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and transportation as it affects the time required to make a payment—essentially, that is, to emphasis on the mechanical aspects of the payments process. The cash-balances approach, on the other hand, leads to stress being placed on variables affecting the usefulness of money as an asset: the costs and returns from holding money instead of other assets, the uncertainty of the future, and so on—essentially, that is, to emphasis on the role of cash in a portfolio.

Of course, neither approach enforces the exclusion of the variables stressed by the other—and the more sophisticated economists who have used them have had broader conceptions than the particular approach they adopted. The portfolio aspects enter into the costs of effecting transactions and hence affect the most efficient payment arrangements; the mechanical aspects enter into the returns from holding cash and hence affect the usefulness of cash in a portfolio.

Finally, with regard to analytical techniques, the cash-balances approach fits in much more readily with the general Marshallian demand-supply apparatus than does the transactions approach. Equation (6) can be regarded as a demand function for money, with P and y on the right-hand side being two of the variables on which demand for money depends, and with k symbolizing all the other variables, so that k is to be regarded not as a numerical constant but as itself a function of still other variables. For completion, the analysis requires another equation showing the supply of money as a function of other variables. The price level or the level of nominal income is then the resultant of the interaction of the demand and supply functions.

The quantity theory in its cash-balances version thus suggests organizing an analysis of monetary phenomena in terms of (1) the factors determining the nominal quantity of money to be held—the conditions determining supply—and (2) the factors determining the real quantity of money the community wishes to hold—the conditions determining demand.

3. Supply of Money in Nominal Units

The factors determining the nominal quantity of money available to be held depend critically on the monetary system. For systems like those which have prevailed in the United States and in the United Kingdom during the past century, they can usefully be analyzed under the three main headings that we have termed the proximate determinants of the money stock: (1) the amount of high-powered money—for any one country this is determined through the balance of payments under an international commodity standard, by the monetary authorities, under a fiduciary standard; (2) the ratio of bank deposits to bank holdings of high-powered money—this is determined by the banking system subject to whatever requirements are imposed on them by law or the monetary authorities; and (3) the ratio of the public's deposits to its currency holdings—this is determined by the public (Friedman and Schwartz 1963*b*, pp. 776–98; Cagan 1965).

4. The Demand for Money

J. M. Keynes's liquidity preference analysis (discussed further in section 5, below) reinforced the shift of emphasis from the transactions version of the quantity equation to the cash-balances version—a shift of emphasis from mechanical aspects of the payments process to the qualities of money as an asset. Keynes's analysis, though strictly in the Cambridge cash-balances tradition, was much more explicit in stressing the role of money as one among many assets, and of interest rates as the relevant cost of holding money.

More recent work has gone still further in this direction, treating the demand for money as part of capital or wealth theory, concerned with the composition of the balance sheet or portfolio of assets.

From this point of view, it is important to distinguish between ultimate wealth holders, to whom money is one form in which they choose to hold their wealth, and enterprises, to whom money is a producer's good like machinery or inventories (Friedman 1956).

a) *Demand by Ultimate Wealth Holders*

For ultimate wealth holders, the demand for money, in real terms, may be expected to be a function primarily of the following variables:

i) *Total wealth.*—This is the analogue of the budget constraint in the usual theory of consumer choice. It is the total that must be divided among various forms of assets. In practice, estimates of total wealth are seldom available. Instead, income may serve as an index of wealth. However, it should be recognized that income as measured by statisticians may be a defective index of wealth because it is subject to erratic year-to-year fluctuations, and a longer-term concept, like the concept of permanent income developed in connection with the theory of consumption, may be more useful (Friedman 1957, 1959; Brunner and Meltzer 1963; Meltzer 1963).