

# A Critique of Monetarist and Austrian Doctrines on the Utility and Value of Money

*Richard H. Timberlake, Jr.*

From the first, the Austrians entertained a wish . . . to apply their marginal utility theory to the case of money—which both the enemies of this theory and some of its foremost sponsors . . . declared to be impossible.

—Joseph A. Schumpeter<sup>1</sup>

**T**he current epoch of inflation over much of the world has emphasized yet again the acute relationship between the quantity of national moneys and domestic price levels. Inflation has also underscored the inadequacy of the Keynesian model in dealing with money–price level relationships. Keynes for the most part disposed of price level movements by assuming prices constant. His focus was on employment and interest rates (Keynes, 1936). Keynesianism swept the economics profession at a time when inflation was not a problem. Therefore, economists who embraced Keynesian doctrine as a *general* theory have had a less-than-satisfactory framework for treating price level changes.

Keynes's great intellectual victory in the middle half of the twentieth century has obscured at least two major doctrines that dealt specifically and directly with the quantity of money and prices. One was early monetarist theory, then known as the quantity theory of money. This doctrine was developed by Irving Fisher, E.W. Kemmerer, and others in the United States. In Britain, similar analysis resulted from the works of Edwin Cannan, A.C. Pigou, and economists of the Cambridge school, who were beneficiaries of the earlier classical works of John Stuart Mill, Henry Thornton, and David Ricardo. The other development was the Austrian theory of money initiated by Carl Menger, and continued and enlarged upon by Ludwig von Mises, Friedrich Hayek, Murray Rothbard, and other economists in the Austro-German tradition. These two

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I am grateful for helpful suggestions from Will Mason, Nancy Wulwick, and my wife, Hildegard.

doctrines shared important similarities and registered some differences, but both were fundamentally distinct from the Keynesian theory that has eclipsed them. Neglect of these doctrines has left economics less rich than it otherwise would be, and the doctrines themselves have had less impact on current theory and policy than they would have had if they had focused their attention on points of agreement and come to terms with their differences.

This article explores the fundamental operational concepts in monetarist and Austrian theories that bear on the utility and value of money, in order to determine where they are compatible and to assess the logic and significance of their differences.

Money evolved from commodities that were not money. Self-sufficient households, when they began to specialize, first bartered goods and services directly. They then learned to barter indirectly for items they did not want, but which they knew they could use subsequently in other exchanges for things they did want. These indirect bartering devices became media of exchange.

Primitive commodity moneys were varied and innovative (Jevons, 1898, 20–28). The more widely a given commodity money circulated, the more utility it had as a money and the more valuable it tended to become in terms of other goods. Carl Menger observed that, “Money commodities came to have utility as money beyond their utilities as commodities because they brought people closer to their ultimate goals of getting the goods and services they wanted” (1981, 262). This evolution is so inferentially logical that it hardly needs empirical substantiation. If it had not occurred, any historian could have invented it.

In the course of time, however, even the most refined commodity moneys gave way to token representations in order to economize their costs as media of exchange; and finally—if “finally” is now—the commodity itself has faded from the scene. Economic systems have been left with only paper and book-keeping representations that are initiated and accepted under the coercive authority of the state.

The concept of subjective utility in economic analysis was introduced by Carl Menger, and, contemporaneously, by the English economist William Stanley Jevons and the French economist Leon Walras in the great triple coincidence of economic thought (Schumpeter, 1954, 825–29, 1055, *passim*). Menger developed a table showing assumed cardinal values for the declining marginal utilities of ten economic goods as envisioned by some economic man. However, he did not defend the simplifying assumption of cardinality for the utility schedule, nor did he include either an income constraint or a utility schedule for money (Menger, 1981, 125–28).

The inability to discriminate conceptually between commodity utility and monetary utility is evident in all the works on money in this period. Jevons, for example, wrote correctly:

Since money has to be exchanged for valuable goods, it should itself possess value, and it must therefore have utility as the basis of value. Money . . . is only received to be passed on. The utility of the substance for other purposes must have been the prior condition for its employment as money. . . . It is doubtful whether the most powerful government could oblige its subjects to accept and circulate as money a worthless substance which they had no other motive for receiving (1898, 31).

Jevons's statement shows how difficult it was to penetrate the veil of the commodity in order to perceive the special utility of money. This analytic difficulty often led to the observation: "Money itself has no marginal utility, since it is not intended for consumption" (Wicksell, 1935, 20).

Ludwig von Mises came closer than any other economist of the time to a valid interpretation of the utility of money. He first wrote: "The subjective value [utility] of money is conditioned by its objective *exchange* value (emphasis added)." So far so good. However, he then restated the conventional error:

Money has no utility other than that arising from the possibility of obtaining other economic goods for it. . . . This peculiarity of the value of money can also be expressed by saying that, as far as the individual is concerned, money has no use-value [utility] at all, but only subjective exchange value (1980, 118, 130).

Von Mises's statement acknowledged the necessity for money to have utility—that it is an economic item to be brought into the panorama of market evaluation. But since its perceived utility was locked into its purchasing power for buying other things, the contradiction followed that money has no utility of its own.

Three factors probably contributed to this widely accepted view. First, at the time this issue came into economists' thinking, almost all money was commodity money, or pretended to be. Since some commodity first gave monetary life to any commodity money, the supposition followed that money without its redemptive commodity could not have value of its own and certainly could not have utility. Second, the awareness that the nominal quantity of money units could change without changing the real value of the total stock of money seemed to discourage the notion that the total stock is real capital, regardless of the fact that the size of the nominal stock is irrelevant to the value of the real stock. Third, since money "only" existed to be exchanged for something else, its utility had to be something akin to an imaginary number. It was derived from the utilities of the things it could buy. To their everlasting credit, the Austrians insisted on bringing money into the general theory of value by emphasizing a demand function for money, but they lacked a utility theory of money *qua* money with which to complete the analysis.

Schumpeter correctly interpreted the Austrian view to mean that the exchange value of money—what it will buy—must be known before the individual

can assign any utility to a unit of money: "It is therefore impossible to do in the case of money what can be done in every other case, namely, to deduce its exchange value from . . . schedules of marginal utility: to attempt to do so seems to spell circular reasoning" (1954, 1090). Indeed, this "problem" came to be known as the "Austrian circle" (Rothbard, 1976, 167).

Von Mises recognized and accepted the sequence of thought that led into the Austrian circle, and he tried to break out of it with his "regression theorem." He argued that money's value and utility today could be traced back incrementally day-by-day, year-by-year, decade-by-decade "in temporal regression" to the time when the money was a commodity money; then, as summarized by Murray Rothbard, "to the last day of barter, at which point the temporal element in the demand for the money commodity disappears, and the causal forces in the current demand and purchasing power of money are fully and completely explained."<sup>2</sup> Rothbard claims that this theorem "fully explains the *current* demand for money and integrates the theory of money with the theory of marginal utility" (Rothbard, 1976, 167–69, emphasis added; von Mises, 1980, 131–36).

Don Patinkin rejected the circularity argument by noting that it does not distinguish between "demand" as a schedule of alternative quantities, and "demand" as an amount demanded:

It is true that the amount demanded of money [by an individual or by all individuals]—as well as of any other good—depends upon prices. Nevertheless, it is also true that the equilibrium prices depend upon the demand functions. The "circularity charge" is simply a denial of this elementary distinction (1965, 116).<sup>3</sup>

Patinkin's observation does not quite hit the mark. Von Mises did not confuse "demand" and "quantity demanded." Nonetheless, this paradox is an illusion and the regression theorem is an awkward and useless contrivance which does nothing more than reargue the origin of commodity money. All these "problems" result from not recognizing money's utility *as money*, and from a confusion of utility and value. Money does not have utility "only" to buy other things. It has the utility of being the exclusive vehicle for allocating expenditures of income over time. This role should be analyzed as one factor contributing to the terms on which money is exchanged for goods and services (that is, its value). If fiat paper money were dumped into a primitive barter economy and forced into acceptance by the impress of legal tender, its price would be established in terms of other things because of the monetary function it fulfilled and because its quantity was limited. Note that the coercive authority that would force acceptance of the money by means of the legal tender power cannot fix the terms on which the money is exchanged. The price level and the corresponding "price" of money—expressed by the inversion of the price

level—are determined by the number of money units imposed on the economy, the efficacy of the payments system as a means of metering payments over time (that is, on the monetary utility of money), the stability of the economic environment, the productivity of enterprise, *et hoc genus omne*.

A memorable article that dealt definitively with this issue was written by W.H. Hutt in 1954. Hutt first reviewed the state of utility theory with respect to money and found it wanting, even though he, too, thought von Mises had come the closest to a correct interpretation. Money has utility, Hutt explained, because it is a “wealth-unit *ready* to be activated.” It also has the property of being the most easily adjusted asset in case an excess quantity accumulates. It yields service, and therefore an implicit rate of return to its owners. Adam Smith, Hutt observed, had written that money was unproductive because it was like a highway (Hutt, 1954, 217). “But Mises,” Hutt declared, “would insist that a highway *is* productive” (von Mises, 1980, 170). He cited a passage from von Mises that is notable both for its insight and also because it contradicts von Mises’s previous assertion that “money has no use-value at all (Hutt, 1954, 218).” Wrote von Mises:

It must be recognized that from the economic point of view there is no such thing as money being idle. All money, whether in reserves or literally in circulation, . . . is devoted in exactly the same way to the performance of a monetary function. . . . All money . . . lies in some individual’s stock ready for eventual use. . . . What is called storing money is a way of using wealth (von Mises, 1980, 170).

Hutt contributed important details to the utility argument. Money does *not* do its work by circulating, he stated.

If the work of money is circulation, then money is always “idle” because transactions are quasi-instantaneous. . . . The transfer [of money] itself occupies a mere moment whilst the services which flow from the possession of money are continuous over time. The essence of all these services is *availability*.

Real money units are thus like a real piano, which has utility because it is ready to be played even when it is silent. Money assets, Hutt emphasized, are “subject to the same laws of value as other scarce things [and] are equally productive in all intelligible senses (1954, 218–20).

Irving Fisher was as ambivalent as von Mises with respect to the utility of money. In *The Purchasing Power of Money*, published just the year before von Mises’s *Theory of Money and Credit*, Fisher wrote that marginal utilities, unlike prices, are “not only impossible to measure, but are unequal and vary unequally among individuals.” He recognized that money has marginal utility,

which would vary directly with the purchasing power of money “if all prices and all money incomes change in the same ratio” (1911, 220).

Fisher, similar to von Mises, fell into the error of not allowing money to have its own utility because he (of all people) neglected money’s real value when analyzing its utility. “The quantity theory of money . . . rests,” he wrote, “. . . upon the fundamental peculiarity which money alone of all goods possesses—the fact that it has no power to satisfy human wants except a power to purchase things which do have such power” (1911, 32).

What Fisher, von Mises, and others did not recognize explicitly was that this “exception” to money’s “uselessness” was all important. It can be brought into focus most meaningfully by changing the statement, “Money can only be used to buy other things,” to, “Money is the exclusive means for buying other things.” These statements are similar; but one describes money’s function with the bemeaning adverb “only,” while the other uses the elite adjective “exclusive.”

In his *Rate of Interest* written in 1907, Fisher offered a view of money’s utility very similar to von Mises’s more profound expression:

The most salable of all properties is, of course, money and as Carl Menger pointed out, it is precisely this salability which makes it money. The convenience of surely being able, without any previous preparation, to dispose of it for any exchange . . . is itself a sufficient return upon the capital which a man seems to keep idle in money form. This liquidity of our cash balance takes the place of any rate of interest in the ordinary sense of the word (1907, 212; also cited in Patinkin, 1965, 580; emphasis added).

Fisher’s notion of an implicit return on money held is identical to Hutt’s “yield.” Patinkin noted the ambiguity in the two passages from Fisher and the fact that Fisher wrote the meaningful interpretation of monetary utility in 1907, and the conventionally incorrect view four years later in 1911.

All this emphasis on the utility of money in the late nineteenth and early twentieth centuries should have culminated in an epic work on the subject. However, if the “culmination” of monetary economics was Keynes’s *General Theory*, the marginal utility of money is conspicuous by its absence. It appeared in only one paragraph in which Keynes treated the general properties of money. Besides the fact that the supply of money is completely inelastic under a fiat paper money system, Keynes wrote, the demand for money has an elasticity of substitution of zero,

which means that as the exchange value of money rises [the price level falls] there is no tendency to substitute some other factor for it. . . . This [inelasticity] follows from the peculiarity of money that its utility is solely derived from its exchange-value, so that the two rise and fall *pari passu*, with the result that as the exchange-value of money rises there is no motive or tendency . . . to substitute some other factor for it (1936, 231).

This treatment has money held in a portfolio of interest-earning assets, and *not* as an exchange medium appreciating to the point where it would be too valuable to be held any longer and would be “sold.”

The fallacy in Keynes’s argument lies in the clause, “its utility is solely *derived* from its purchasing power” (emphasis added). The utility *schedule* of money is indeed proportional to money’s purchasing power. However, money does not “derive” its utility from its purchasing power. Its utility is derived from its effectiveness as a rationing device for household and business income over time—as Keynes himself recognized at one point. “One reason for holding cash,” he observed without any particular emphasis, “is to bridge the interval between the receipt of income and its disbursement” (1936, 195).

Keynes did not redeem himself with another passage in which he explicitly recognized the utility of money held, as did Fisher and von Mises. While he saw that the marginal utility schedule of money was geared to the exchange-value of the money unit, he did not notice that this linkage would permit money to be entered into a marginal utility calculus for establishing spending equilibrium between money and other economic wealth. (See appendix.) In Keynes’s world, a falling price level that increased the exchange-value of the money unit generated no behavioral reaction that would stabilize general disequilibrium conditions, but only further acquisitions of the wealth-item that was appreciating. This oversight is consistent with his inability to derive a real balance effect that would get the economy into “full employment” equilibrium.

A resolution of the value-utility argument over money requires some reassessment of money. Much of the confusion and error in characterizing money has resulted from concentrating on the nominal quantity rather than on the real quantity. In the absence of expectations, the real quantity is largely independent of the nominal quantity. A nominal unit of money loses utility during an inflation in proportion to the rise in prices. But a real unit of money—the nominal unit adjusted for changes in the value of the money unit—loses no utility until it no longer performs in its usual way as a disburser of income between payment periods. As in all other determinations of real value, money’s utility is a feature that contributes to its demand, and the real income of money users is a second conventional determinant. However, the quantity of nominal money units is as irrelevant to the real value of the money stock as is the calibration of apples in bushels or pounds to the real value of apples.

Utility and value are not on the same plane. Utility precedes value and is parallel to scarcity. To label the utility of money “subjective value” as von Mises did is to foster a contradiction in terms. Money has subjective *utility* and objective *value*, regardless of whether a price index (inverted) measures its value accurately or not.

This correction does not deny the principle that consumption guides production. Nonetheless, the scarcity of resources used in getting the supply of anything to market is essential for setting the terms on which the demand is satisfied.

Both Fisher and von Mises emphasized the impossibility of measuring subjective utilities. Both saw utility as a force operating in markets, and also as a force whose magnitude marginally declines. To Fisher, its unmeasurability was a reason to use an objective measure—a price index—as a guide to “corrections in a monetary standard” (Fisher, 1911, 22). He did not mean to throw out the gold standard. He simply recommended periodic modifications to the fixed official price of gold because the production of gold was so great at the time that he feared a gold inflation (!) (Fisher, 1911, 248–50).

His prescription in practice called for only an occasional change in the mint price of gold to adjust for severe changes in its real price that were associated with a chronically rising or falling level of money prices. “Our ideal, he wrote “is not primarily *constancy* of the dollar but rather *dependability*. Fluctuations which can be foreseen and allowed for are not evils. . . . [No one] should expect the monetary unit to insure him against every wind that blows” (1911, 223; emphasis added).

Fisher’s mathematical and statistical training undoubtedly led to his confidence in the use of a price index as a vehicle to measure the value of the money unit. Without such a construction, the common general confusion between relative prices and the price level could never be resolved, so changes in money prices were not likely to be distinguished from changes in real prices. “Individual prices,” he wrote, “cannot be fully determined by supply and demand, money cost of production, etc., without surreptitiously introducing the price level itself” (1911, 175). He recognized that the price level when inverted is the only conceptual means for expressing the price of money, and that a price index is the only practical means for estimating the price level.

Von Mises argued that since money prices (“objective exchange values”) were the result of subjective utilities, their general level was not explicitly measurable. Money prices he saw as indispensable means for valuing economic goods and services, but, paradoxically, the value of money itself was unquantifiable (von Mises, 1980, 62).

Von Mises here derived what can be labeled the Austrian principle of money: “Every variation in the quantity of money introduces a dynamic factor into the static economic system” (von Mises, 1980, 168). When the stock of money—even if money is gold—changes, the circumstances of the change (where and how the money comes into the system, and who first gets it) inevitably result in relative price changes. In addition, the distribution of wealth and income also change (von Mises, 1978, 81). Thus far, von Mises’s analysis and Fisher’s had much in common: Money in practice is not neutral in the short run.

Statistically speaking, von Mises noted, these changes in relative prices and real incomes change the “scaling factors” that weight the prices computed in any index. Statistical doctrine cannot provide an accurate means for weight changes. Therefore, “the idea that change in the purchasing power of money may be measured is scientifically untenable” (von Mises, 1978, 99). On the



other hand, “any index method is good enough to make a rough statement about the extremely severe depreciation of the value of a monetary unit. [but it] is not necessarily either scientifically correct or applicable in practice” (von Mises, 1978, 89; also 1980, 216–22). Since monetary changes alter relative prices, von Mises argued, a policy to stabilize the price level would have to fix all relative prices and would result in severe distortions to the economic allocation of resources.

The difference between the two schools over this issue is both conceptual and practical. Both recognized that the purchasing power of money is a reflection of money prices inverted. Von Mises even stated that the “fictitious” concept of a “price level” enables the observer “to distinguish and determine whether changes in exchange relationship between money and other commodities arise on the money side or the commodity side. . . . This distinction is urgently needed” (1978, 85). Fisher developed much the same argument (Fisher, 1911, 174–79). However, Fisher also believed that the price index, with all of its imperfections, was statistically valid and operationally useful. Since money prices are measurable data, a price index is “an ascertainable magnitude with a meaning common to all men” (Fisher, 1911, 220).

The conceptual validity of a price index seems logical. Imagine an economy in which the purchase and sale of one commodity dominates all exchanges. The market price of that commodity in terms of the money unit when inverted would also be the market price of the money unit in terms of that commodity. If the number of commodities exchanged for money were to increase, the conceptual means of evaluating the money unit would not change. It would still be the value of the money unit in terms of some aggregate of goods. Indeed, the value of the money unit cannot be measured in any other way. The validity of the concept cannot be denied because of the imperfection of the method used to measure it.

The propriety of using index numbers to measure prices, and hence the value of the money unit, is another story. It depends ultimately on the statistical reliability of the method for deriving the index, and is essentially an empirical issue. For example, given two periods, one of reasonably stable prices and one of pronounced inflation, do relative prices change significantly more in the inflationary period than they do in the stable period? If so, von Mises’s rejection of indexes would have some practical weight.

The Austrian view of the value of money, as set out by von Mises, argued correctly that money must be analyzed in a general theory of value. The value of money is determined in all markets where money is exchanged, he wrote. “To explain its determination is the task of the theory of the value of money” (von Mises, 1980, 141). Very properly, he applied an implicit real balance effect to show how an adjustment of prices resulted from a change in the quantity of money:

An increase in a community's stock of money [alters] the ratio between the demand for money and the stock of it . . . ; [people] have a relative superfluity of money and a relative shortage of other economic goods. The immediate consequence of both circumstances is that the marginal utility to them of the monetary unit diminishes. This necessarily influences their behavior in the market. They are in a stronger position as buyers. . . . They are able to offer more money for the commodities that they wish to acquire. It will be the obvious result of the [circumstances] that the prices of the goods concerned will rise. . . . Thus the increase of prices continues, having a diminishing effect until all commodities . . . are reached by it (von Mises, 1980, 160–61).

No quantity theorist or monetarist could describe the adjustment to an excess supply of money more effectively. Following this passage, however, von Mises made a substantive criticism of the “mechanical version” of the quantity theory of money: “A thorough comprehension of the means by which money changes prices makes [the quantity theorists’] point of view untenable” (1980, 161). Consequently, “no fixed relationship can be established between the changes in the quantity of money and those of the [money] unit’s purchasing power” (von Mises, 1978, 91).

To von Mises, Fisher’s manipulations with “neutral” money seemed impossibly mechanistic. The quantity theory assumes an exogenous quantity of money and employs a velocity of circulation and a total output of goods and services—variables outside the decision-making volition of human beings. In his view, therefore, it could not reflect subjective valuations of individuals, (von Mises, 1980, 153–54).

This charge is understandable and has long been a criticism of the quantity theory. Another criticism of some moment is that the quantity theory sublimates the real balance effect implicit in its workings, and hides the utility of money. Von Mises’s use of the real balance effect, and his simultaneous criticism of the quantity theory, imply that he, too, saw the quantity theory in this light. He recognized Fisher as one who “takes his stand upon the subjective theory of value,” but who is “unable to show the way subjective valuations are affected by variations in the ratio between the stock of money and the demand for money” (von Mises, 1980, 158).<sup>4</sup>

If Fisher oversold his price index thesis because of his faith in statistical measurement, von Mises’s arguments were often whimsical. He had the habit of acknowledging that economic concepts have magnitudes, and he would use these devices analytically; but then he would argue that assigning any precise values to these variables by statistical measurement was improper.

All index-number systems are based upon the idea of measuring the utility of a certain quantity of money.<sup>5</sup> . . . Their purpose is the determination of the subjective significance of the quantity of money in question. For this, recourse must be had to the quite nebulous and illegitimate fiction of an eternal human with invariable valuations (von Mises, 1980, 221).

Recognition of the quantity theory's defects as an engine of analysis was expressed by A.C. Pigou when he wrote that he favored the form of the cash balance (or "Cambridge") equation to the quantity theory because the cash balance approach

focuses attention on the proportion of their resources that people choose to keep in the form of [money] instead of focusing it on "velocity of circulation." . . . [The cash balance method] brings us at once into relation with volition—an ultimate cause of demand—instead of something that seems at first sight accidental and arbitrary (1951, 174).

D.H. Robertson made a similar distinction. The cash balance equation, he wrote, "is the more useful for enabling us to understand the underlying forces determining the value of money; while the [quantity theory] is the more useful for equipping us to watch with understanding the actual processes by which in real life the prices of goods and services change" (1948, 38–39). The cash balance equation thus lent itself to the construction of a demand for money that answered von Mises's criticisms of the quantity theory and, as well, provided a vehicle for understanding the true utility of money.

In most important respects, Austrian and monetarist monetary doctrines employ similar constructions and similar methods to analyze money's impact on the economy. Both imply an awareness of the utility of money as money. Both develop demands for money that are methodologically consistent with demand constructions for all other goods and services. Both emphasize the necessity and importance of markets for specifying prices as guides to economic decision making. Both see the value of money in its classical garb as an inversion of money prices. Both make use of the real balance effect. Both deny the short-run neutrality of money; and both deplore the misbehavior of "managed" monetary systems. Wherein then lie their differences?

Most of the disagreements are either methodological misunderstandings or questions of empirical fact. One lingering difference between the two, in contrast to their many common principles, is in the validity each assigns to the statistical measurement of prices. Austrians incongruously deny validity of indexes yet continuously make use of the concept. In this day and age of statistical refinement—never mind the many misuses of statistics—this intellectual position is untenable. Just because a device is not perfect does not mean that it is useless. It should be used, however, with caution and with an understanding of its frailties. The Austrian criticism is a well-considered caveat if it limits itself to this point.

Fisher seems to have leaned too far in the other direction by assigning too deterministic a role to index numbers and by emphasizing too literally the influence of money on prices. Schumpeter hazards the guess that Fisher's vested

interest in a “piece of social engineering”—the compensated-dollar plan—“pushed aside all other considerations” (Schumpeter, 1954, 1103).

Another methodological issue is the Austrian contentiousness for insisting that utility can only be measured ordinally and not cardinally. Utility is a force that has magnitude and direction, as the Austrians know better than anyone else. Therefore, it can be treated *as if* its values are specific (as, indeed, Menger did). In fact, the only necessary condition for determining market equilibrium between money and goods is that all marginal utility schedules decline (Patinkin, 1965, 95). When people then give up money to get other wealth, they run themselves up the utility schedules of money and down the utility schedules of other wealth, until they reach a new equilibrium. (See appendix.)

Austrian doctrine also objects to the assumption of fixed utility schedules for other wealth when only a change in money disturbs some previous equilibrium. This issue is also methodological rather than substantive. Since the nonneutrality of money and the heterogeneity of individuals’ utility schedules do not violate in any way the conclusion that changes in the quantity of money significantly affect prices, the assumption of monetary neutrality and the specification of cardinal utilities are simplifications that clarify the analysis by showing it unadorned. The argument, in short, is not over a question of fact but over the efficacy of method.

Austrian doctrine on price indexes and utilities has some substantive basis, and is very useful in limiting enthusiasm for authoritarian tampering with the monetary system. However, the concept of circularity in the utility, value, and demand for money is an illusion, and the regression theorem therefore is a pointless contrivance. If a paradox is imaginary, the “solution” to it is worthless.

All professional specialists tend to culture their intellectual rent factors or vested interests, and economists are not exceptions. When this practice is carried on so intensively over minor details that it produces what appear to be ideological differences, it becomes counterproductive to the momentum of valid first principles. All of which is to say that, as allies, monetarists and Austrians both would better serve their common interests.

## Appendix: The Equilibrium Value for the Marginal Utility of Money

Assume declining marginal utility schedules for money,  $M$ , and all other goods and services,  $R$ . Money exchanges for these goods and services at market prices until a typical individual maximizes his utilities for money and goods relative to their prices. That is, in equilibrium (ephemeral as it might be) the marginal utility of money relative to the price of money equals the marginal utility of goods relative to the price of goods.

$$\frac{MU_M}{p_M} = \frac{MU_R}{P_R} \quad (1)$$

The price of goods,  $P_R$ , is some construction of the general price level, and the price of money,  $p_M$ , is  $\frac{1}{P_R}$ . Therefore, equation 1 can be reduced to three terms:

$$\left( \frac{1}{P_R} \right) MU_M = \frac{MU_R}{P_R} \quad (2)$$

and

$$MU_M = \frac{MU_R}{P_R^2} \quad (3)$$

This last equation states that the marginal utility of the  $n$ th money unit in equilibrium is equal to the marginal utility of goods divided by the price level *squared*.

To visualize this explanation, let the original equilibrium in equation 1 occur when  $P_R$  and  $p_M$  are both 1. In this case,  $MU_M$  would also equal  $MU_R$ . Now let a monetary inflation, say, triple the price level by a threefold increase in the stock of money. The new equilibrium, assuming no expectations of further price change, occurs when

$$\frac{MU_M}{\left(\frac{1}{3}\right)} = \frac{MU_R}{3}, \text{ and} \quad (4)$$

the new equilibrium marginal utility of money is

$$MU_M = \frac{MU_R}{9} \quad (5)$$

When the money stock and the price level triple, the marginal utility of the *n*th dollar in equilibrium is one-ninth what it was originally. This value is explained by noting that the whole schedule of monetary utility for nominal money units must be scaled down to one-third of its former value, and in addition everyone must hold three times the former number of money units. Equilibrium, therefore, occurs on a utility schedule that has been reduced by a factor of 3 at a point three times as far out on the money axis.

## Notes

1. Schumpeter, 1954, 1089.
2. Cf. Jevons's statement earlier in this article.
3. While Patinkin rejects the Austrian circle and, therefore, von Mises's regression theorem, he nonetheless gives full credit to von Mises's contribution.
4. By the "demand for money," von Mises indicated that he meant "volume of transactions [divided by] velocity of circulation." Using the algebra of the equation of exchange,

$$\frac{T}{V} = \frac{M}{P}, \text{ and } \frac{M}{M}$$

in contemporary parlance is the real value of the total stock of money (von Mises, 1980, 158).

5. Not "utility," but value. And not "subjective significance" in the next sentence but objective value as registered by markets.

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