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The "True" Money Supply: A Measure of the Supply of the Medium of Exchange in the U.S. Economy

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The "True" Money Supply (TMS), developed by Professor Murray Rothbard and myself,¹ is an admittedly imperfect attempt to provide a statistical measure of money that is consistent with the theoretical definition of money as the general medium of exchange in society.²

Measures of the U.S. money stock in current use in economic and business forecasting and in applied economics and historical research are flawed precisely because they are not based on an explicit and coherent theoretical conception of the essential nature of money. Given the all-pervasive role of money in the modern market economy, existing money-supply measures therefore tend to impede, rather than to facilitate, a clear understanding of the past or future development of actual economic events. Each one of the familiar set of M's calculated by the Federal Reserve System, for example, both excludes some items that are identifiable as money by our definition and includes other items that lack the essential properties of a general medium of exchange.

As the general medium of exchange, money is a good ~~universally and routinely accepted in exchange by market participants~~; or, put another way, it is the one good that is traded for all other goods on the market. One important implication of this fact—and an important empirical test of whether or not a thing can be counted as money—is that money serves as *the final means of payment in all transactions*. For instance, credit cards are not counted as part of the TMS, because use of a credit card in the purchase of a good does not finally discharge the debt created in the current transaction. Instead, it gives rise to a second credit transaction that involves present and future monetary payments. Thus the issuer of the card or lender is now bound to pay the seller of the good immediately with money on behalf of the card-holder or borrower. The latter, in turn, is obliged to make a monetary repayment of the loan to the issuer at the end of the month or at a later date, at which time the transaction is finally completed.³



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In the case of a paper fiat money, such as the current U.S. dollar, there is a second test that can be applied to determine whether a particular item should be counted in money supply statistics. Unlike any good produced in the market, including a commodity money, whose quantities are ultimately determined by the interaction of supply and demand,⁴ the quantity of government fiat money (but not its purchasing power) at any point in time is determined solely by decisions of suppliers of the good, i.e. government central banks, without respect to the desires and actions of the demanders. The fact that money is routinely accepted

INSIDE

- James M. Buchanan: Nobel Prize Winner 7
- Early Italian Economists 9
- Southern Economics Association 10

as the final means of payment by all participants in the market means that fiat money can be literally lent and spent into existence regardless of the public's existing demand for it. For example, if an additional quantity of Fed notes is printed up and spent by government on various goods and services, an excess supply of money will temporarily be created in the economy. The initial recipients of the new money will quickly get rid of the excess cash simply by increasing their own spending on goods; those who eagerly receive the new money as payments in the second or later rounds of spending will do likewise, in the process bidding up the prices of goods, reducing the purchasing power of the dollar, and, consequently, increasing the quantities of dollars that each individual desires to keep on hand to meet expected future payments or for other purposes. In summary, any excess supply of fiat money does not go out of existence, but is spent and respent and continually passed on like a "hot potato" throughout the economy until the surplus money is finally and fully absorbed by the resulting increase in general prices and in desired dollar holdings.⁵ It is this criterion which is applied below in resolving the apparent inconsistency of including demand deposits and money market deposit accounts (MMDAs) in the TMS, while excluding checkable money market mutual fund (MMMF) equity shares.

In what follows, I explain briefly why various items have been included in or excluded from the TMS. To simplify the exposition, I organize my explanation around the several Fed definitions of the money supply and of total liquid assets.

Components of M1

Currency in the hands of the nonbank public, i.e., excluding currency held by the U.S. Treasury, the Fed, and in the vaults of commercial banks, is counted in the TMS, precisely because it is the physical embodiment of the generally accepted medium of exchange in the U.S. economy. Federal Reserve notes of various dollar denominations (as well as token coins and paper notes issued by the U.S. Treasury) are the "standard money" or ultimate "cash" of the U.S. monetary system, having replaced gold in this function, at least for American citizens, in 1933.

Demand deposits or checking account balances at commercial banks and other checkable deposits, such as NOW accounts held at S&Ls, are included in the TMS by virtue of the fact that they are claims to the standard money redeemable at par on demand by the depositor or by a third party designated by the depositor. Despite the fact that these deposits are only fractionally backed by cash or immediately cashable reserve deposits at the Fed, their instantaneous redemption at par value is effectively guaranteed by two factors. First there is federal deposit insurance, which legally insures up to \$100,000 of each and

every depositor at a given bank or thrift against loss, but which, in practice, has almost always guaranteed the full worth of all deposits, usually by subsidizing the merger of an ailing institution with a healthy one.⁶ Second and more importantly, there is the Fed itself, which, in its much publicized function as the "lender of last resort," always stands ready to head off a banking panic by simply printing up and lending the needed quantities of Fed notes to banks or thrifts unable to meet their demand liabilities.⁷ For these reasons, checkable deposits held at federally-insured banks and thrifts are readily acceptable in exchange as perfect substitutes, dollar for dollar, for Federal Reserve notes.⁸

In contrast, travelers' checks issued by nonbank financial institutions, such as American Express, are excluded from the TMS because they neither are riskfree claims to immediate cash nor serve as final means of payment in transactions. ~~What a travelers' check represents from an economic~~ point of view is a credit claim on the investment portfolio of the issuing company. The purchase of travelers' checks from American Express involves, in effect, a "call" loan by the purchaser to American Express, which the latter pledges to repay to the purchaser or to a designated third party at an unspecified date in the future. In the meantime, most of the proceeds of such loans are invested by American Express on its own account in interest bearing assets, while a fraction is held in the form of demand deposits to meet anticipated payments of its travelers' check liability as they "mature." In exchange for the foregone interest (and a small fee) the purchaser receives access to an alternative payments system which avoids the risk of loss associated with carrying cash payments and the potential delay or nonacceptance involved with payment by personal check drawn on a distant bank. But the travelers' checks themselves are not the final means of payment in a transaction;⁹ the sellers who receive travelers' checks in exchange quickly and routinely present them for final payment at a bank and obtain either cash or a credit to their demand deposit accounts, with the sums paid out ultimately being debited to the demand deposit account of American Express. Moreover, in the highly unlikely event that financial reverses force the issuing company into institutional liquidation, the holders of its outstanding stock of travelers' checks would be, economically and legally, in the same boat as debtholders of any insolvent business firm, having no political guarantee of a dollar-for-dollar payoff of their debt claims, such as that provided by federal deposit insurance and privileged access to the lender of last resort.

Components of M2 Not Included in M1

Savings deposits, whether at commercial banks or thrift institutions, are economically indistinguishable from demand deposits and, are therefore included in the TMS. Both demand and savings deposits are federally insured under the same conditions and, consequently, both repre-

sent instantly cashable, par value claims to the general medium of exchange. The objection that claims on dollars held in savings deposits typically do not circulate in exchange¹⁰ (although certified or cashier's checks may be readily drawn against such deposits and are certainly generally acceptable in exchange), while not unimportant for some purposes of analysis, is here beside the point. The essential, economic point is that some or all of the dollars accumulated in, e.g., passbook savings accounts are effectively withdrawable on demand by depositors in the form of spendable cash.¹¹ In addition, savings deposits are at all times transferrable,¹² dollar for dollar, into "transactions" accounts such as demand deposits or NOW accounts.¹³

The common-sense case for the inclusion of savings deposits in the stock of general media of exchange was cogently presented by the eminent German banker and economist, Melchior Palyi:

In their own minds, money is what people consider as purchasing power, available at once or shortly. People's "Liquidity" status and financial disposition are not affected by juristic subtleties and technicalities. One kind of deposit is as good as another, provided it is promptly redeemable into legal tender at virtual face value and is accepted in settling debts. The volume of total demand for goods and services is not affected by the distribution of purchasing power among the diverse reservoirs into which that purchasing power is placed. As long as free transferability obtains from one reservoir to the other, the deposits cannot differ in function or value . . .

A source of confusion is the identification of savings deposits with savings. The former are no more and no less 'saved' than are the funds put on a checking account or the currency held in stockings. In all three cases, someone is refraining from consumption (for the time being); in all three, the funds constitute actual purchasing power. And it makes no difference in this context how the purchasing power is generated originally: dug out of a gold mine, 'printed' by a government agency, or 'created' by a bank loan. As a matter of fact, savings banks and associations do exactly what commercial banks do: they build a credit structure on fractional reserves.¹⁴

Overnight repurchase agreements or "RPs" were devised in the mid-1970s as a means of evading the legal prohibition against the payment of interest on demand deposits. They are, in essence, interest bearing demand deposits held by business firms at commercial banks and therefore are included in the TMS. In a repurchase agreement, a firm, in effect, makes a loan to a bank which is collateralized by government securities. The bank "sells" government securities to the firm with an agreement to "repurchase" them the following day at a slightly higher price, i.e., to

repay the loan plus interest. When the purchase or loan initially made, the bank debits the firm's demand deposit balance and credits its RP account by the amount of the loan. On the following day, the bank repays the loan with interest by reversing the process and crediting the firm's demand deposit with a sum that exceeds the previous day's debit by the amount of the interest payment. Since the loans are maturing daily, the firm has virtually instant access to the full amount of its dollars on deposit with the bank.¹⁵

Overnight Eurodollars are counted in the TMS for the same reason as overnight RPs: they are basically an accounting fiction that permit U.S. banks to pay interest on their business demand deposits and are therefore virtually redeemable on demand. In the case of overnight Eurodollars, deposits are made by U.S. firms in interest-bearing accounts at the Caribbean bank of a U.S. bank, where U.S. interest-rate regulations have no legal force. The dollars thus deposited plus interest earned are credited daily to the firms' demand deposit accounts held at the parent bank.

Money market deposit accounts, as a hybrid of demand and savings deposits, are considered part of the TMS. MMDAs are federally insured up to \$100,000 per account, feature limited checking privileges, and offer par value cashability upon demand of the depositor.

Although MMMF share accounts at first glance look like MMDAs, they are clearly excludable from the TMS because they are neither instantly redeemable, par value claims to cash, nor final means of payment in exchange. This requires a brief explanation of the nature of MMMFs.¹⁷

Each MMMF share represents a claim to a pro rata share of a managed investment portfolio containing short-term financial assets, such as high-grade commercial paper, certificates of deposit, and U.S. Treasury notes. Although the value of a share is nominally fixed, usually, at one dollar, the total number of shares owned by an investor (abstracting from reinvested dividends) fluctuates according to market conditions affecting the overall value of the fund's portfolio.¹⁸ Under extreme circumstances, such as a sharp rise in short-term interest rates or the bankruptcy of a corporation whose paper the fund has heavily invested in, the fund's investors may well suffer a capital loss in the form of an actual reduction of the number of fixed-value shares they own. Unlike a check drawn on a demand deposit or MMDA, therefore, an MMMF draft does not simply represent a direct transfer of current claims to currency, but a dual order to the fund's manager to sell a specified portion of the shareowner's asset holdings and then to transfer the monetary proceeds to a third party named on the check.¹⁹ Note that the payment process is not finally completed until the payee receives money, typically in the form of a credit to his demand deposit.²⁰

Another feature that distinguishes checkable MMMF shares from demand deposits and MMDAs is the fact that the former cannot be permanently expanded beyond the limit set by the public's willingness to hold such assets. If an excess supply of fund shares happens to emerge, the consequence would not be the general rise in prices occasioned by people's attempts to rid themselves of surplus dollars through increased spending.²¹ Unwanted MMMF shares simply go out of existence, as fund investors directly redeem them for money or use MMMF drafts to purchase alternative investment assets or consumers' goods. In the extreme case, if the public suddenly preferred to invest directly in the short-term credit market, without the intermediation of managed mutual funds, checkable MMMF shares would simply disappear from existence.

It is important to realize that the existence of MMMFs does have an effect on overall prices in the economy, but not because checkable fund shares constitute an addition to the money supply. Rather, the liquidity and checkability features of these assets permit their holders to reduce the amount of money they need to keep on hand to meet anticipated payments and to insure against future contingencies. This is also true, as we saw, of credit cards, which similarly provide their holders with access to an alternative payments system that economizes on money. By thus reducing the overall demand for money, MMMFs and credit cards encourage a higher rate of aggregate spending in the economy that results in a general rise in prices. However, the price increase associated with a given expansion of MMMFs is a "one-shot" phenomenon, whose magnitude is strictly governed by the corresponding reduction in the aggregate desired money balances of market participants. This sharply contrasts with inflation, which typically refers to a money-supply phenomenon involving a persistent decline in the purchasing power of the monetary unit that results from the creation of additional quantities of government fiat money, which, in theory, is limited only by the onset of a hyperinflationary currency breakdown.

Small-denomination time deposits refer mainly to federally-insured certificates of deposit (CDs) in denominations of less than \$100,000 and are excluded from the TMS because they involve loans by the public to banks and thrifts.²² As time deposits, CDs nominally are not cashable on demand, but are payable in dollars only after a contractually fixed period of time ranging from thirty days to a number of years. However, the fact that issuing institutions stand ready to redeem these liabilities in current dollars at any time prior to maturity does constitute a theoretical argument for their inclusion in the TMS at their current redemption value. On the other hand, depositors do have a strong incentive to abstain from cashing small CDs before their maturity dates, because issuing institutions typi-

cally assess heavy penalties—varying from forfeiture of accrued interest to loss of part of the original principal—in the event of premature redemption. The ultimate decision to exclude this item was also heavily influenced by the practical problem of obtaining the data necessary to permit a reasonable estimate of its value in current dollars, i.e., net of penalty assessments.

Components of M3 Not Included in M2

Large-denomination time deposits, such as CDs issued in denominations of at least \$100,000, are bona fide time liabilities, because they are not payable by the issuing institution before maturity.²³ Since they are not par value claims to immediately available dollars, they are excluded from the TMS. The same reasoning applies to the exclusion of term RPs and term Eurodollars from the TMS. The shares of "institution-only" MMMFs are excluded from the TMS for the same reasons as the shares of the "general purpose & broker/dealer" MMMFs included in M2.

Components of L Not Included in M3

U.S. Savings Bonds are instantly cashable at the U.S. Treasury (or at banks and thrifts acting in its behalf) at a fixed discount from their face value.²⁴ As U.S. Treasury liabilities, moreover, their redeemability is "insured" by the full faith and credit of the Federal government. U.S. Savings Bonds are therefore included in the TMS at their redemption value, because they represent secure and current claims against the Treasury for contractually fixed quantities of the general medium of exchange.²⁵ In fact, U.S. Savings Bonds may usefully be treated as specific claims against "Treasury Cash," since this provides a rationale for the conventional omission of the latter item from money-supply statistics.²⁶

In contrast to savings bonds, short-term Treasury securities are not payable before maturity and are therefore excluded from the TMS.

Memorandum Items

Three items which are not included in any Fed measure of the money supply (M1, M2, M3) or even of overall "liquidity" (L) find a place in the TMS. These are the demand and other deposits held by the U.S. government, foreign official institutions, and foreign commercial banks at U.S. commercial and Fed banks.

The somewhat mysterious exclusion of these items from money-supply measures is typically justified by one recent writer who claims that the deposits of these institutions "... serve an entirely different purpose than the holdings of the general public" or are "... viewed as being held for 'peculiar' reasons."²⁷ This overemphasis on the particular "motives" for holding money, as opposed to the importance of the quantity of money itself, is one of the modern legacies of the Keynesian revolution.²⁸

Moreover, there is nothing at all "peculiar" about the reasons for which such deposits are held. As one modern advocate of their inclusion in money-supply statistics points out:

The Treasury's deposits are not part of its reserve against money that it has issued, but are rather part of the general fund of the Treasury available for meeting general expenditures. Output is purchased and taxes are collected with the help of these deposits, and they would seem to be as much a part of the money stock with which the economy operates as are the deposits of state and local governments, which are included in adjusted demand deposits. Much the same may be said of Treasury deposits at Federal Reserve Banks. Also foreign-owned deposits at commercial banks are included, so why not foreign-owned deposits at the Federal Reserve?²⁹

Finally, pre-Keynesian monetary theorists routinely and properly counted "U.S. Government Deposits" in the "Total Deposits" component of the money supply.³⁰ This was and is the proper procedure, because it is variations of the total stock of money owned by *all* economic agents that are of vital importance in analyzing and attempting to forecast inflation and business-cycle phenomena.

Endnotes

¹Professor Rothbard presents the theoretical framework for this statistic in the following works: Murray N. Rothbard, *America's Great Depression* (Princeton, NJ: D. Van Nostrand, 1963), pp. 83-86; idem, "Austrian Definitions of the Supply of Money," in Louis M. Spadaro, ed., *New Directions in Austrian Economics* (Kansas City: Sheed Andrews & McMeel, 1978), pp. 143-56; and idem, *The Mystery of Banking* (New York: Richardson & Snyder, 1983), pp. 254-62.

²For a sample of recent contributions that have emphasized general acceptability in exchange as the defining characteristic of money, see: Lawrence H. White, "A Subjectivist Perspective on the Definition and Identification of Money," in Israel M. Kirzner, ed., *Subjectivism, Intelligibility and Economic Understanding: Essays in Honor of Ludwig M. Lachmann on His Eightieth Birthday* (London: The Macmillan Press, 1986), pp. 301-14; Dale K. Osborne, "What Is Money Today?" *Federal Reserve Bank of Dallas Economic Review* (January 1985), pp. 1-15; idem, "Ten Approaches to the Definition of Money," *Federal Reserve Bank of Dallas Economic Review* (March 1984), pp. 1-23; Leland Yeager, "What Are Banks?" *Atlantic Economic Journal* 6(December 1978): 1-14. Also see the classic article, Leland Yeager, "The Medium of Exchange" in R.W. Clower, ed., *Monetary Theory: Selected Readings* (Baltimore, MD: Penguin Books, 1970), pp. 37-60.

³For a similar view of credit cards see: Paul A. Meyer, *Monetary Economics and Financial Markets* (Homewood, IL: Richard D. Irwin, 1982), p. 34; and White, "Definition and Identification of Money," pp. 310-11.

⁴On this property of a pure commodity money, see, for example, Milton Friedman, "Commodity-Reserve Currency" in Milton Friedman, *Essays in Positive Economics* (Chicago: The University of Chicago Press, 1953), pp. 206-10.

⁵For a description of the unique process by which, in nominal terms, "the supply of money creates its own demand," see Yeager, "The Medium of Exchange," pp. 42-43; and idem, "What Are Banks?" pp. 6-7.

⁶As a former FDIC Chairman has recently written: "The pendulum has swung once again toward 100 percent protection of depositors and creditors. Despite the fact that Congress made it clear in the 1950 Act that FDIC was not created to insure all deposits in all banks, in the year since Congress has gradually increased the insured amount to \$100,000. In addition, the regulators have devised solutions that protect even the uninsured in the preponderance of cases." (Irvine H. Sprague, *Bailout: An Insider's Account of Bank Failures and Rescues* [New York: Basic Books, 1986], p. 32.) Moreover, the uninsured depositors who incurred losses in a handful of recent bank failures were mainly holders of deposits in the category of "large time deposits," which, for the reason stated below, are not included in the TMS definition of the money supply. The FDIC's recent attempt to enforce market discipline on the banking industry by leaving the uninsured holders of large time deposit in small (but not large) banks unprotected appears to have had little substantive effect. On this, see R. Alton Gilbert, "Recent Changes in Handling Bank Failures and Their Effects on the Banking Industry," *The Federal Reserve Bank of St. Louis Review* 67 (June/July 1985): 21-28.

⁷In his refusal to include "transactions balances," including demand deposits, in his statistical definition of the U.S. money supply, because they allegedly all cannot be spent simultaneously in any conceivable pattern of payments, Osborne ignores these institutional considerations. Thus, contrary to Osborne's contention, demand deposits in the U.S. today are indeed "means of simultaneous payment," precisely because as the lender of last resort, the Fed is empowered to create base money ad libitum and would exercise this power to prevent a wholesale collapse of the fractional-reserve, multibank system. By neglecting this momentous institutional factor, the strict application of Shackle's "simultaneity" criterion to the empirical identification of the money stock leaves Osborne with only the monetary base as the "generally acceptable means of exchange," i.e. money, in the U.S. See Osborne, "What Is Money Today?" pp. 3-5.

⁸As Barger observes, "... it is the *bank deposit* which is money—the check which transfers the deposit. Bank deposits are always acceptable: checks may not be, for sometimes they turn out to be made of rubber. If your creditor refuses your check, it's no doubt because he's not convinced he's getting title to a bank deposit." (Harold Barger *Money, Banking and Public Policy*, 2nd ed. [Chicago: Rand McNally 1968], pp. 16-17.) This is an obvious point, but White appears to overlook it in the significance he attaches to the limited "sphere of acceptance" of "ordinary bank checks [emphasis mine]." (White, "Definition and Identification of Money," p. 305.)

⁹Meyer is inconsistent in counting nonbank travelers' checks as part of the money supply merely because they are "means of payments." As Meyer recognizes in his discussion of credit cards, however, it is not enough that an item is able to serve as a means of payment in most transactions for it to be considered money; it must also serve, in his words, "to extinguish obligations between two parties," that is, serve as the *final* means of payment, to deserve the classification of money. See Meyer, *Monetary Economics*, pp. 33-34.

¹⁰For example, White argues that, because time deposits "... are not directly transferable, they do not serve as media of exchange, let alone a generally accepted media." (White, "Definition and Identification of Money," p. 310.) Yeager holds that the liabilities of nonbank financial intermediaries, such as deposits at S&Ls, are not money because they are not "routinely exchanged." (Yeager, "The Medium of Exchange," pp. 40-46, 53-56.)

¹¹As Rothbard pertinently remarks, "... the 30-day notice [of withdrawal of savings deposits] is a dead letter; it is practically never imposed, and, if it were, there would be a prompt and devastating run on the bank. Everyone acts as if his time deposits were redeemable or

demand, and the banks pay out their deposits in the same way they redeem demand deposits. The necessity for personal withdrawal is merely a technicality; it may take a little longer to go down to the bank and withdraw the cash than to pay by check, but the essence of the process is the same. In both cases, a deposit at the bank is the source of monetary payment." (Rothbard, *America's Great Depression*, p. 84.)

¹²Today, many institutions permit such transfer to be effected by means of telephone. Interestingly, one weighted aggregate of "transactions assets," the "MQ" measure, includes "savings deposits subject to telephone transfer" while excluding conventional savings deposits. See Dallas S. Batten and Daniel L. Thornton, "Are Weighted Monetary Aggregates Better Than Simple-Sum M1?" *The Federal Reserve Bank of St. Louis Review* 67 (June/July 1985): 29-40.

¹³In an early, though unfortunately neglected, contribution, Lin clearly recognized the economic equivalence of currency, demand deposits, and savings deposits, based on their "interchangeability" within the modern banking system. Thus, according to Lin,

The term 'means of payment' describes but one phase of the meaning of money. It indicates only in what form money is 'spent,' but not in what form it may be "kept." In the modern banking and monetary system money may be kept in one form and spent in another. This is possible and is always done today [1937] because all forms of money issued either by banks or by the state must be interchangeable to maintain parity. . . . Money in whatever form it is kept and spent must be of general acceptability and of free interchangeability. By these criteria, all other credit devices are automatically eliminated because they are not generally acceptable and cannot be freely interchanged into one another. Treasury currency, bank notes, time and demand deposits are . . . constantly interchanging into one another unit per unit without altering the total supply of money. (Lin Lin, "Are Time Deposits Money?" *American Economic Review* 27 [March 1937]: 85.)

For one of the earliest hints of recognition of the monetary function of time deposits, see Frank A. Fetter, *Economics*, vol. 2: *Modern Economic Problems*, 2nd ed. (New York: The Century Co., 1923), pp. 102-103.

¹⁴Melchior Palyi. *An Inflation Primer* (Chicago: Henry Regnery, 1961), pp. 137-38.

¹⁵For a discussion of overnight RPs, see Meyer, *Monetary Economics*, p. 28.

¹⁶On overnight Eurodollars, see *ibid*, pp. 28-29.

¹⁷The next three paragraphs, with some alterations, are drawn from Joseph T. Salerno, "What Investors and Depositors Should Know about Banks and the Financial Services Revolution," *Jerome Smith's Investment Perspectives* 2 (June 1984): 3-4. A more detailed analysis of the nature of MMMFs and of their relationship to the supply of and demand for money under the gold standard may be found in Joseph T. Salerno, "Gold Standards: True and False," *The Cato Journal* 3 (Spring 1983): 255-58.

¹⁸For a similar characterization of MMMFs, see Meyer, *Monetary Economics*, p. 29; and White, "Definition and Identification of Money," p. 310.

¹⁹"Typically, the funds establish a central clearing account at a bank. When checks, really drafts, written by individuals are presented to the bank, it notifies the mutual fund of the number of fund shares that must be liquidated to cover the check." (Monica Langley, "Holds on Checks Annoy Investors in Money Funds," *The Wall Street Journal* (November 11, 1986), p. 39.

²⁰As White points out, ". . . the item that the check-writing MMMF customer relinquishes (ownership of shares in a portfolio of assets) is not

what the payee accepts (ownership of an inside-money claim to bank reserves). Because the actual MMMF shares are not what the second party accepts (or intends to accept), MMMF shares cannot be considered a generally accepted medium of exchange; hence, they are not money." (White, "Definition and Identification of Money," p. 310.)

²¹See above, pp. 2-3, for the description of this process.

²²For details on institutional features of CDs, see Lester V. Chandler and Stephen M. Goldfeld, *The Economics of Money and Banking*, 7th ed. (New York: Harper & Row, 1977), pp. 148-49; also see Meyer, *Monetary Economics*, p. 88.

²³Chandler and Goldfeld, *Money and Banking*, pp. 148-49.

²⁴Meyer, *Monetary Economics*, p. 152.

²⁵In 1946, Fetter recognized savings bonds as "immediate purchasing power," and, as part of a comprehensive anti-inflation package, recommended the absorption of savings bonds "redeemable on demand" by exchanging them for long-term bonds and life annuities. (Frank A. Fetter, "Inflation's Basic Cause: Too Much Money," *Saturday Evening Post* [July 13, 1946], p. 124.) Palyi adopts a definition of the U.S. money supply that includes U.S. Savings Bonds at redemption value. However, from our medium-of-exchange perspective, Palyi goes too far afield by including in the money supply "highly liquid" assets such as Treasury securities of less than one year's maturity, commercial paper and bankers' acceptances. On the other hand, we sympathize with Palyi's apparent support for the inclusion of the cash surrender value of life insurance policies in money-supply figures. See Melchior Palyi, *The Twilight of Gold, 1914-1936: Myths and Realities* (Chicago: Henry Regnery, 1972), pp. 301-15. Albert G. Hart and Peter B. Kenen present a statistical definition of "liquid assets of the nonbank public," including U.S. Savings Bonds and the "net cash values of life insurance," which comes very close to the TMS. There are no significant omissions, and the only clearly objectionable item is short-term government securities. See Albert G. Hart and Peter B. Kenen, *Money, Debt and Economic Activity*, 3rd ed. (Englewood Cliffs, NJ: Prentice-Hall), pp. 3-6.

²⁶Actually, "Treasury cash" refers to the small amount of Treasury-held gold which has not been monetized by the issue of gold certificates to the Fed in exchange for Treasury deposits. Nonetheless, since this "nonmonetized" gold stock may be converted into a stock of dollars at any time, via the issue of gold certificates to the Fed, it may be considered a monetary reserve for the redemption of savings bonds. On Treasury cash, see John G. Ranlett, *Money and Banking: An Introduction to Analysis and Policy*, 3rd ed. (New York: John Wiley, 1977), pp. 60-67.

²⁷Meyer, *Monetary Economics*, pp. 26-27.

²⁸In analyzing the Keynesian motives for holding money, Hart and Kenen cogently argue that "We cannot divide the cash balance of a given holder into definite parts representing each of these motives. . . . If, for example, he also has accumulated cash for speculative purposes, he also has a margin of safety, so that his needs under the [precautionary] motive are swallowed up in those under the [speculative motive]. Besides, the different motives shade into one another. In analyzing them, it is less important to keep them distinct than to keep track of the common element that binds them all together—the adaptation of business dealings to uncertainty." (Hart and Kenen, *Money, Debt and Economic Activity*, pp. 223-34.)

²⁹Barger, *Money, Banking and Public Policy*, p. 53.

³⁰See, for example: Edwin Walter Kemmerer, *High Prices and Deflation* (Princeton, NJ: Princeton University Press, 1920), p. 27; Benjamin M. Anderson, *Economics and the Public Welfare: A Financial and Economic History of the United States, 1914-1946*, 2nd ed. (Indianapolis: Liberty Press, 1979), pp. 98, 183, 265; and Palyi, *The Twilight of Gold*, p. 36.