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2.5 Friedman and the 'restatement' of the Quantity Theory of money

Milton Friedman (1956) in his article "The Quantity Theory of Money: A Restatement" sought to shift the focus of the Quantity Theory and bring it into closer proximity with the developments in monetary theory up to the mid-1950s. Three strands of these developments are important to note. One of these was the development of Keynesian macroeconomics which placed the determination of the price level in a broad based macroeconomic model with product, money and labour markets, and restricted the analysis of the money market to the specification of the demand, supply and equilibrium in the money market. This development had argued that the price level can be affected by changes in the product markets such as induced by investment, and that changes in the money supply could affect output, and not merely prices, in an economy operating at less than full employment. The second development was Keynes' emphasis on the speculative demand for money and therefore on the role of money as a temporary store of value for the individual's wealth. The third development was the integration of the theory of the demand for money into that of goods generally by treating money as a consumer good in the consumer's utility function and as an input in the firm's production function. (Patinkin, 1965).

Friedman argued that the Quantity Theory was merely the proposition that *money matters*, not the more specific statement that changes in it will cause proportional changes in the price level. The term 'money matters' meant that changes in the money supply could cause changes in nominal variables and sometimes even in real ones, such as output and employment in the economy.

Friedman restated the Quantity Theory to limit its main role to that of a theory of the demand for money. For consumers, the demand for money was made identical to that of other consumer goods,

with real balances being one of the goods in the consumer's utility function. In this role, Friedman viewed real balances as an asset, with money stocks, bonds and physical assets being alternative forms of holding wealth. For firms, the demand for money was made identical with that of physical capital goods, with money appearing as an input in the firm's production function.

Individuals may hold money as a medium of exchange for financing transactions or purely as a store of value. However, in the former case, its durability ensures that it serves as a store of value even when it is being basically held for its medium of exchange characteristic. Similarly, an individual holding money balances as a store of value cannot but benefit from their medium of exchange characteristic if the need arises. Friedman, therefore, concluded that it is best to view cash balances held for either purpose as being an asset, among many, for consumers, so that it was one form of holding wealth. For firms, it was a durable good, similar to physical capital. Friedman, therefore, concluded that the analysis of the demand for money was a special topic in the theory of the demand for consumer and capital goods.

Further, Friedman argued that a unit of money is not desired for its own sake but for its purchasing power over goods, so that it is a good in terms of its real and not its nominal value. This real purchasing power of money over commodities is reduced by the rate of inflation so that the rate of inflation is the cost of holding real balances as against holding commodities.

Since a unit of money yields services in the present, it is like a consumer good and the demand for it is affected by the prices of consumer goods. Since it is also a store of value, it is like other assets and the demand for it must also depend upon the yield on other assets. These yields, to reflect the concern of the individual with his purchasing power, must be taken to be in their real and not their

nominal value. Thus, in periods of inflation, the individual would discount the nominal yields on assets by the rate of inflation.

Friedman further argued, as in his consumption theory, that the individual will allocate his lifetime wealth over commodities and over the liquidity services of real balances, with this wealth being the sum of his human and non-human wealth. Human wealth (HW) is defined as the present discounted value of labour income while non-human wealth (NHW) consists of the individual's financial and physical assets. Since the value of these assets is known in the present, while future labour income is uncertain, the degrees of uncertainty affecting human and non-human wealth are quite different, so that their effects on the demands for commodities and money would also be different. Friedman proxied the individual's degree of uncertainty of wealth by the ratio of his human to nonhuman wealth.

Therefore, according to Friedman, the main determinants of the individual's demand for real balances were the real yields on other assets (bonds, equities and physical assets), the rate of inflation, real wealth and the ratio of human to nonhuman wealth. Writing this demand function in symbols,

$$m_d = M^d/P = m^d(r_1, \dots, r_n, \pi, w, \omega) \quad (1)$$

where:

- m^d demand for money balances in real terms
- M^d demand for money balances in nominal terms
- P price level
- r_i yield in real terms on the i th asset
- π rate of inflation
- w wealth in real terms
- ω ratio of human to nonhuman wealth (=HW/NHW)

Permanent income instead of current income as the scale determinant of money demand

Since data on human and total wealth was not available, Friedman proxied total wealth by permanent income y^p . At the theoretical level, the relationship between these variables is specified by:

$$y^p = rw \quad (2)$$

where r is the expected average interest rate over the future and permanent income y^p can be interpreted as the average expected income over the future. In line with Friedman's work on the consumption function, Friedman employed adaptive expectations - which uses a geometric lag of past incomes - to estimate y^p . This procedure will be covered in chapter 7.

Since the demand function is derived from the consumer's utility function, which represents the individuals' tastes, shifts in these tastes will shift the demand function. Friedman sought to take account of such shifts by incorporating a variable u for tastes in the demand function.

Substituting y^p instead of w and adding a new variable u , in the manner of Friedman's article, the demand function for real balances becomes:

$$m_d = M^d/P = m^d(r_1, \dots, r_n, \pi, y^p, \omega, u) \quad (3)$$

The velocity of money

Since the velocity of circulation V equals Y/M , and M in equilibrium equals M^d , we have:

$$V = \frac{y}{m^d(r_1, \dots, r_n, \pi, y^p, HW / NHW, u)} \quad (4)$$

Therefore, for Friedman, velocity was not a constant but a real variable that depended upon the yields on alternative assets and other variables. Again, except for the introduction of permanent income as a determinant on the right side, (22) was consistent with the Keynesian tradition.

Friedman versus Keynes

In comparison with Keynes' analysis, Friedman's main concern in deriving his demand function was with money as an asset held as an alternative to other forms of holding wealth. This was narrower than Keynes' analysis - and also differed from the Classical and Quantity Theory approach¹ - which had included the transactions and precautionary motives/objects for holding money.

However, Friedman did quite correctly point out that money balances could not be separated by the function they performed, as Keynes had done, since each dollar held performed a variety of functions. Hence, (21) could not be separated into three separate components corresponding to Keynes' three motives for holding money. Further, Friedman believed that the demand for money does not become infinitely elastic – i.e., in the absence of a liquidity trap. As we have mentioned earlier, Keynes had also downplayed its practical importance.

Friedman's specification of the money demand function, except for its replacement of current income by wealth or permanent income, was hardly new or distinct from the Keynesian tradition. In many ways, it was an elaboration and restatement of the Keynesian money demand function, modified to take account of the contributions in the literature, especially by Patinkin, since Keynes' writings. It was not an elaboration or restatement of the Quantity Theory, despite Friedman's claim for it, and could more appropriately have been labeled as a statement of the Keynesian money demand function or of the portfolio approach – as in Tobin (1958) - to money demand topical in the 1950s. (Patinkin, 1969).²

¹ By comparison, the primary emphasis of the Quantity Theorists was on the relationship between money and current expenditures on goods and services.

² Patinkin, another economist at the University of Chicago in the 1950s, presented a clearer and more accurate representation of the Chicago tradition and argued that Friedman was closer to the Keynesian tradition than the Quantity Theory one. He points out the strong influence of Keynesian monetary ideas on the Chicago School

Friedman on the money supply

Friedman also asserted that the supply function of money was independent of the money demand function. Some of the important determinants of the former, including political and psychological factors, were not in the latter. Hence, the money demand and supply functions were separate and could be identified in the data.

Friedman versus Keynes on the stability of the money demand and velocity functions

It was Friedman's additional remarks on his money demand and velocity functions that set him apart from Keynes and the early Keynesians and came from his traditional Classical heritage. Among these was his assertion that both the money demand and velocity functions were highly stable. This differed from the viewpoints of many, though not all, Keynesians during the 1940s to the 1960s that these functions were volatile³ and, therefore, essentially unpredictable. This had led them to the implication that monetary policy could not be a reliable stabilization policy, so that fiscal policy was to be the strongly preferred policy tool.

Friedman further asserted that the money demand and velocity functions were even more stable than the consumption function.⁴ The stability of the latter was the linchpin of the Keynesian analysis and enthusiastic support for fiscal policy at the time. Friedman's assertion meant that monetary policy would, at least, also have a strong impact on the economy. The success of Friedman's agenda was such that the Keynesians by the early 1960s had accepted monetary policy as having a strong and fairly reliable impact on aggregate demand, so that a synthesis – known as the neoclassical-Keynesian

during the 1940s and 1950s, especially in terms of the emphasis on the portfolio demand for money, and on Friedman's own analysis.

³ Remember that Keynes' speculative demand was dependent on subjective market expectations and, therefore, could be highly volatile.

synthesis - emerged in the 1960s. This synthesis was reflected in the common usage of the IS-LM model for the macroeconomic analysis of the impact of monetary policy on aggregate demand. The divisions among these schools were henceforth confined to questions of the further impact of aggregate demand changes on output and unemployment.

These policy issues and some other aspects of Friedman's contributions to monetary theory and policy will be discussed at greater length in the macroeconomic chapters 13 to 17.

⁴ Friedman sought to establish this in his later publications, jointly with David Meiselman.