

CONCEPTUAL ANALYSIS OF DEMAND FOR MONEY IN DEVELOPING ECONOMIES

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Abstract

This study conceptually observes the demand for money theories of and their implications in analyzing the various monetary problems of the developing economies. The main objective of the present study is to analyze the stability function of demand for money models conceptually through demand for money models and to select an appropriate approach in the context of the developing economies since their evolution. After analyzing the various theories of demand for money from macroeconomic perspective, it yields stable (short and long run) function for the developing economies. The evolution of demand for money theories suggest that the money function in the modern approach is stable over time in comparison to the suggestion made by early monetarists. Furthermore, from the conceptual and empirical analysis, it can be concluded that there exist marked differences among the approaches of the demand for money in the context of developing economies. The study implies that these differences can be decreased considerably if one tries to make micro analysis in this context.

Introduction

Money is generally posed to occupy the unique characteristic of being accepted as a medium of exchange. So, it is demanded for its convenience of holding as the means of payments. In the light of this statement, two fundamental theories of the demand for money draw an attention to the researchers in monetary economics. These theories explain the significant role of the demand for money and its impact on the economic system. The first theory “the Quantity Theory of Money assigns an important role to money in the determination of prices and incomes by using it directly to the purchase and sale of goods and services”. Thus, the demand for money in this respect is viewed as the demand for means of payment. The second is “Keynesian theory of Money” on the next hand rejects the direct causal relationship and postulates an indirect relation by bringing money into the determination of real income or output, employment and interest rate. Hence, the demand for money is conceived keeping in view the medium of exchange. Thus, money acts as means of payments and the store of value functions (Dillard, [1979](#)).

Keeping in view these two theories of the demand for money approach, it has been argued by many researchers that the ideas given by quantity theorists is more appropriate than those of Keynes for the developing economies. For this purpose, the present study has been divided into five sections describing different theories of demand for money. The first section deals with Pre-Keynesian theories which explain the Cambridge cash balance approach by Fisher and Pigou. The second section explains the Keynesian liquidity preference approach. The third section interprets the post Keynesian developments by Baumol-Tobin's inventory theoretic approach. The fourth section describes the modern approach followed by M. Friedman and others and fifth section concludes the study.

The Pre- Keynesian Approach

The Pre-Keynesian approach was conceived in 1568 by Jean Bodin and the theory popularizes the story of France. The main underpinning of the classical theorists covers quantity theory of money made by David Hume (1752) and mathematical formulations of eighteenth century. However, Friedman, 1968 "the quantity theory of money was propounded in terms of the transaction version by Fisher (1911) and cash balance version by A. Marshall (1923) and AC. Pigou (1917)". The Fisher version was developed in his book "Purchasing Power of Money" in 1911 which represents the classical approach and analyzes the relationship between the quantity theory of money and the price level.

The Neo-classical version of quantity theory was propounded by Pigou's cash balance equation. The quantity theory of money represented different versions which demonstrated a strong relationship between money and the price level. The classical approach of demand for money revealed that it is determined by the total volume of goods and services transacted over a given time period and stated direct relationship between the money supply and the general price level (Sethi, 1992).

The Keynesian Approach

Keynes pointed analyzed Cambridge cash balance model approach in a more detailed framework of the demand for money. Keynes did not deny the validity of the quantity theory but added some variables for the improvement of the theory. His contribution towards demand for money is a detailed analysis of the factors affecting money demand function as seen in Fisherian and Cambridge approaches of demand for money among which is universally acceptable as a medium of exchange. Keynes (1930) postulated transaction demand of money more clearly than it was explained earlier. Keynes revealed that the money is demanded for liquidity preference. He discussed three motives for holding money and thus demanding it (i.e. transaction, precautionary and speculative motives). According to Keynes, individuals demand money to finance their daily purchases of goods and services, to meet unforeseen expenditure and also to hold it for making profit from the business. The demand for money stemming from the transaction motive is associated with the fixed technical coefficient view.

This implies that money is demanded to bridge the gap between the money received and money expended and is also demanded at the time between incurring costs and receiving profits from sales (Bains, 1952). The demands for money vary directly with the level of income for this purpose. The precautionary motive is needed for contingent events viz. expenditure caused by accident, ill health etc. The size of the money balance held for these reasons is likely to be influenced by the level of income. While the speculative demand for money focused on two alternative forms of holding financial assets i.e. money and long term bonds. Keynes believed that in deciding whether to hold money or bonds, investors would take account of the prospective capital gain or loss to holding bonds and the interest rate as well (Cuthbertson, 1988). For instance, if a capital loss on bonds is expected and the interest rate is expected not to decline in the future, people might hold a large amount of money at the existing interest rate. This situation is regarded as the liquidity trap situation by Keynes. The speculative demand for money, thus depends upon the expected capital gains on bonds as well as on the interest rate. "It is important to note that interest rate in the Keynesian system is related to the speculative motive". The other two approaches of transaction and precautionary motives may not be ignored because of the fact that money held for one purpose is a perfect substitute for other purposes as well. Thus, it would be better to give equal consideration to all the motives in connection with the theory of the demand for money Dillard (1979). To derive the total demand for money, Keynes brought together the transactionary and precautionary demands which are fairly stable functions of income whereas the speculative demand for money is sensitive to the changes in the rate of interest. In the Keynesian model of demand for money, when the rate of interest falls, the demand for money is relatively low. It is so because people hold their bonds in expectation of capital gains. They want to avoid capital losses on holding bonds if the rate of interest is expected to rise. Consequently, the demand for money is relatively high. The simple form of the Keynesian demand for money function shows the relationship of transaction and precautionary balances with the level of income and the speculative balances with the rate of interest.

However, in Laidler's (1977) opinion, the wealth variable should be included in the speculative demand on the assumption that a portion of total asset is required to held in cash. If people have a certain stock of money in real terms, any change in the rate of interest would have a little impact on their money balances. If more money is supplied by monetary authorities in the economy, it would simply induce people to spend on goods and services. Hence, the demand for money is primarily based on the inelastic response of interest rate and it shows the Pigouvian real balance effect in the economy (Patnaik, 1981). Nevertheless, in the Keynesian framework if a desire to hold cash balances is affected by the rate of interest or bond prices, an increase in the money supply by the authority would induce people to hoard idle balances rather than to spend on goods and services. On the whole, the Keynesian approach to the demand for money arrives at a conclusion completely opposite of the Fisherian approach. In Fisher's model, the demand for money being insensitive to the rate of interest is stably related to the volume of transactions in the short period. In Keynes' model, the stability in transaction demand follows Cambridge approach, but the total demand for money is determined by the speculative behavior of individuals.

The Inventory-Theoretic Approach

Though Keynesian version of demand for money represents a significant improvement over the Cambridge approach but it also suffers from some inconsistencies. Keeping in view Keynes' theory of the liquidity preference, Baumol (1952) and Tobin (1956) developed the inventory theoretic approach of demand for money. Notwithstanding their work being independent of each other they arrived at similar conclusions. Baumol (1952) took a slightly simple approach to the theory of money demand. He used the idea that each individual wants to keep some portion of his income in the form of cash to act as a means of payment for his planned purchases. Thus, the demand for money may be conceived to be determined by the minimization of total cost of transactions. The total cost comprises of an interest rate foregone for the money held instead of bonds and the brokerage fee involved in converting bonds into cash. The model specifies the demand for cash balances is proportional to the square root of the value of transactions and is inversely proportional to the square root of the rate of interest. Thus, Baumol's approach in comparison to Keynes has advantages as it shows the interest elastic response in the transaction demand for money. Further, other economists Brunner and Meltzer (1967), Ahmad (1977) reformulated the results on the transaction demand for money originally developed by Baumol. They used it for re-establishing the validity of the quantity theory of money. They claimed on the basis of empirical findings that for large values of income or small values of fixed costs, the elasticity of demand comes to unity and there are no economies of scale in the use of money. Furthermore the consensus from the empirical estimates seems that the approximate unitary elasticity of income in money demand is sufficient to test the validity of the quantity theory. The interest elasticity of the demand for money is low and negative. Despite this, the application of Baumol's inventory theoretic approach has been considered as an intuitive appeal to the analysis of the demand for money. It is generally believed that inventories are kept in hand to bridge the gap between sales and purchases, and money is held to meet the interval between receipts and expenditures. Thus, Kaminow (1969) suggested applying this model in order to determine the portion of liquid assets as a means of payment and to decide the rate of net taxes as an opportunity cost of holding money.

Tobin (1958) introduced the concept of risk aversion to derive the portfolio selection in the aggregate demand for money. He formulated a model through which a desire for risk aversion and utility maximization from wealth would lead to an individual to choose a diversified portfolio of both money and bonds (Paul 1992). Tobin is of the view that an individual in an uncertain situation would hold both money and bonds and he would assume to have a subjective probability distribution of future events. Though Tobin's approach yields the conclusion akin to that of Keynes, it is superior in the sense that it reveals the rational behavior of wealth holders in making the continuous liquidity preference function. Furthermore, it can be extended to the problem of asset choice on account of the availability of more alternatives in holding wealth portfolio. From this analysis, it can be summed that the theoretical implication of Baumol-Tobin approach to the transactions demand for cash appears to be more far reaching than originally realized. In contrast

with the completely deterministic model of the transaction demand for money, studies of the precautionary demand for money were conducted with emphasis on the stochastic nature of transactions. Along this line, Miller and Orr (1966) highlighted the stochastic process in the net disbursement underlying the demand for money. Using Baumol-Tobin model, Sprenkle (1967) and Tsiang (1969) concluded that the addition of uncertainty lowers the demand for money, and thus in effect the precautionary demand is negative. However, the conclusion of Stevens (1971) differs in the sense that a firm holds larger cash balances when its decisions are made for the large payments under uncertainty conditions. Thus, in this perspective, the amount demanded for precautionary cash balances is small and positive. To integrate the transactions and precautionary demand for money, Frenkel and Jovanovic (1980) tried to make some improvement over the previous works (Baumol, Tobin, Miller and Orr) by applying the principle of inventory management. Faig (1989) observed that the preceding approaches were too abstract to fully capture the usefulness of money in transactions. He suggested to use seasonal fluctuation as a better proxy transaction variable in the demand for money function in order to confirm the idea that money balances are useful for relatively small transactions. Finally, it is also important to note that in a simple version of target threshold model under the framework of inventory theoretic approach, receipts and disbursements are assumed to be known with certainty. However, Akerlof and Milbourne (1980) introduced an element of uncertainty concerning the timing of expenditure in an extension of the target-threshold model. To sum up, the overall discussion of inventory theoretic approach tends to remove inconsistencies of Keynes' theory on the ground that people do not hold two types of money stocks (M1 and M2). Instead, they hold only one money stock (M). It also reflects the development of subsequent literature treating the demand for money function in aggregate form.

The Modern Approach

M. Friedman (1956, 1959), a leading economist of Chicago School, restated the quantity theory in a similar manner. He put forth the demand for money as dependent on money income and prices and that money is one of the form of holding assets including physical and human. Thus, money in his opinion, is a durable consumer goods which can be held for the services it renders (Peterson, 1972). The demand for the stock of money is equivalent to the demand for the flow of services. It is argued that Friedman presented an analytical framework of the quantity theory that conveys the favor of Chicago tradition.

“ He also attempted to clear the conceptual framework of the quantity theory with the assertion that the demand for money does not become infinitely interest elastic, but it is relatively interest inelastic” (Patinkin, 1972). Although the starting point of Friedman's analysis was essentially the Keynesian view but, his ideas have been linked with the classical approach under the restatement of quantity theory of money. He assumed money as an asset which yields services to the people. In his empirical analysis, he made a clear distinction between human and non-human wealth and asserted that the demand for money is dependent on total wealth.

Conclusion

To come back to the original money demand function, Meyer and Neri suggested following the expectation hypothesis about the relationship between desired and actual balances. The model based on empirical evidence, leads to support the transaction and financial motives for holding real balances. It shows that the amount demanded for real balances depend not only on current or permanent income but also on real planned transactions. Taking into account the main issues raised by Friedman in contrast to the Keynesian one, it has been argued that the stability of the demand for money is the essence of the quantity theory. However, this does not necessarily prove that quantity theory is better than the Keynesian theory (Johnson, [1978](#)). In respect of the stable relationship, the modern monetarists Laidler (1972), Brunner and Meltzer ([1972](#)) believed at lower interest elasticity money is regarded as a general substitute for all other assets rather than a specific substitute for interest bearing financial assets. Friedman in his early writings argued that interest rate may play an important role in the demand for money. He revealed that the interest rates do not play a significant role in the demand for money function. Thus, the demand for money and its stability gained a significant attention of the monetarists.

Goldfeld's ([1973](#)) indicated relatively simple formulation of the demand for money yields stable (short and long run) functions. Frenkel and Johnson ([1976](#)) assumed the existence of a stable demand for money approach from an accounting framework into a body of substantive theory. However, Lieberman ([1979](#)) suggested the omission of technical change as an important source of instability in money demand equation. Despite the large body of empirical evidence supporting the existence of a stable function over short and long period of time, the issue still appears to remain open Cargill & Meyer ([1979](#)). Keeping these views in mind, Laidler (1981) begins with quantity theory approach used by Friedman and points out that the demand for money is an empirically stable function of some measurable variables. The inclusion of price inflation as an expected rate of return on money 'establishes the well determined relationship with money demand Thus, Laidler concentrated mainly on testing the reliability of relationship produced by monetary theories. Summarizing the results of the prior short-run models on the demand for money functions, Akerlof ([1982](#)) gave a new outlook to those issues which were implicit in the old approaches. In this connection, he rightly remarked that in Friedman's approach the velocity is constant. Rao & Singh (2006) summarized that demand for money is stable function but in comparison to the recent findings of demand for money in several economies, due to financial reforms and financial innovation has reflected a stable function. Thus, it is clear from the foregoing discussion that the demand for money function in the modern approach is stable over time in comparison to the suggestion made by early monetarists. Furthermore, empirical studies in this field have brought out the key issues to specify and test the alternative theories of money demand. To sum up, there exist marked differences among the approaches on the demand for money. These differences may shorten considerably if one tries to make empirical analysis of the demand for money function.

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