of interest rate), Liquidity preference theory (Keynesian theory of interest rate), and the general Equilibrium theory (Hicks theory of interest rate). Jhingan (2005) opined that, loadable funds theory explain the determination of interest in terms of demand and supply. According to this theory, the rate of interest is the price of credit which is determined by the forces of demand and supply. Nzotta (2004) posited that, this theory, also called loadable funds theory, because it believe that, interest rates are determined by supply and demand funds.

Also according to Amadi and Akani, (2005) the loanable funds theory of interest at any time represents an equilibrium price at which the demand for credit from those who prefer to have the interest. However, Tokunbo (2005) posits that, the demands for loadable funds is from three sources, Government, businessmen and consumers, who used them for purpose of investment in the economy. Friedman (1970) stressed that, cash balances does not yield interest and has no risk, while bonds are associated with two basic risks: default and money rate risk. According to Ezenduji (2010), money risk refer to risk that market yields may rise (bond prices fall) thereby causing

bondholders to lose principal, if the bond has to be sold before naturally. Akintoye (2010) stated that, Keynes rate rise. Ezeuduji (1974) confirmed that, not all savings will be directly invested so that the rate will not necessarily establish equilibrium between saving and investment. Ogwuma, (2008) posits that, the determination of interest rates will be found in the money market and there are basically the supply of money and also the demand for money.

### **Baumol's Proposition**

Baumol (1952), in his inventory model view money balances as reservoirs of inventories or purchasing power that can be drawn to finance current expenditures Amadi (2005) stressed that, earning assets are considered to be an alternative to money balances as temporary repository of funds held to bridge the gap between receipts of income and its subsequent expenditure. Akintoye (2000) also confirmed that, inventory model of cash management implies that the amount of cash held in transaction balances is inversely related to the yield of alternative assets. Hence, the interest rate sensitively of the reason for expecting the income velocity of money to vary directly with the level of interest rates. However, Gbosi (2005) maintained that, the result that reinforces the liquidity preference affects the higher interest rates on velocity of money supply that was early posited by Keynes (1936). According to Anyanwu (1993), the incentive to economize cash balances by holding funds interest bearing assets must be weighed against the cost incurred in transferring funds to determine the optimal allocation between money and other assets.

Tokunbo (2005) also contended that, the velocity of money tends to increase as income rises, apart from the interest sensitive demand for transaction balances. This tendency results from economic of scale in management transaction, which implied by the inventory model (Higgins, 1978). Thus, the optimal amount of money balances held for transaction purpose increase proportionately less than anticipated expenditure because it become practically impossible to hold a larger percentage of working-capital balances in interest-earning assisted as the scale of expenditure increase (Jhingan, 2004). According to Pandey (2005), Baumol's model of cash balances under certainty. It further considers cash management similar to an inventory management problem. As such, the firm attempts to minimize the sum of the cost of holding cash and the cost of converting marketable securities to cash. Furthermore, Baumol's model of [1952] posits the following assumptions: (i) the firm is able to forecast its cash needs with certainty. (ii) The firm's cash payments occur uniformly over a period of time. (iii) The opportunity cost of holding cash is known and it does not change over time. (iv) The firm will incur the same transaction cost whenever it convert securities to cash.

Tokumbo (2003) stressed that, Baumol's treatise is based on optimum inventory of money for transactions purpose by the public. According to him, money balances are

inventory of purchasing power which could be drawn up when needed to finance expenditures. Akpan (2001) posits that, a firm's cash balance can usually be interpreted as an inventory of money which its holder stands ready to exchange against purchase of labour, raw materials etc. Parker (2007) categorically stated that, greater the increase in the volume of transactions. Baumol (1957) in his study concluded that, the relationship between the demand for transactions balance and income is neither linear nor proportional rather change income lead to less than a proportionate change in the transactions demand for money. Okpara (2010) concluded that, the central theme of Baumol's treatise could be summarized as follows: individuals received money income once in a period, monthly and would opened it all at constant rate over the period, cash balances are held because income and expenditure do not take place simultaneously, it is generally expensive to hold cash balances: thus these balances could be profitably invested in securities (bonds) here, idle balances are usually invested in bonds at an interest rate. The higher the interest rate, the less the transactions balance which the individual holds, while the lower interest rate, the more the cash balances he would hold: an individual is assumed to be a rational being and this will seek to minimize the cost of overtime.

#### **Tobin's Proposition**

The portfolio balance approach to money and other assets, developed by Tobin (1966), is natural and logical extension of the theory of liquidity preference. Since it focus attention on interest rates and explains the demand for money and which is primarily affected by a change in the money supply. However, the theory does not assume that securities and other non money assets are perfect substitutes for each other and hence it opines that, there are many different interest rates that are imperfect substitutes among earning assets (Ankintoye, 2000). Uchendu (2010) confirmed that, portfolio balance is a theory of assets choice, concerning the individuals and the community that allocate their holding among alternatives assets with the demand for each assets being measured as a proportion of total assets. Finally the theory emphasized that the demand for any assets, as a proportion of total assets, varies directly with its own implicit rate of interest and inversely with interest rates on substitute assets. The implications of Tobin's theory include: a change in the supply of money or any other differentiated asset causes the structure of interest rates to change. Money matters, but it is not economic changes while a change in money supply can go in either the same or opposite direction depending on how the money is changed (Gbosi, 2005). Modigliani (1944) observed that, Tobin demonstrated that changes in portfolios composition caused by efforts to avoid risk, lead to an inverse relationship between the demand for money and interest rate. According to Uchendu (2010) his work provides a frame work for diversification between holding money and bonds. Pandey (2005) further reveals that, normal investor risk aversion provides

a good foundation for explaining the inverse relationship between the quantity of money demanded and interest rates.

Orsota (2004) confirmed that, the theory resolved the major shortcoming of the Keynesian liquidity preference theory that depends on the inelasticity of expectation of future interest rate. According to him, the speculative demand for money is inversely related to interest rate. According to him, Tobin further posits that individuals are naturally risk averse and could prefer not to accept risk. Parker (2007) stressed that Tobin's theory resolved the major defects in the Keynesian postulations and he noted that, individuals usually hold a diversified portfolios or bonds and money rather than either bonds or money. Tobin's (1954) regards the demand for money as closely dependent and inversely related to interest rates. Therefore, Imo (2002) posited that, three types of investors were articulated by him such as (i) the risk averse investors, people who prefer to avoid risk of loss associated with holding bonds (ii) the risk plungers (risk neutral), these are people who accept that risk of loss in exchange is commensurate with income on investment. According to Nzotta (2004) these investors prefer diversification of their portfolio between cash and near cash assets and bonds, and [iii] risk lovers, these are investors who prefer and enjoy investing all their wealth in bonds. Uchedu (2010) stressed that, the prospect of a return, however, causes them to accept risk up to the point where the marginal disutility of the risk equal to the marginal utility of returns.

### **Conclusion and Recommendations**

The major comparison between Baumol and Tobin's propositions on liquidity preference was formulated from Keynesian school of thought. In spite of the fact that, both propositions are having different views of the theory, that is transaction balances and portfolio investment, and both scholars were still developed from the use of liquid assets. Consequently, their arguments were also based on Keynesian model economy, because Baumol and Tobin's propositions had a rational behaviour towards the use of cash and it influenced by interest rate, that is why, the transaction and investment balances views were optional to the scholars. Subsequently, the two propositions were based on interest rates and money and Baumol identified money as a source of all transactions while Tobin emphasized on the interest rate as the basis of all transactions. Baumol therefore opined that, liquidity preference theory is an inventory of purchasing power that base on finance while Tobin focused on the interest rate that will be use to explain the demand for money. The divergence views between Baumol and Tobin's on liquidity preference had created scholarly impact on the two models that had been formulated. Since the two propositions are based on Keynesian model economy, however what need to explain are not only the existence of demand for each hence its yield is less than the yield on alternative assets but an

inverse relationship between aggregate demand for each and the level of different in yields?

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