

# STABLE MONEY AND FREE-MARKET CURRENCIES

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The assigned title of this paper suggests that my task is to survey proposals that the title brings to mind rather than devote the paper to a single one of them. Even if none of the proposed reforms ever is adopted, examining how they might work may promote progress in monetary theory. Some properties of actual monetary systems are illuminated by contrasting them with imaginary systems.

## Our Preposterous Dollar

On reflection, our existing monetary system must seem preposterous. It is not difficult to understand how individually plausible steps over years and centuries have brought us to where we now are, but the cumulative result remains preposterous nevertheless. Our unit of account—our pervasively used measure of value, analogous to units of weight and length—is whatever value supply and demand fleetingly accord to the dollar of fiat money.

If balance between demand for and supply of this fiat medium of exchange is not maintained by clever manipulation of its nominal quantity at a stable equilibrium value of the money unit, then any correction of this supply-and-demand imbalance must occur through growth or shrinkage of the unit itself. Money's purchasing power—the general price level—must change. This change does not occur swiftly and smoothly. Money's value must change, when it does, through a long-drawn-out, roundabout process involving millions of separately determined, though interdependent, prices and wage rates. Meanwhile, until the monetary disequilibrium has been finally cor-

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rected in this circuitous way, we suffer the pains of an excess demand for or excess supply of money.

Fundamentally, behind the veil of money, people specialize in producing particular goods (and services) to exchange them for the specialized outputs of other people. Since supply of goods constitutes demand for goods in that sense, any problem of apparent deficiency of aggregate demand traces to impediments to exchange, which discourage producing goods to be exchanged. Probably the most serious impediment—to judge from all the evidence supporting the “monetarist” theory of business fluctuations—hinges on the fact that goods exchange for each other not directly but through the intermediary of money (or of claims to be settled in money). Trouble occurs when a discrepancy develops between actual and desired holdings of money at the prevailing price level. Such a discrepancy can develop when the actual growth of the money supply falls short of the long-run trend or, more simply, when money actually shrinks. People and organizations try to conserve or replenish their deficient money holdings by exhibiting reduced eagerness to buy and increased eagerness to sell goods and services and securities. Since transactions are voluntary, the shorter of the demand side and the supply side sets the actual volume of transactions on each particular market. Production cutbacks in response to reduced sales in some sectors of the economy spell reduced real buying power for the outputs of other sectors. Elements of price and wage stickiness, though utterly rational from the individual points of view of the decision-makers involved, do keep downward price and wage adjustments from absorbing the full impact of the reduced willingness to spend associated with efforts to build or maintain cash balances. The rot snowballs, especially if people react to deteriorating business and growing uncertainty by trying to increase their money holdings relative to income and expenditure. In depression or recession, what would be an excess demand for money at full employment is being suppressed by people’s being too poor to “afford” more than their actual money holdings. Relief of this (suppressed) excess demand for money somehow or other—perhaps by an increase in the nominal supply, perhaps through price and wage reductions that create the additional real money balances demanded at full employment—would bring recovery. An excess supply of money, at the other extreme, brings price inflation.

This theory of monetary disequilibrium can be extended to deal with stagflation and with the adverse side effects of anti-inflationary monetary policies by working out a close analogy between the stickiness of a price and wage *level* and the momentum of an entrenched upward *trend*. General interdependence or input-output-type inter-

dependence helps account for this momentum. Not all cost pass-throughs can occur instantly. (But this does not mean that inflation is a cost-push phenomenon.) The momentum of price and cost increases makes it possible for excessive growth of the money supply in the past to produce a situation in which, once nominal money growth has been stopped or slowed (or even only its acceleration reduced), the money supply in purchasing-power terms is currently insufficient for a full-employment volume of economic activity.

The point relevant to what concerns us here is that imbalance between the actual quantity of money and the total of desired cash balances cannot readily be forestalled or corrected through adjustment of the price of money on the market for money because money, in contrast with all other things, does not have a single price and single market of its own. Monetary imbalance has to be corrected through the roundabout and sluggish process of adjusting the prices of a great many individual goods and services (and securities). Because prices do not immediately absorb the full impact of the supply and demand imbalances for individual goods and services that are the counterpart of an overall monetary imbalance, quantities traded and produced are affected also. Thus, the deflationary process associated with an excess demand for money, in particular, can be painful.

Yet even if, and perhaps especially if—contrary to reality—the purchasing power of the money unit were sufficiently flexible to forestall imbalance between money's supply and demand and if potential imbalances kept calling this flexibility into play, the resulting instability of the unit of account would impair coordination. Capricious redistributions between debtors and creditors and the further-reaching effects of changed real debt burdens are not the whole story by far. More than the meeting of minds between prospective debtors and creditors is impaired; for the unit of account is used pervasively in expressing bids and offers and the terms of transactions, in assessing costs and benefits, and in business and personal planning. Not merely coordination but, more broadly, economic calculation is at stake.

Consider how difficult constructing a house would be (ordering and fitting together the components, appliances, and all the rest) if the unit of length, the meter or the foot, kept changing and accordingly were perceived by different persons to have different sizes. Consider how preposterous it would be for the length of the meter to fluctuate according to supply and demand in the market for metersticks. Yet our dollar suffers from a comparable absurdity—or a worse one, in view of the associated macroeconomic disorders.

The remedy is to be sought in somehow arranging for the quantity

of money always to match the demand for it at a stable value of the unit. Alternatively, the value of the unit must be stabilized and the quantity of the medium of exchange made appropriately responsive to the demand for it through decoupling the unit of account and the medium of exchange from each other.

## Reformed Government Money

I shall say only a little about remedies within the realm of government money; that is the province of Allan Meltzer, Carl Christ, Robert Weintraub, and their discussants. I shall say nothing about a governmental gold standard, partly because Alan Reynolds, Joseph Salerno, Alexandre Kafka, and their discussants are attending to that topic and partly because such a standard is very likely to be a mere pseudo gold standard rather than a real one (to make Milton Friedman's important distinction).<sup>1</sup> Anyone serious about the gold standard should favor leaving it to private enterprise, protected against governmental ruination. (I'll say a little about this later on.)

I used to favor the familiar monetarist quantity rule, but lately doubts have been plaguing me. Recent and ongoing financial innovations (money-market funds, sweep accounts, overnight RPs, overnight Eurodollars, highly marketable credit instruments, cash management devices, and all the rest) are rendering the very concept of money hopelessly fuzzy and the velocity of whatever constitutes money hopelessly unstable and unpredictable. So, anyway, goes a view that I cannot confidently dismiss.

If this view should be or should become correct, the monetarist rule would have become inapplicable precisely because of failure to adopt it unequivocally, credibly, and in due time. The troublesome financial innovations represent attempts to wriggle around interest ceilings and reserve requirements made particularly costly by inflation-boosted nominal interest rates, the inflation tracing in turn to disregard of monetarist advice. Rejection of a prescribed treatment may allow a disease to develop to a stage at which the original prescription would no longer work and at which some quite different treatment becomes necessary. This does not mean that the doctors who made the original prescription—here, the monetarists—have anything to apologize for.

Anyway, the old proposal for targeting monetary policy on a broad price index deserves a fresh look. Underlying this proposal is the

<sup>1</sup>Milton Friedman, "Real and Pseudo Gold Standards," *Journal of Law and Economics* 4 (October 1961), reprinted in his *Dollars and Deficits* (Englewood Cliffs, N.J.: Prentice-Hall, 1968), pp. 247–265.

idea that incipient monetary disequilibrium would tend to show itself in prices. Movements away from a previously stable price level are symptoms of excess demand for or excess supply of money, either of which, but especially the former, impinges on real activity as well as on prices. Monetary policy aimed at price-level stability would coincide with resisting unemployment due to general deficiency of spending while not creating too much new money in a doomed attempt to cure unemployment of some other kind. This idea is not crucially dependent on any particular definition or measure of money, since imbalances between its supply and demand, and not those quantities separately, are what are to be detected and corrected.

The standard objection stresses time lags between the need for and the taking of corrective policy actions and then lags between the actions and their results. A price index, like individual prices, responds sluggishly. Because of these lags, results might run in the wrong direction by the time they appeared. This difficulty would bedevil a sharply shifting policy, however, more than a steady and consistent one. Ways might be found, furthermore, to mitigate the problem of lags, perhaps through attention to particularly sensitive commodity prices and to future prices.

### Indexing and Basket Currencies

Even so, proposals for nongovernmental remedies intrigue me more. First I shall consider some proposed remedies that, while not free of government involvement, do or could have private aspects.

Proposals for a stable unit of account come to the fore in times of severe inflation.<sup>2</sup> Under widespread indexing, the dollar of base-year

<sup>2</sup>And not only then; some were published during the 19th century when price levels were trending downward. After mentioning earlier proposals by Joseph Lowe and G. Poulett Scrope, W. Stanley Jevons recommended "a tabular or average standard of value," to be based on an index number. *Money and the Mechanism of Exchange* (New York: Appleton, 1875), chapter XXV. Alfred Marshall recommended expressing debts and the interest on them, pensions, taxes, salaries, and wages in units of the purchasing power possessed by one pound sterling at, say, the beginning of 1887; eventually "the currency would . . . be restricted to the functions for which it is well fitted, of measuring and settling transactions that are completed shortly after they are begun." "Remedies for Fluctuations of General Prices," *Contemporary Review* (1887), reprinted in *Memoirs of Alfred Marshall* (1925), pp. 197–199 and extracted in Milton Friedman, *Monetary Correction* (London: Institute of Economic Affairs, 1974), pp. 36–38. Friedman's booklet, pp. 39–45, also contains Brian Griffiths, "English Classical Political Economy and the Debate on Indexation." Walter Bagehot criticized Jevons' proposal in "A New Standard of Value," *The Economist*, November 20, 1875, reprinted in *Economic Journal*, II (September 1892): 472–477. Aneurin Williams, anticipating Irving Fisher's proposal of three decades later for a "compensated dollar" (*Stabilizing the Dollar*, New York: Macmillan, 1920), proposed adjusting the gold content of the pound sterling in line with changes in the purchasing power of gold so as to keep the purchasing power

purchasing power—we might call it the “constant”<sup>3</sup>—would be the unit of account, while the ordinary dollar in which demand deposits and currency are denominated remained the medium of exchange.<sup>4</sup>

Separate proposals by Jacques Riboud and by nine prominent European economists may be understood as variants of the proposal for a unit of base-year purchasing power.<sup>5</sup> The “Eurostable” or “Europa,” as the new unit would be called under the respective proposals, would initially be defined as a composite of specified amounts of each of several national currencies. For convenience in

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of sterling constant. “A ‘Fixed Value of Bullion’ Standard—A Proposal for Preventing General Fluctuations of Trade,” *Economic Journal*, II (June 1892): 280–289. Robert Giffen criticized Williams’ proposal in “Fancy Monetary Standards,” *Economic Journal*, II (September 1892): 463–471.

In recent years, though perhaps not still today, the most prominent advocate of indexing has been Milton Friedman. (See his *Monetary Correction*, as well as his “Using Escalators to Help Fight Inflation,” *Fortune* 90 (July 1974): 94–97, 174, 176.) Friedman’s chief argument appears to be that indexing would help break the sheer momentum of wage increases and would thereby lessen the unemployment associated with a program of slowing down monetary expansion and eventually returning to price-level stability. Trying to appraise that particular argument would be rather aside from the main topics of this paper.

<sup>3</sup>The name comes from Ralph Borsodi’s proposal for a unit of steady purchasing power whose nominal dollar value would rise in step with the Consumer Price Index. Actually, Borsodi envisaged not just a mere unit of account but also a medium of exchange denominated in constants. The question arises, however, of whether such a system of indexing does not presuppose the continued existence of ordinary dollar prices and dollars in circulation. Such questions are considered later in this paper.

Anyway, a small-scale trial of Borsodi’s proposal was begun in June 1972 in Exeter, New Hampshire, where two banks made available checking accounts and even currency denominated in constants. The experiment was discontinued in January 1974, supposedly because of the elderly Mr. Borsodi’s physical weakness, because of doubts about legality, and because earnings on the assets (mainly Treasury securities) matching the constant liabilities did not fully cover expenses plus the indexed growth in the dollar value of the liabilities. See “Paying with constants instead of dollars,” *Business Week*, May 4, 1974, p. 29.

<sup>4</sup>If only bonds and other long-term contracts were denominated in “constants,” then the base-year dollar would be serving not only as the standard of deferred payments but not as the general unit of account. The old textbook distinction between those two functions is perhaps not empty after all. (Alfred Marshall evidently had it in mind; see note 2.) Perhaps we should retain the distinction, especially if the idea of universal use of an index-defined stable unit of account turns out to be self-contradictory.

<sup>5</sup>Jacques Riboud, *Une Monnaie pour l’Europe: L’Eurostable* (Paris: Editions de la R.F.P., 1975), and *Eurostable*, Bulletin du Centre Jouffroy pour la Réflexion Monétaire, March–April 1977; Giorgio Basevi, Michele Fratianni, Herbert Giersch, Pieter Korteweg, David O’Mahony, Michael Parkin, Theo Peeters, Pascal Salin, and Niels Thygesen, “The All Saints’ Day Manifesto for European Monetary Union,” *The Economist*, 1 (November 1975), reprinted in Michele Fratianni and Theo Peeters, eds., *One Money For Europe* (London: Macmillan, 1978), pp. 37–43. My present purposes do not require sharply distinguishing the features of these different proposals.

arithmetic, we might think of the initial definition of *one hundred Eurostables* as  $g$  German marks plus  $f$  French francs plus  $i$  Italian lire plus  $u$  US dollars, and so on. We may think of 100 Eurostables as the total value of several little piles on a table, each of a specific national currency. Now, as national price levels rise (or fall) over time, the amount of currency in each pile is increased (or reduced) in proportion to its country's price index. The nominal amount of currency in each pile varies to keep its purchasing power unchanged; so the combined purchasing power of all the piles on the table remains constant also. Adjustments of this kind would be carried out at least as frequently as every month. Riboud envisages daily adjustments calculated with projections of the national price indexes and with whatever minor corrections proved necessary being made as the latest figure for each index became available. Constancy of the purchasing power of the Eurostable is defined with reference not to a single national price index only but to several specified indexes. In effect, the constant purchasing power of the Eurostable is the aggregate of the purchasing powers possessed by specified amounts of marks, francs, lire, dollars, and so forth *in the base month*.<sup>6</sup>

With details depending on the particular scheme in question, central banks or commercial banks would accept deposits and grant loans denominated in Eurostables or Europas. To be safe in incurring deposit obligations denominated in purchasing-power units and thus perhaps having to be honored in greatly increased nominal amounts of national currency, banks would have to hold assets similarly denominated. The question arises whether borrowers would be will-

<sup>6</sup>It seems to me that the following formulas would apply to the Eurostable system. The value of 1 Eurostable (or perhaps of 100 Eurostables, as suggested in the text) =  $\sum_{i=1}^n u_i P_i$ , where  $u_i$  = number of units of the  $i^{\text{th}}$  country's currency in the base-period basket and  $P_i$  is the  $i^{\text{th}}$  country's price index on the basis of its base-period figure being 1. The number of countries, currencies, and indexes involved is  $n$ . To consider exchange rates, let  $r_{jE}$  = number of units of currency  $j$  worth 1 Eurostable. (Currency  $j$  is a particular one of the currencies indicated by subscript  $i$ .) Let  $r_{ji}$  = number of units of currency  $j$  worth 1 unit of currency  $i$ ;  $u_i$  and  $P_i$  have the meanings already indicated. Then:

$$r_{jE} = \sum_{i=1}^n u_i P_i r_{ji}$$

The Eurostable or Europa is quite different from the Special Drawing Right of the International Monetary Fund and the Euro and other composite units described in Joseph Aschheim and Y.S. Park, *Artificial Currency Units: The Formation of Functional Currency Areas*, Princeton Essays in International Finance, No. 114, April 1976. These artificial units are defined as baskets containing *fixed* nominal amounts of national currencies; instead of having fixed purchasing power, they lose it along with the national currencies composing their baskets.

ing to incur debts perhaps repayable in unpredictably swollen nominal amounts of national currency. What would induce borrowers to incur such debts unless they could already count on receiving their incomes in such units? Especially low interest rates might constitute the inducement, but the low rates would be a disadvantage from the bankers' point of view.

We shall set aside the point that the two proposals mentioned, but the Europa scheme more so than the Eurostable scheme, envision that the new stable unit would serve not only as a standard of deferred payments and unit of account but also, increasingly, as a medium of exchange. Our concern here is just with how a separation of functions would work.

### Separation of Functions and Its Theoretical Appeal

History can give us little direct help toward answering this question. Separation is, to be sure, far from unprecedented. In Germany during the hyperinflation after World War I, some bonds were denominated and some prices calculated in centners of rye, Swiss francs, or grams of gold. In ancient times and in the Middle Ages, the money circulating in commercial centers was a hodgepodge of variously denominated coins from both local and far-away mints;<sup>7</sup> so the unit of account and medium of exchange could not have been unified. Even in the United States, until beyond the middle of the 19th century, foreign as well as American coins were in use; and the notes of the shakier or less well known state-chartered banks circulated at various discounts. But though examples of separation of functions, these were not cases of a single unit of account, distinct from the circulating medium, being in *general* use. Clearly they provide no example of a unit of account defined so as to have a stable purchasing power. The medieval "ghost moneys" described by Cipolla<sup>8</sup> were not such units, either; instead, they appear to have been multiples or fractions of some currently or formerly circulating coin used for convenience in arithmetic and accounting before the days of calculators.

What concerns us here is a different state of affairs; namely, how things would work with something like the Eurostable or Europa in general use as the unit of account and distinct from the medium of exchange. We may as well analyze the simplest case, in which the

<sup>7</sup>Heinrich Rittershausen, *Bankpolitik* (Frankfurt: Knapp, 1956), esp. pp. 58–60; Carlo M. Cipolla, *Money, Prices, and Civilization in the Mediterranean World, Fifth to Seventeenth Century* (Princeton: Princeton University Press, 1956).

<sup>8</sup>Cipolla, chap. IV.



“basket” defining the unit contains just one national currency, whose nominal quantity would be periodically adjusted upward in proportion to a single index of prices quoted in terms of the circulating currency. The dollar of base-year purchasing power, Borsodi’s “constant,” would then be the unit of account. (The Eurostable/Europa scheme is essentially the same except in defining a stable unit with reference to several price indexes instead of only one.)

The idea of separating the unit of account and medium of exchange has appeal as conceivably a way not only of achieving a stable measuring rod for economic coordination and economic calculation but also of avoiding the macroeconomic disorders mentioned earlier by giving the medium of exchange a flexible, market-clearing price of its own.

The separation of functions might also, for good or ill, help wear down money illusion and inflation illusion. Money illusion, in the old sense of the term, is the tacit assumption that a dollar is a dollar, that money is a stable measure of value, and that changes in the general price level reflect disorders from the side of goods rather than from the side of money. What might be called inflation illusion is the related perception of inflation as a sort of plague affecting wages and prices rather than as the specifically monetary disorder that it really is. These illusions are supported by money’s lack of any specific market (other than the foreign-exchange market, anyway) on which it is straightforwardly quoted and can be seen to be deteriorating. Money is quoted on millions of different markets in millions of different ways; but this very multiplicity of markets and of prices, many of which would be changing anyway even apart from any monetary disorder, obstructs any simple view of what is happening to money itself.

Things might be different if a Eurostable or some other index-defined constant existed against which national currencies were quoted every day. Such quotations would be the result of calculations, however, rather than of a direct market process; ordinary money still would not have an actual market specifically its own.

### Difficulties with a Constant Unit and Indexing

We still are left wondering whether general cost accounting, pricing, and contracting in terms of Eurostables or constants, while ordinary money continued to serve as the medium of exchange, could help overcome the macroeconomic difficulties associated with money as we have known it.

Before facing more fundamental questions, let us, for complete-

ness, recognize a couple of minor difficulties. A scheme involving use of a price index might create temptations to rig the index. Secondly, how would the use of stable units of account get launched? What would induce borrowers to incur debts in such units? If people are going to undertake commitments to make future payments or repayments denominated in a stable unit, they will want to count on receiving income denominated in the same unit. They want to be obligated to pay the sort of money they expect to receive—except insofar as they are persuaded to gamble on doing otherwise, perhaps by an interest rate lower than on ordinary loans.

Here is a chicken-and-egg or Alphonse-and-Gaston problem. The more payments people are already scheduled to receive in a particular money, the more readily will they take on commitments to make payments in the same money. The spread of a practice facilitates its further spread,<sup>9</sup> but its not yet having gotten a good start hampers its ever getting started. Being one of the early users of a new unit would confer benefits on latecomers, if the reform could succeed, for which the early users could not collect compensation. They thus have inadequate incentives to provide what would be in part a public good.

A more fundamental difficulty is illuminated by supposing, or trying to suppose, that the practice has become quite general of not only expressing debts and other contracts but also pricing goods and services in constants. Prices in ordinary dollars, supposedly continuing to serve as the medium of exchange, are translated from the prices set in constants according to the current level of the price index whose “basket” of goods and services defines the constant. That is to say, if the current month’s index of prices in ordinary dollars happens to stand 7 (say) times as high as the index in the base period—if the standard basket costs 7 times as many dollars as it did in the base period when, by definition, the dollar and the constant were equal in purchasing power—then the current exchange rate is 7 dollars per constant, and multiplication by 7 translates prices set in constants into current dollar prices.

But isn’t there a contradiction here? If dollar prices are determined by applying the price index to translate prices set in constants, what is the meaning of the dollar price index? It expresses the average

<sup>9</sup>With money as with language, acceptability enhances acceptability. “The use of a particular language or a particular money by one individual increases its value to other actual or potential users. Increasing returns to scale, in this sense, limits the number of languages or moneys in a society and indeed explains the tendency for one basic language or money to monopolize the field.” James Tobin, “Discussion,” in John H. Kareken and Neil Wallace, eds., *Models of Monetary Economies* (Minneapolis: Federal Reserve Bank of Minneapolis, 1980), pp. 86–87.

level of dollar prices calculated by means of the index itself (or by means of its latest published value, which may express the level of prices a few weeks earlier). In short, the dollar price level is the arithmetical consequence of itself or of its own recent value. A rise in the index arithmetically raises its component prices and thus itself, and so on. The level of dollar prices is adrift, giving itself further momentum as it moves. It would be, anyway, unless a restricted quantity of medium-of-exchange dollars somehow provided it with an anchor after all. We shall return to this question, or the closely related question, of the real quantity of the medium of exchange.

Meanwhile, there does seem to be an internal contradiction in the very notion of all-around indexing, that is, of all-around price-setting in a constant unit related to the ordinary medium of exchange by calculations with a price index. If indexing comes to be employed not only in long-term contracts but also in general pricing, then it kills off the market-determined prices necessary for the construction of meaningful indexes. Employed beyond a certain degree, it destroys itself. This degree is analogous, in a way, to the critical mass of fissionable uranium or plutonium. To avoid the contradiction, indexing must not be employed quite generally, but only to provide a stable standard of deferred payments. Indexing is parasitical on its *not* being applied in setting most (or many) prices. It presupposes that most of the prices entering into the calculation of the index are determined by market forces—by people's bids and offers—directly in terms of the medium of exchange.

Yet the very meaning of generally setting prices in index-defined constants—which is what we have been trying to imagine—precludes people's continuing to express their bid and ask prices only in medium-of-exchange dollars without reference to their exchange rate against constants. Does this imply, then, that people would be negotiating prices in constants? That, too, is bedeviled with contradictions. Pricing and costing and bargaining in terms of constants would seem to be trying or threatening to change a historical datum, the constant itself, that is, the purchasing power that the dollar had in the base year.

All-around indexing, or pricing in constants, runs counter to free-market pricing in another way. It would replace current supply-and-demand determination of individual prices with *calculations*, calculations presumably applied to a pattern of prices established some time in the past. Unless somehow modified, it would freeze relative prices and remove them from the influence of up-to-date market conditions.

A further difficulty arises when people are trying to build up or

run down their holdings of the medium of exchange. If the level of prices translated into medium-of-exchange dollars is adrift as a consequence of all-around indexing, as noted above, and if the quantity of medium of exchange is exogenously determined, then no process would seem to be at work tending to equate the actual and desired quantities of it. The exchange rate between dollars and constants, being a calculated number, is hardly something directly determined on the market by an equilibrating process.

Suppose that at its current purchasing power (however determined), people want to hold more of the medium of exchange than actually exists. How do they go about building up their holdings? They might start by bidding and asking lower prices for goods and services than translation from constants (calculations with the price index) would indicate. That would be a departure from the hypothesized all-around indexing. They might bid and ask lower prices in constants, thereby tending to alter the purchasing power of the constant. But since the constant is defined as a dollar of base-year purchasing power, changing its purchasing power means changing a historical datum—a contradiction in terms. Neither approach is compatible with what we are trying to conceive of—general pricing in terms of constants.

A conceivable alternative is that people, in trying to build up their cash balances, would not alter the prices they bid and asked but would simply hold back from buying things. (Their increased eagerness to sell things, not expressed in reduced selling prices, would have little operational meaning.) The outcome would be a recession in real economic activity of such degree that people no longer, after all, felt able to “afford” holding more than the actual quantity of medium of exchange. In that case, the joint existence of the constant and the medium-of-exchange dollar and the index-calculated exchange rate between them, far from providing a mechanism for painlessly ensuring monetary equilibrium, would pose an obstacle by making prices more nearly rigid or, perhaps more exactly, by making prices more nearly the arbitrary result of arithmetical calculations.

None of the ideas reviewed so far, then, would give the medium of exchange a price of its own determined on a market of its own in such a way as to keep its supply and demand painlessly in equilibrium. Widespread indexing as a stage of transition to something else might be conceivable, but the idea of universal indexing permanently associated with an ordinary medium of exchange verges on nonsense.

A more ambitious reform scheme might go beyond introducing a unit of account distinct from the medium of exchange. It might introduce demand deposits and even currency denominated in constants.

Their issuers would presumably stand ready to redeem them in equivalent amounts of the ordinary medium of exchange, equivalences being calculated with a price index. There is no obvious reason why the market exchange rate between the two media of exchange should diverge significantly from the calculated rate; arbitrage should prevent that. If deposits and currency denominated in constants should totally displace the ordinary medium of exchange, the question would arise of what would be left for them to be redeemable in. Issuers might conceivably promise to add to everyone's holdings of these new media of exchange in proportion to the rise in the price index. But then the nominal money supply and the price level would be indeterminate (as in a monetary system managed fully in accordance with the fallacious real-bills doctrine); increases in each would call for increases in the other, indefinitely.<sup>10</sup>

### Separate But Actual Units

Now that we have abandoned the idea of a generally employed abstract stable unit with a price-index-calculated exchange rate against ordinary money, let us suppose that the separate and stable—but now only relatively stable—unit of account actually exists as a commodity, say gold, or as a foreign currency.<sup>11</sup> Suppose that Americans came to use German marks or grams of gold as units of account while still making and receiving payments in ordinary dollars. (Offhand, no fundamental difference is apparent between using the mark and using gold as the other unit alongside the dollar, but this question may require further thought.) One difference from all-around indexing and similar schemes is that a currently market-determined exchange rate, and not just a calculated translation rate, does exist between the parallel unit and the domestically circulating dollar. Does this exchange rate and the market on which it is determined serve as a price and market “of its own” for the domestic medium of exchange in such a way as to solve or mitigate the macroeconomic problems previously reviewed?

Suppose, for definiteness, that Americans undergo a change in tastes and desire increased *real* holdings of dollar cash balances. Under ordinary circumstances and with the nominal supply of dollars unchanged, a deflationary process sets in that cuts production and

<sup>10</sup>Cf. William Baumol, “The Escalated Economy and the Stimulating Effects of Inflation,” *Rivista Internazionale di Scienze Economiche e Commerciali*, XII (February 1965): 103–114.

<sup>11</sup>As Heinrich Rittershausen says, a separation between the functions of money does occur on the international scene. *Bankpolitik*, pp. 61–62, 67–69.

employment as well as prices. Under the separation of functions, however, the dollar appreciates against the mark or gold, meaning that the total quantity of the medium of exchange grows in terms of the unit of account. (Alternatively, though perhaps less plausibly, the level of U.S. prices expressed in the marks or gold falls directly. In either case, the dollar money supply gains in purchasing power over goods and services.) The separation of the unit of account and medium of exchange, with translation between them at a flexible, market-determined price, does appear to be a way of avoiding or relatively painlessly correcting a monetary disequilibrium. But this conclusion requires further pondering.

We must ask, also, whether such a split system would be durable. Would it come into use in the first place if the general purchasing power of the mark or gold were only slightly less unstable than that of the dollar? And if the dollar were much more unstable, would it nevertheless persist in use as the medium of exchange? Since unification of money's functions is a convenience for its users, the mark or gold might then well displace the dollar as the medium of exchange also.

Durable or not, the system just mentioned is worth considering, for F.A. Hayek recognizes something similar as a preliminary step to the ultimate reform that he recommends (which is discussed below). Hayek would permit people in each country to use foreign currencies as units of account and media of exchange; these would be free to compete with the national currency.

## Private Money

Realistically, private money must mean money that is *predominantly* so. The government would still be involved—in repressing force and fraud and in enforcing contracts. (I cannot go all the way with libertarians of the anarchist wing.)

As a libertarian, I favor allowing free banking—the competitive private issue of notes and deposits redeemable, presumably, in gold. (Because this is Lawrence White's topic, I'll be brief.) Notes and deposits would be backed by merely fractional reserves, for efforts to enforce 100 percent banking in the face of contrary incentives and private ingenuity would require unacceptably extreme government interference.

For people serious about a gold standard, the monetary unit should be a physical quantity of gold, such as the gram or milligram, and not some abstract unit whose definition in terms of gold is subject to change. Yet I have doubts about whether such a system could catch

on. How would the voluntary use of gold units catch on? If bankers are to issue note and deposit liabilities denominated in gold, they will want to hold assets—loans and investments—also denominated in gold. The problem of motivating people to go first in using new units, already noted in connection with index-defined units, arises here too.

Furthermore, a gold monetary unit is preposterous in the same way as a fiat unit, although in lesser degree. The unit of value still lacks objectivity and dependability. Its size (purchasing power) depends on interaction between supply of and demand for an industrially rather unimportant substance being supplied and demanded predominantly for monetary purposes (that is, in association with the demand for money more broadly defined). The real size of a gold unit, as of a fiat unit, is changeable and undependable. Imbalance between the demand for and supply of monetary gold, like such imbalance for government-issued fiat base money, touches off a roundabout and sluggish process of adjustment in the unit's real value, a process with painful macroeconomic side effects. Furthermore, lapses of confidence in banks operating with fractional reserves could touch off a self-aggravating scramble for the gold on which the system is based.

Better alternatives are available. The government cannot avoid giving some encouragement to one or another system of private money. It is bound to do so by the manner in which it disengages itself from the present government-dominated monetary system. Therefore, the advantages and disadvantages of the different private systems are bound to be a topic of policy discussion. To say "Let the market decide" is no adequate answer.

F.A. Hayek would authorize the issue of competing private fiat moneys. He has set forth the advantages of his proposal in some detail and has also tried to foresee and deal with difficulties.<sup>12</sup> My concern with his scheme is to ask the sorts of questions raised about indexing and other schemes already reviewed. What would determine the value of each money unit? How would price levels and the

<sup>12</sup>Hayek describes his proposal in *Choice in Currency*, Occasional Paper 48 (London: Institute of Economic Affairs, 1976), and *Denationalisation of Money*, Hobart Paper Special 70, 2nd ed. (London: Institute of Economic Affairs, 1978). Cf. Thomas Saving, "Competitive Money Production and Price Level Determinancy" [sic], *Southern Economic Journal* 43 (October 1976): 987-994; Benjamin Klein, "The Competitive Supply of Money," *Journal of Money, Credit, and Banking* 4 (November 1975); Gordon Tullock, "Competing Moneys," *Journal of Money, Credit, and Banking* 7 (November 1976); Benjamin Klein, "Competing Moneys: Comment," *Journal of Money, Credit, and Banking* 7 (November 1976).

exchange rates among the different private currencies be determined? Would money acquire a price and market of its own in such a sense that the supply of and demand for each money would be equilibrated relatively painlessly?

Under Hayek's scheme, each issuer would have his own unit (ducat, crown, florin, or whatever; the proposal does *not* envisage rival currencies all denominated in the same unit, such as a quantity of gold, although gold-dominated currencies could figure among the competing units). The different units would be free to fluctuate against each other. The value of each unit would not be a matter of sheer definition (as would be true of an index-defined abstract unit) but would depend on supply and demand. Each money would exist in some definite quantity. Each issuer would supposedly have an incentive to restrain his issues so as to keep the purchasing power of his unit stable, thereby attracting more and more holders. (Rather than go further and try to engineer an actual deflation of prices in terms of his money, he would presumably pay explicit interest on holdings.) The larger the real volume of his currency people would willingly hold, the larger the volume of loans the issuer could have outstanding and earning interest. Success in restraining his issue to the volume demanded at a stable value of his unit would itself strengthen that demand, which he could then profitably meet. Virtue would bring its own reward. Conceivably a single money might become the dominant or the only one used in a given territory. Its issuer would remain disciplined, though, by potential competition.

Under Hayek's scheme, separation of functions in one sense is lost—separation between the unit of account and medium of exchange—but separation is gained among the different monetary units, each of which would perform both functions.

If people wanted to acquire additional holdings of particular Hayek currencies, these would begin rising in value on the inter-currency exchange market and probably in purchasing power over goods and services also, leading their issuers to expand their amounts. If people wanted to reduce their holdings of particular currencies, they would fall in exchange value and probably in purchasing power, prodding their issuers, anxious to preserve their reputations, to try to reduce their outstanding issues, in the first instance by repurchasing them with reserves of other currencies. Through exchange-rate, purchasing-power, and quantity changes, then, and notably through quantity responses, equilibrium between desired and actual amounts of particular currencies would be maintained or restored.

But what happens if people desire to build up their real holdings of all currencies, or desire to build up the total real purchasing power



that they hold in currencies in general? This desire might strike some currencies earlier or in greater degree, so that the same changes and incentives as mentioned above would occur. But suppose, instead, that the real demand for currency holdings increased uniformly. Well, currencies would tend to gain in purchasing power (approximately uniformly, with exchange rates approximately unchanged). This would motivate their issuers to expand their circulations. However, the purchasing power signals would appear more slowly and more sluggishly than the exchange-rate signals would appear in the alternative case of only some currencies being directly affected.

But this may be a point in favor of the scheme: In practice, changes in the real demands for holdings of various currencies will not occur uniformly, and exchange rates will change, motivating changes in the issues most affected. In other words, just as nowadays, there will be no single market on which and single price at which currencies in general exchange against other things. However, people will no longer be dealing with money in general. Each currency will have a market and price of its own—the exchange market and its exchange rate.

In considering stable units of account or gold units serving in parallel with ordinary money as the medium of exchange, we noted the difficulty of getting such a system launched. People would have weak incentives to supply the public good of being its early users. The same would be true of trying to launch Hayek's system.

Another public-good aspect of a prudently managed currency is that, once well launched, it provides even people who do not hold it and do not make and receive payments in it with a stable unit of account in which they might conduct their calculations and express their claims and debts. Because of the free availability of his money as a unit of accounting and calculation even to parties who held little or none of it, a well-behaved issuer could not collect compensation for all the advantages he was conferring on the public in general. The social benefits of his maintaining a stable money would not come fully to his attention. The standard argument seems relevant that the purely private provision of public goods falls short of the optimum, plausibly defined.<sup>13</sup>

<sup>13</sup>Referring more to money in general than to specific currencies, Herbert Grubel notes that money saves resources otherwise consumed in accomplishing barter transactions, and it promotes productivity by encouraging specialization. Most of these benefits accrue to society as externalities. Herbert G. Grubel, *International Economics* (Homewood, Ill.: Irwin, 1977), p. 449.

For further distinction between the public and the private benefits of money, see J.R. Hicks, "The Two Triads," in his *Critical Essays in Monetary Theory* (Oxford: Clarendon Press, 1967), pp. 1–60.

These points about public goods and externalities suggest that private-enterprise money would be at a disadvantage relative to government money. While the government incurs the costs of running a monetary system, it also more or less covers them from the seigniorage yielded by its quasi-monopoly position. These considerations may not be quantitatively important. (All sorts of private activities generate positive externalities without themselves being made unprofitable—for example, the benefits that relatively lazy shoppers get from the careful shopping of others, or free rides obtained on the information generated or publicized by organized markets.) Still, monetary reformers should face these points.

In a different respect, switching to a new currency creates a public *bad* if it shrinks demand for holdings of the old one, whose value consequently zigzags downward more sharply than otherwise. This problem of currency substitution might plague a system of competing private currencies even if it could somehow be successfully launched. According to the scheme's very logic, holders of the different currencies, as well as the financial press, would be alert to signs of unsound management and incipient depreciation of any one of them. Its holders would dump it and fly into others. Responses of this sort would destabilize the exchange rates between the different currencies, upsetting transactions and calculations. Like bank runs in the days before deposit insurance, such runs from one currency to another would be harmful from an overall point of view, though resulting from individuals' efforts to protect themselves.<sup>14</sup> (To recognize these disruptively sensitive responses is not to deny, however, that current and expected future purchasing-power parities would no doubt be the main systematic determinants of exchange rates.)

A possible variant of Hayek's schemes comes to mind. According to the original proposal, private issuers would strive to keep their moneys stable in value by suitable regulation of their quantities but would not keep them redeemable in anything in particular. (To get

<sup>14</sup>For a description of this possible problem, though not for its relation to Hayek's proposal specifically, see Marc A. Miles, "Currency Substitution, Flexible Exchange Rates, and Monetary Independence," *American Economic Review* 68 (June 1978): 428–436.

The problem of instability from currency substitution seems more likely to characterize rival currencies competing even within countries than ordinary national currencies floating against each other on the foreign-exchange market. As long as one's fellow countrymen are still quite generally using the national currency, it is awkward and expensive for an individual or firm to try to initiate the shift to some other country's currency as its routine unit of account and medium of exchange even in domestic transactions. With money as with language, inertia tends to perpetuate an entrenched use.

their moneys launched in the first place, issuers might promise to redeem them in definite amounts of government money; but as inflation continued to eat away the value of government money, redeemability in it would become more and more a dead letter.) Now, issuers might find it to their competitive advantage (or might conceivably be required) to promise redemption of their currencies on demand in gold (or in some other one or more commodities or even securities). The quantity of gold (or other redemption medium) per currency unit would not be physically fixed, however, but would be whatever quantity had a fixed purchasing power over the goods and services composing a specified bundle. That amount of gold would be recalculated each month (or day) from the open-market price of gold and from the prices of the various goods in the bundle. Issuers might also undertake to issue their currencies in exchange for the calculated amounts of gold, perhaps instituting a slight spread between their selling and buying prices of gold to cover expenses. Convertibility of this sort would give additional operationality to the expectation that issuers would strive to keep their money units stable in purchasing power; they would now be required to *do something* at the initiative of the money-holders.<sup>15</sup> Furthermore, if the different issuers kept recalculating the constant-purchasing-power amounts of gold in which their currencies were redeemable with reference to a common basket of goods and services, then an inconvenience of Hayek's system—that of a multiplicity of units of account, analogous to multiple systems of weights and measures—would be avoided. The operating properties of this variant system, however, remain to be explored.

### A Single Stable Unit Distinct from the Medium of Exchange

By saving until now the reform that I currently prefer, I have avoided letting it monopolize the paper. Robert Greenfield and I have described it in detail elsewhere, provisionally calling it the "BFH system."<sup>16</sup> Like the reform proposed by Hayek, it would almost completely depoliticize money and banking. By the manner of its withdrawal from its current domination of our current system, the

<sup>15</sup>This idea draws some inspiration from Anourin Williams' and Irving Fisher's proposals, cited in note 2, for what Fisher called a "compensated dollar" and from Willford I. King, *The Keys to Prosperity* (New York: distributed by the Committee for Constitutional Government, 1948), pp. 209–210.

<sup>16</sup>Robert L. Greenfield and Leland B. Yeager, "A Laissez Faire Approach to Monetary Stability," forthcoming in *Journal of Money, Credit, and Banking*, where writings of Fischer Black, Eugene Fama, and Robert Hall are given credit for some component ideas.

government would give a noncoercive nudge in favor of the new system. It would help launch a stable unit of account free of the absurdity of being the supply-and-demand-determined value of the unit of the medium of exchange. The government would define the new unit, just as it defines units of weights and measures. The definition would run in terms of a bundle of commodities so comprehensive that the unit's value would remain nearly stable against goods and services in general. The government would conduct its own accounting and transactions in the new unit. Thanks to this governmental nudge, the public-goods or who-goes-first problem of getting a new unit adopted would largely be sidestepped. The government would be barred from issuing money. Private enterprise, probably in the form of institutions combining the features of today's banks, money-market mutual funds, and stock mutual funds, would offer convenient media of exchange. Separation of a unit of account of defined purchasing power from the medium—or rather media—of exchange, whose quantity would be appropriately determined largely on the demand side, would go far toward avoiding macroeconomic disorders and facilitating stable prosperity. Lacking any base money, whether gold or government-issued money, on which ordinary money would be pyramided on a fractional-reserve basis, the BFH system would not share the precariousness and vulnerability of ordinary monetary systems.

Although I do not have the space for a full description of the BFH system and do not want to repeat myself by providing one here, I would like to forestall a few misconceptions that, as experience shows, are likely to arise. The BFH system is not a variant of the often proposed composite-commodity or commodity-reserve system of government money. It is not a variant of the tabular standard (widespread indexing). Questions about whether the BFH system involves convertible or inconvertible money—questions presupposing some familiar answer—are inapplicable to it. The definition of its unit of account does not require “implementation” through convertibility of any familiar sort, any more than does maintenance of the defined length of the meter. (Of course, ordinary business practice would force people to make and receive payments for current purchases and sales of goods and services and in settlement of debts in property actually worth the specified number of units of account. Whether this counts as “convertibility” is a mere question of terminology.)

The BFH system would lack money as we now know it. People would probably make payments by writing checks—checks denominated in the defined unit of account—on their holdings of shares of

stock in institutions combining the features of mutual funds and banks. (These shares would have market-determined flexible prices.) These practices would not entail the textbook inconveniences of barter. The advantages of having a single definite unit of account and convenient methods of payment would be retained and enhanced. The absurdities of linking the unit of account and medium of exchange in the manner now familiar to us would be avoided. (By contrast with the situation in which both paper dollars and gold, say, were temporarily serving as both *unit of account* and *medium of exchange*, the conditions promoting convergence onto a single money serving both functions would be absent.)

Unlike the monetarism we are familiar with, which requires an accurate adjustment of the quantity of money to the demand for it and must therefore be suspicious of innovations that alter the supply-demand relation and even blur the concept of money, the BFH system can positively welcome deregulation and financial innovation. The government can take just as much a *laissez-faire* stance toward the financial system, once it has offered and promoted a particular definition of the unit of account, as it can take toward ordinary businesses that happen to employ a defined unit of length in their operations.

### Concluding Remarks

It is easy to say that the best reform of all would institute a single *worldwide money* of assuredly constant purchasing power serving all four of money's traditionally listed functions. But recommending such a money would be empty unless we could specify how to achieve and maintain it. A monetary system is a set of institutions, sustained by laws, not a laundry list of desirable features. An abstract *wish for ideal results* does not itself chart a way out of present-day disorders.

It is easy, also, to point to complications and costs and nuisances associated with Hayek's and other reform schemes. In part, these would be open manifestations of complexities already existing but hidden in governmental *monetary* systems uniting the several functions of money (for example, distortions of information through inflation). These complications are different in detail under each scheme from what they are under unified government moneys. There is much to be said for having the complexities and costs evident, rather than keeping them as hard to perceive and cope with as they are nowadays.

With government no longer obscuring the relevant costs and benefits and no longer impeding financial innovation in efforts to shore

up its own preposterous monetary system, we could expect private ingenuity to develop a monetary system—or a system transcending money—with features perhaps even more attractive than any we can now imagine.

## A FREE-MARKET MONEY: COMMENT ON YEAGER

*Gerald P. O'Driscoll, Jr.*

### Economic Coordination and Calculation

In his paper, Professor Yeager has appropriately emphasized the issues of economic coordination and calculation. Transactors' ability to plan successfully depends critically on being able to calculate benefits and costs of alternative activities. The market system of money prices plays a crucial role in this process. As Yeager observes, to be meaningful these money prices must be the outcome of a market process and not merely arithmetical calculations. The economic difference between market prices and such calculated values is widely overlooked in public policy discussions.<sup>1</sup> It is refreshing, therefore, to see the point forcefully and clearly stated. Equally refreshing is the absence of a long "laundry list" of macroeconomic goals to be achieved by a monetary standard. Instead, Yeager focuses on the microeconomic properties of alternative monetary systems.

By facilitating individual benefit-cost calculations, the money-price system helps coordinate economic activity. Individual calculation and planning is based on common price and cost information. Individual decisions are "Telegraphed" via the price system and used in next period's decision-making. Yeager analyzes how the operation of feasible monetary systems would affect economic calculation and coordination. For Yeager, our current fiat money system is "prepos-

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<sup>1</sup>For the importance of making this distinction, see Gerald P. O'Driscoll, Jr. and Mario J. Rizzo, *The Economics of Time and Ignorance* (Oxford: Basil Blackwell, 1983), chap. 7.

terous," because "our unit of account . . . is whatever value supply and demand fleetingly accord to the dollar of fiat money."

In what follows, I propose to judge Professor Yeager's effort substantially in terms of the microeconomic framework that he himself uses in analyzing the question of "Stable Money and Free-Market Currencies." It provides an excellent basis of discussion and analysis. In fact, my chief disagreements with Yeager arise when he abandons his own framework or deviates from his own standard of analysis.

In the next section I introduce some technical disagreements that I have with Yeager's analysis. In the final section I raise some general issues for monetary reform. These involve public-choice considerations of the constituencies for monetary systems. Technical and analytical disagreements aside, these issues must be addressed in assessing any proposal for monetary reform. I suggest that Yeager's proposal fails to do so.

### The Standard of Value

Unfortunately, Yeager borrows from the macroeconomic "laundry list" almost at the beginning of his analysis. His indictment of the dollar is chiefly based on its failure to provide us with a stable unit of account. He criticizes the unstable dollar on two grounds. First, it interferes with coordination due to the problem of price and wage stickiness. Second, even absent price inflexibility, an unstable unit of account would impair coordination by impeding calculation. Calculation requires a stable unit of account.

Yeager has been misled by his own analogy between a unit of account and units of weight and length. There is in fact no good analogy here, as can best be seen by considering a gold-standard example. Money is measured in ounces of gold. If Yeager's analogy held, the unit of account would be a measure of a measure, like "ounces of ounces" or "ounces of feet." The concept is almost unintelligible, the source of confusion arising from equivocating on what is "measured" by a unit of account. One foot is an invariant length, now standardized. The value of money is the outcome of millions of acts of choice, each revealing a fleeting or momentary evaluation of the relative value of two options. An essential aspect of this economic process is *variation* in these values. The search for a stable unit of account is ultimately the search for an invariant standard of value, the quixotic goal of classical political economy. Money does not measure anything invariant, but its changing value reveals changing preferences and opportunities. Moreover, the policy of stabilizing money's value may itself destabilize microeconomic relationships.



By considering this issue in some depth, I can deal with most of the major issues raised by Yeager.

First, stability in purchasing power, as measured by price indices, is surely not an ultimate goal. Consider two worlds. In one, the purchasing power of money, as measured by a suitable price index, is absolutely stable over any finite period of time. It is the "perfect" fiat standard: The monetary authority precisely adjusts the supply of money to its demand. The adjustments are so frequent, however, as to interfere with the market's coordination process. Money is being injected and withdrawn so as to create large variance in individual relative prices.<sup>2</sup> Money's purchasing power is stable, but cycles in real economic activity are generated by a destabilizing monetary policy. In the second monetary system, prices fall secularly at an average rate of three percent per year. Money's purchasing power appreciates because the supply of real goods grows more rapidly than the supply of money. Transactors have adapted to falling prices. Indeed, the growth of real income itself testifies to this adaptation. Such historical cases are not unknown.<sup>3</sup>

By focusing on economic coordination and calculation, Yeager implicitly accepts that stabilizing the purchasing power of money (PPM) is only a means to stabilizing economic activity. Yet by continually linking a stable PPM with economic coordination, he begs crucial economic questions. Unless a monetary policy of stabilizing PPM is neutral even in the short run, it can itself become a source of instability of real economic activity.

Yeager also appears to accord an existential status to the PPM. His analysis creates the impression that the PPM is an observable magnitude, like a relative price, which directly influences economic activity. For instance, we are told that: "A price index, like individual prices, responds sluggishly." A price index is a statistical artifact, not a price set in any market. Given the way it is constructed, its movements are determined solely by movements in the relative prices that compose that index. It cannot vary apart from variations in these component prices. Of course, as in my previous example, these rel-

<sup>2</sup>For the classic statement of this argument, see Friedrich A. Hayek, *Prices and Production*, 2nd ed. (London: Routledge & Kegan-Paul, 1935).

<sup>3</sup>The stock of money grew at an average annual rate of 6 percent between 1879 and 1897. Wholesale prices fell at an average rate of 1 percent in this period. Kuznet's estimate of Net National Product in constant dollars grew at average annual rate of 3.7 percent during these years. This latter figure translates to an annual average increase of 1.5 percent in per capita income (NNP). Milton Friedman and Anna J. Schwartz, *A Monetary History of the United States, 1867-1960* (Princeton University Press, 1963), pp. 91-95.

ative prices may be varying all over the place yet the index remain constant. It is misleading, however, to suggest that the price index can be “sluggish,” as though it were failing to respond to a market excess demand. In fact, Yeager’s characterization of the PPM is at root inconsistent with his observation that money has no single market in which it is traded.

If we keep in mind that an index is not a “price” at all, then the whole policy of stabilizing the PPM becomes questionable. There are many possible price indices, and for each, there are many ways of constructing them. Unless relative prices were invariant—which would make the whole discussion trivial—conducting monetary policy to stabilize the PPM in terms of one index would insure an *unstable* monetary unit in terms of every other index. The success of such a policy in terms of one index insures its failure in terms of other statistical indices. Which index is “correct”? If transactors can deal with instability in terms of all price indices but one, why cannot they cope with change in all indices?

Yeager bases much of his argument for stabilizing the PPM on price and wage stickiness.

Elements of price and wage stickiness, though utterly rational from the individual points of view of the decision-makers involved, do keep downward price and wage adjustments from absorbing the full impact of the reduced willingness to spend associated with efforts to build or maintain cash balances. The rot snowballs. . . . (Yeager, p. 306)

Unfortunately, this argument proves too much. It suggests not stabilizing the PPM, but a policy of insuring that no important price ever need fall. Price stickiness in any important market would lead to unsold goods and falling incomes in that market or sector. Multiplier effects would spread the “rot.” If this argument were correct, then monetary policy for a free society would be one of unlimited inflation, i.e., a policy in which no important price ever falls. Some might feel that this has been the monetary policy of Western countries in recent years. But there is something wrong with an analysis that suggests this is the preferred monetary policy for a free society. Rather than consider further detailed points of difference with Professor Yeager at this point, I prefer to deal with some more general issues.

### Free-Market Currencies and a Free Society

I don’t know what a free-market monetary system would look like. Neither does Professor Yeager nor anyone else. We can, of course,

speculate about such a system. Sound analysis helps us eliminate improbable or unworkable systems. If a monetary system is postulated to be the outcome of a market process, it must be a probable or reasonable result of market processes as we know them. Likewise, for a monetary system to be workable, its operation must be consistent with the motivation and incentives of individuals whose actions determine or affect the system. I fear that Yeager's own system, and most of those he considers, are improbable or unworkable.

I find Yeager's critiques of alternative proposals to be basically sound. Accordingly, I focus on his own proposed reform. He suggests that in his proposed system, government's role would be to "give a noncoercive nudge in favor of the new system." Indeed, "government would be barred from issuing money." He then affirms that:

Private enterprise, probably in the form of institutions combining the features of today's banks, money-market mutual funds, and stock mutual funds, would offer convenient media of exchange. (Yeager, p. 324)

Yeager observes that these accounts would permit separation of the unit of account and medium of exchange functions.

Absent from Yeager's proposal is any reason or motivation for private individuals or institutions to do what he recommends. Indeed, one is tempted to raise the same critical question Yeager raises about a true gold standard, and about Hayek's competing currencies: How would the system catch on? Further, if there is a demand for an invariant standard of value, why is the market not now supplying such a good? If the unit of account is separable from a medium of exchange, then a stable unit of account could be offered in conjunction with any monetary system. In fact, where there is demand for an indexed commodity, or one whose value is otherwise linked to that of real goods, then this commodity is supplied on the market. One can purchase stock funds indexed to a composite group of stocks. Bonds have been issued in which creditors have a choice of repayment in dollars or, in one case, units of coal and, in another case, units of silver. There is no reason why such contracts could not be made payable in terms of a basket of commodities.

To my knowledge, there is no impediment to firms offering assets indexed to market baskets encompassing a variety of goods (units of consumer purchasing power, for instance). Like indexation, Yeager's proposal appears to be an idea that has failed the market test. Professor Yeager has really presented us with a marketing or entrepreneurial idea, not a program for monetary reform. It would not appear to be a promising one based on observable experience. There are good economic reasons for this.

It is questionable whether there is a demand for a medium of exchange whose value is stabilized in terms of a widely-defined array of goods. Among other things, a medium of exchange is held because its value is largely insulated from real shocks affecting individual commodities. For instance, an oil-supply shock affects the value of money in terms of oil. Incidental or second-round effects aside, money's value in terms of other goods is unaffected. In all schemes like Yeager's, real supply-and demand-stocks in one sector will be transmitted to other sectors, altering money's purchasing power in terms of other goods. This transmission process is called "stabilizing the value of money." I suggest that economic agents do not want this as an attribute of a monetary unit. It certainly was not an attribute of historical market-determined monetary systems. What Yeager sees as a vice of real-world monetary systems may then be one of their virtues, *as evaluated by market participants*. Yeager is led into his position by ignoring his own basic microeconomic and market-oriented approach to monetary questions.

I am not suggesting that in matters monetary all we can say is "Let the market decide." Any proposal for monetary reform today must involve a proposal for positive government actions on monetary policy and monetary institutions. If economists start with the premise that a monetary reform ought to be in the direction of free-market currencies or a free-market monetary system, however, then more attention must be paid to economic agents' demonstrated preferences for monetary and financial assets. And correspondingly less attention ought to be paid to traditional macroeconomic "laundry lists" of properties of monetary systems, or of goals of monetary policy.

All other issues aside, it would seem fruitless to continue advocating "ideal" monetary schemes that ignore political-economic realities. Monetary reform is long on lists of desirable properties and short on any analysis taking account of public-choice considerations. In other areas of public-policy debate, analysts have long since incorporated public choice theory. The focus is not on affirming good intentions, but on establishing relevant constraints on decision-makers. In fiscal matters, public choice theorists have successfully shifted the debate to constitutional issues. Monetary debates would benefit if similarly refocused.

Until now, gold-standard advocates have been almost alone in adopting a constitutional or public-choice approach to the question of the standard.<sup>4</sup> Consistent gold-standard advocates would eliminate

<sup>4</sup>For a beginning of a public-choice approach, see Gerald P. O'Driscoll, Jr., "Rational Expectation, Politics, and Stagflation," in Mario J. Rizzo, ed., *Time, Uncertainty, and Disequilibrium* (Lexington, Mass.: D. C. Heath, Lexington Books, 1979), pp. 168-71;

all discretion from the monetary system. The flexibility of markets is substituted for discretionary policy. This solves a whole array of political problems, traditionally dealt with under the rubric of "the political business cycle." Under a true gold standard, there would be no question of short-run political forces (e.g., a budgetary crisis) influencing monetary policy. Critics of commodity standards decry the absence of discretion. They point to the superiority of idealized fiat-money systems. This response ignores all of the public-choice or political-economic considerations that lead commodity-standard proponents to advocate monetary systems with minimal discretion. Yeager is proposing such an idealized system. It assumes away all of the informational and political problems plaguing existing systems. If these problems could be eliminated, why would we need monetary reform?

My point here is not to argue the gold-standard case, but to suggest that it is time that the public-choice aspects of monetary reform be dealt with. Who knows, maybe the gold advocates or their free-banking cousins will turn out to be right?

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Richard E. Wagner, "Comment: Politics, Monetary Control, and Economic Performance," *ibid.*, pp. 177-86; *idem*, "Economic Manipulation for Political Profit: Macroeconomic Consequences and Constitutional Implications," 30 *Kyklos* (Fall 1977): 395-410.