

TOWARD FORECAST-FREE MONETARY INSTITUTIONS

Leland B. Yeager

The beginning of wisdom . . . is to know that the future is unknowable. . . . Recognizing the inscrutability of the future requires . . . humility and intellectual self-discipline. It requires the candid recognition that human history is a discontinuous process, rather than the neat projection of established trends. . . . But the occasional awareness of our limitations is quickly elbowed aside by our all too human eagerness to define, right now, the shape of things to come.

—Irving Kristol¹

[O]ur future is not determined by mathematical curves but by our own intelligence and will. But if this is so, the whole so-called science of business-forecasting inevitably becomes very much discredited. What the economist can do is to examine present facts and proposed lines of action, and to show how they are likely to influence the development of economic life. But he can never make a prediction of our future independent of our own actions. And we should never lose sight of the fact that the future is influenced by coming events about which we know nothing, and the prediction of which in any case does not belong to economic science.

—Gustav Cassel²

If you must forecast, forecast often!

—Anonymous³

The Passion for Forecasts

A passion for forecasts carries to an extreme the “passion for news” diagnosed, with amusing exaggeration, by Jacques Ellul (1967,

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¹Irving Kristol, quoted from *Fortune*, February 1969, by Fiedler (1990, p. 130).

²Cassel ([1927–28] 1951, pp. 332–33).

³The second of “three central laws of forecasting” cited by Fiedler (1990, p. 141). Many years ago I heard or saw this maxim attributed to either Marcus Nadler or Jules Backman, professors at New York University.

pp. 53–63). News entertains. Being *au courant* serves one's sense of prestige. Unconcerned with enduring principles and connections, losing any sense of continuity, the ordinary citizen excites himself only over the latest events. Reflection would involve the news of the day before yesterday rather than just of this morning. To avoid drowning in the flood of news, he must forget. "[T]he more superficial, unimportant, and spectacular the information, the more people will be interested in it. . . . public opinion revolves only around problems of the immediate present" (Ellul 1967, p. 55). Someone living in the news demands immediate solutions, perhaps sensing that tomorrow he will have forgotten the problem exciting him today.

Gordon Williams's brief radio broadcasts, supposedly on economics, illustrate these passions. They have nothing to do with economic principles—unless one so counts the notion that spending (other than on imports) is good and more is better. Williams is preoccupied with the latest officially released economic number and even with forecasters' guesses about a number scheduled for release that morning. His and other broadcasts often say not that the stock market closed yesterday at 2572.8 (or whatever) on the Dow but that the market will open this morning at that figure. Speaking that way seems more up-to-the-minute and future-oriented than reporting what is, after all, a numerical detail of recent history.

The passion for news and forecasts shows up in media discussions of whether inflation is dead and whether the Federal Reserve should turn its attention to "fighting" something else. This attitude gives policy a short-run bias. The typical commentator seems to lack understanding of or concern for unintended policy consequences working themselves out only over time in unforeseeable ways.

Foretelling the Future versus Scientific Prediction

Accurate economic forecasts (beyond short-run extrapolations, anyway) are hardly possible apart from forecasts of all human affairs. So-called economic behavior depends on innumerable factors, including noneconomic ones and including people's theory-conditioned and subjective reactions to their experiences. Almost by definition, history is the unfolding of unique events and combinations of events. Minor causes can have major consequences, as the recently fashionable mathematics of "chaos" should have impressed on economists. If only Queen Victoria had been a man—if only one microscopic detail had been different at her conception in August 1818—the crowns of Great Britain and Hanover would have

remained linked, and subsequent history might well have unfolded quite differently from the tragic way it did.

Because history is unique, foretelling the future is fundamentally different from the if-this-then-that predictions of natural science. A chemist can predict the result of placing zinc in hydrochloric acid, but he cannot foretell how much zinc and how much acid will generate how much hydrogen in a particular year. Similarly, it is unreasonable to expect an economist to foretell a country's balance of payments or inflation rate or interest rates in the unique historical circumstances of a few years later. Astronomers can foretell events within our solar system because known bodies move subject to known forces, with outside disturbances essentially absent. An economic system, in contrast, responds to all sorts of changing outside influences.

Econometric research can take advantage of the unplanned experiments cast up by history to shed some light on whatever dependable relations may hold among some economic magnitudes. Research of this sort is not the same thing as foretelling the future and hardly justifies adopting policies that presuppose it.

Degrees of Dependence on Forecasting

But even if forecasts are unreliable, what alternative do we have to making them? Must not decisions of all sorts rest on judgments about the future? Isn't budgeting indispensable, even though largely an exercise in forecasting? Well, yes, but a distinction holds. Forecasts are more crucial to some arrangements and policies than to others. The mistake is to depend on them needlessly. It is sensible to avoid, when we can, making ourselves dependent on trying to do what we cannot do well.

Forecast-dependent policies require foretelling prices, output growth or recession, unemployment, interest rates, balances of payments, or whatever, and then, if these outcomes are judged unsatisfactory, trying to make them turn out differently. In making so much depend on the subjective judgments of the authorities, such policies make the economic environment less predictable; for they set private decisionmakers to guessing what the authorities will do. Financial journalists plausibly relate many episodes of volatility in the stock, bond, and foreign-exchange markets to uncertainties and changing conjectures about monetary policy. Injecting avoidable uncertainties about policy tends to waste the scarce human capacity to cope with the change and uncertainty that is inescapable.

A contrasting type of policy relies, instead, on something more akin to scientific if-this-then-that prediction: It involves examining the likely operating properties of alternative sets of institutions and choosing the set judged to have the most attractive properties on the whole. It holds down the scope of frequent large centralized decisions, whose effects are harder to cope with than the gradually occurring cumulative effects of innumerable decentralized private decisions.⁴

All planning necessarily looks to the future. But just as the logic of a market economy recommends *decentralized* planning, so it recommends “competition in prediction” as “an integral part of competition in the wider sense. . . . [T]he many different views of the future held by independent operators cannot . . . be aggregated into a ‘common view.’ . . . [D]ecentralization of the forecasting function [is] one of the advantages of the market economy over the centrally-directed economy. . . . [It is] natural and desirable that the economy should work to a plurality of views, rather than to a single view of [the] future” (Lutz 1969, pp. 149–50, quoted in Nutter 1983, p. 118).

Trying to impose conformity on the market’s multitude of forecasts risks compounding errors. If, for instance, a central authority substitutes its own single five-year forecast of oil supply and demand for the variety of forecasts that individual decisionmakers would otherwise derive from their own observations and foresight, unnecessary wastes will occur. The very spread in mistakes distributed among independent forecasts, involving overlapping margins of error, would bring differential adjustments in expectations and behavior that would diminish average forecasting error over time (Nutter 1983, pp. 118–19).

The Example of a Price-Level Rule

Targeting on a price index exemplifies a relatively forecast-free and discretion-free policy (although other reforms might excel it in these respects). An unambiguous rule relieves the monetary authority of constantly reconsidering what weights to give to fighting inflation, resisting recession, promoting employment, stimulating growth, improving the balance of payments, making credit easy, aiding government finance, appeasing politicians, and pursuing other desired results. One clear objective is less difficult to attain when its possible rivals are out of the way, and the authority’s performance becomes easier to monitor. Private expectations can

⁴In not-yet-published papers, Roger Koppl sets forth the “big-players argument” concerning the disruptiveness of large-scale decisions and market interventions.

crystallize around price stability, which further facilitates the authority's task.

Criticisms, like the proposal itself, are old and familiar. Imbalance between money's supply and demand shows up in the target price index only with a lag. Further lags between index movements and policy responses and their impact might make those responses perverse and destabilizing when they took belated effect. But this difficulty would presumably plague a policy of sharp shifts, not a steady policy. Steadiness is easier in pursuing a single goal than multiple goals with changing weights. Like a good driver, the authority might make frequent small corrections instead of belated sharp swerves. Through continual diagnosis of price-level pressures—distinct from ambitious forecasting—the authority would try to avoid blundering off course. The authority might stay alert to incipient inflation or deflation signaled by industrial-production figures, exchange rates, interest rates and their term structure, and sensitive commodity prices determined in auction markets (Johnson 1988). These indicators should remain just that and not become rivals of the price-level target.

Watching sensitive commodity prices does not presuppose that they move dependably in parallel with the consumer price index; they do not. In the long run the two sets of prices drift apart under real as opposed to monetary influences. In the short run commodity prices are more volatile and respond more quickly to monetary disturbances (Boughton 1989, Marquis and Cunningham 1990). The latter contrast recommends commodity prices as a tool for diagnosing disequilibria that, left uncorrected, would in time inflate or deflate consumer prices and, in the deflationary case, would also temporarily shrink real activity.

A modified version of Irving Fisher's (1920) compensated dollar would further limit any authority's discretion, circumvent the problem of lags, and lessen the need for forecasts or even for continuous diagnosis. The authority would be required to maintain two-way convertibility between its money and whatever changeable amount of some redemption medium was actually worth, at current prices, the bundle of goods and services specifying the target price index. (More exactly, the bundle would *define* the dollar.) If the dollar always exchanges against just enough redemption medium (possibly gold, but probably securities) to be worth the bundle, then the dollar is worth the bundle itself. The authority's obligation to redeem its money in this way at the holders' initiative puts teeth into its commitment to a dollar of stable purchasing power. Private arbitrageurs and speculators, understanding the system, would reinforce this stability.

This solution to the question of *how* to implement a stable-price-level rule admittedly seems too simple to be genuine; but if so, I await seeing its flaw identified.⁵

Objections to Stabilization

Objections to stable money mentioned so far are really objections to more or less tacitly assumed *methods of implementing* the policy. Some modern “Austrian” economists, in particular, worry about “injection effects” of expanding the money supply even merely to keep the price level from sagging in a technologically advancing economy. Their well-known theory of the business cycle focuses on the consequences of falsifying interest-rate signals through monetary expansion. George Selgin (1990, pp. 277–81) stresses temporary widenings and subsequent painful narrowings of profit margins associated with delays in factor-price responses to spurts of productivity improvement under such a policy.

Arguments for price-level stabilization sometimes tacitly assume that gains in productivity come unanticipated. This assumption is usually inappropriate, Selgin suggests, as a basis for worry about how prices respond. Price-setters in directly affected markets will be alert to productivity improvements. Many will even have initiated them and will promptly pass cost cuts into prices. No pains demand avoidance through stabilizing the price level when productivity rises. Yet such a policy would expand money incomes, swelling profits temporarily unless it were perfectly understood and anticipated and promptly reflected in factor prices.

If productivity *falls*, monetary contraction to resist a rise in the price level shrinks nominal income and depresses profits. It discourages producers by making them bear “more than their fair share of the overall burden of reduced production”—until workers and other sellers of inputs belatedly accept painful cuts in wages and other factor prices (Selgin 1990, p. 279).

Avoiding abnormally high or low profits or profit expectations is more crucial to maintaining monetary equilibrium, Selgin insists, than price-level stability. Only under what he recommends as the “productivity norm,” whereby the price level varies inversely with overall factor productivity, does aggregate demand remain adequate

⁵Admittedly one might imagine a “paradox of indirect convertibility” plaguing a system in which money is redeemable not directly in the good or goods defining the dollar but only indirectly in some convenient medium of equivalent value. Knut Wicksell expressed such a worry in 1919. W. W. Woolsey and I believe that we have refuted misconceptions on this topic, along with clarifying genuine difficulties, in our article of 1992.

but not excessive for buying full-employment output at prices covering money costs of production. The productivity norm also avoids distorting interest rates away from their natural levels (Selgin 1990, pp. 280–81).

Ways of avoiding price deflation without monetary injections are mentioned toward the end of this paper—in case injection effects really are worrisome. Rather than repeat what I have said elsewhere on this issue, however, I turn to more fundamental issues.

Productivity, Equity, and the Price Level

Many economists have denied that a stable-valued money unit is desirable, even apart from the difficulties of achieving one. They go beyond acknowledging complaints about how unexpected price inflation or deflation redistributes wealth between creditors and debtors. Even the distributional effects of *stability*, especially in the face of changes in productivity, draw criticism. David Davidson (1906 and other articles listed in the references) invented hypothetical examples. Stable prices would keep a creditor from sharing in the gains from a general rise in productivity, while someone who had borrowed for productive purposes would unfairly keep the entire gain for himself. A rise in the productivity of land would tend to depress the prices of its products and so not unambiguously either raise or lower the value of the land itself. A monetary policy of stabilizing the product price level, however, would raise land's money value. A landowner who had leveraged his holding by debt would gain relative to a debt-free owner, which seemed unfair to Davidson.

Selgin (1990, pp. 273–75), resurrecting related arguments, contends that when the price level falls because of generally improved productivity, debtors do not suffer, since their real incomes rise along with the real value of their debts. All they miss is an opportunity to enjoy an undeserved windfall at creditors' expense. In the opposite case of an adverse supply shock, preventing a rise in the price level would require an unfair *contraction* of all nonfixed money incomes.

Such arguments about the distributional unfairness of stable prices seem weak in the context of a long-term productivity uptrend. Investors, lenders, business firms, and other borrowers will allow for expected productivity gains in interest rates, in equity participations in loans, in issue prices and other features of corporate stocks, and in innumerable other terms of their financial transactions.

Worry about unfairness from adverse supply shocks seems more plausible. If, however, the monetary system is credibly committed

to price-level stability even despite shocks, people will allow for their possibility in making contracts, including the mix of loan and equity elements in financial transactions. On this particular score, long-term loans will bear lower interest rates than they would in the absence of the price-level guarantee. In effect, long-term lenders pay an insurance premium for shock protection by accepting lower interest rates than if they bore the risk themselves. If an adverse shock does occur and creditors gain from a price level nevertheless kept stable, then they are in a position like that of a householder who “benefits” from having been insured (and having paid the premiums) when his house burns down. People and firms owing debts fixed in a stable unit of account do lose from an adverse supply shock, but they had presumably seen an advantage in borrowing at a lower rate of interest than they would have had to pay on loans denominated in a depreciation-prone unit; they are in the position of insurance companies.

To change the analogy, people who gain from holding claims denominated in a stable unit are in a position like that of stockpilers of oil who reap a “windfall profit” if an energy crunch occurs. In either case, do economists really recommend redistributing the gains and losses resulting from good and bad foresight and luck? (These are gains and losses judged relative to the distribution that would have emerged from a different course of events.) Do economists really recommend operating a monetary system to second-guess the parties to voluntary contracts?

A known and credible price-level policy at least provides a framework within which contracting parties can allow for contingencies as their own diverse circumstances, knowledge, and attitudes toward risk suggest. Can we really expect better results from centralized administration of foresight, risk-bearing, and their distributional consequences? The literature on rational expectations further suggests why the distributional case against stable money is a red herring.

Real and Monetary Influences on the Price Level

More narrowly economic considerations require closer attention. Critics of price-level stabilization sometimes agree about avoiding money-side disturbances but want to accord influences on the goods side their full natural scope. If rising productivity expands the supply of goods, a decline in prices is the natural response. Yet this distinction bears little weight. Growth in income and in the quantities of goods to be traded operates as much on the money side, expanding the demand for real cash balances, as it operates on the goods side.

I wonder whether the idea that money prices should reflect the “real” cheapening of goods in general does not rest on some inchoate illusion that money has a value of its own distinct from what it will buy. Earlier (Yeager 1988, pp. 271–72), referring to David Davidson (1906) and Benjamin Anderson ([1917] 1922), I said that these economists had tried “to distinguish, though not in a way intelligible to me, between the value of money and its purchasing power, the reciprocal of the price level.”

After further study of Davidson’s writings (listed in the references), I now think I see what he meant. Gustav Cassel had forthrightly identified changes in the general price level with changes in money’s value. A general rise in prices, Davidson objects, can reflect either a rise in the value of commodities or a fall in the value of money—or a rise in the value of both, with commodities gaining value in greater proportion, or a fall in the value of both, with commodities losing value in lesser proportion. Davidson (1923, p. 197) even presented a table purporting to show how much of the rise of prices in Sweden during World War I traced to an increased scarcity-value of commodities and how much to a decreased scarcity-value of money.

He accepted a real-cost theory of value and was even trying to improve Ricardo’s mainly labor-input theory.⁶ If increased productivity reduces quantities of labor and other primary factors necessary for a unit of output, then goods have really become cheaper, in Davidson’s view; and their prices, expressed in money of stable value, go down.

Without going into detail, Davidson hints at how to reconcile this real-cost doctrine, more or less, with a marginal-utility theory of value. If goods become more abundant than before, then, precisely in accordance with the principle of diminishing marginal utility, their marginal utility and value decline. If effects like those of a decline in productivity occur, as when Sweden’s international terms of trade worsened during World War I, then goods have higher marginal utility and greater scarcity value than before.

For money, too, lesser or greater scarcity (relative to population, as Davidson occasionally says) entails lesser or greater marginal utility and value. Davidson warned against losing sight of how the values of goods and money might separately be changing. Concern only with their ratios of value would be like concern only with how the ratio of the average heights of women and men had changed

⁶His article of 1919 addresses the theory of value in general, without special reference to money. It is a pity, says Thomas (1935, p. 47), that Davidson spent fruitless effort on revising classical value theory.

over some period, neglecting what had happened to the average absolute heights of women and of men (Davidson 1909, p. 12). To advocate money not of stable value of its own but of stable purchasing power as measured by some price index is as “metrologically absurd” as wanting to adjust the definition of the meter according to changes in the average absolute length of objects measured; it is like wanting a separate meter for children, shorter than the adult meter (Davidson 1922, p. 113).

Yet is it not true that all measurement is necessarily relative? There are no utterly absolute standards—are there?—of length or mass or value or anything else. Rising productivity cheapens some goods relative to others (notably, consumer goods relative to human effort), but it can hardly cheapen goods and services in general relative to goods and services in general. Each good’s price expresses its value relative to others when prices are quoted in a unit of stable general purchasing power.

Letting the price level reflect changes in productivity seems more plausible when specific goods, not general trends, are in question. Suppose that technological progress cheapens some particular good and so reduces the average price level slightly as a matter of mere arithmetic (Selgin 1990, esp. p. 275). This decline evidences no excess demand for money undergoing perhaps sluggish correction. By hypothesis, producers have cut the affected good’s price promptly and painlessly in line with its reduced cost. Its output presumably increases, perhaps along with outputs of other goods into whose production factors may have been released. The real volume of transactions to be lubricated increases and so does the associated demand for real cash balances. Money’s rise in purchasing power automatically accommodates that increased demand (but accommodates it only more or less, for only by extreme coincidence would the pattern of interrelated price and quantity adjustments and of income elasticities of demand for real balances make the accommodation exact).

If only one particular good were ever to become cheaper through technical progress, that fact would argue against choosing it to define the money unit. (If only gold production kept gaining in technical efficiency, a gold standard would be inexpedient.) We would even want to omit that exceptional good from any bundle of commodities defining the unit or used to calculate a target price index. Rather than inflate other prices to stabilize the average, it would be simpler to let the price of the exceptional good fall.

More generally, whenever technical progress affects one good only, we might like its price to fall without disturbing any others. No unit is available, however, in which prices could behave that

way. Substitutabilities and complementarities in consumption and production and other aspects of general interdependence keep any single price from changing *alone*. It is pointless to wish for a unit with impossible properties (like one whose adoption, besides offering all plausible benefits, would also prevent drug addiction and sloth among secretaries).

It is misleading, furthermore, to consider goods affected by technical progress only separately, one by one. Pervasive contributions to productivity, including capital accumulation and gains in knowledge, affect broad ranges of goods over long time spans. Goods cannot all fall in price relative to each other. The operational question becomes not "Why inflate other prices when a single price falls?" but rather "Why not absorb what would otherwise be a general downward pressure on prices?" Why express money prices in a way that requires most of them to fall even though relative prices are changing in diverse ways? It seems counterintuitive to suppose that individual price changes would be fewer when they were negative on average rather than zero.

Selgin (1990, pp. 275–76), though not sharing my intuition on this issue, recognizes that no rigorous argument is available to settle it. How productivity gains may affect prices is far from straightforward, by the way, as Wicksell noted in 1909. Inventions or other developments promising to raise productivity may stimulate investment spending and so initially tend to raise prices. The question of the time pattern of productivity effects thus poses additional complexity for any notion of optimal responsiveness of the price level, as distinct from stability.

Productivity, Factor Prices, and Income Targeting

Considerations like Selgin's, perhaps along with Davidson-like notions of objective value, suggest defining the money unit by a bundle not of products but of labor and other primary factors of production. Davidson (1922) did have that idea, but practical difficulties recommended a rough equivalent to him—money managed to stabilize average nominal income per member of the population. David Glasner (1989, chap. 11) advocates money stabilized against an index of labor wage rates. While ideally preferring stabilization of money income per worker, Selgin (1990, p. 272) recognizes stabilizing per capita income as a practical approximation. That policy would come close to his productivity norm, making an adequately flexible price level vary in roughly inverse proportion to average productivity.

As Selgin (1990, p. 282) recognizes, his proposal loosely resembles currently popular ones for targeting monetary policy on nominal income. These proposals do not envisage fixing income per person, however. Instead, total nominal income or gross national product (GNP) would trend upward at a rate thought consistent with average price stability over the long run. Bennett McCallum (1987 and 1989, chap. 16) explains a rule aiming at this result. Michael Bradley and Dennis Jansen (1989) describe nominal-GNP targeting as a straddle between price-level and real-output targeting, the latter being quite inappropriate for reasons one hopes are familiar. Nominal targeting would tend to stabilize "real GNP at its natural rate of output," and "automatically, without monetary policymakers having to know what the natural rate of output actually is" (Bradley and Jansen 1989, p. 40). James Hoehn (1989) claims further advantages for that policy.

The advantages of targeting on nominal GNP arguably extend to supply shocks. In McCallum's version, an automatic-feedback rule avoids reliance on episodic forecasting. Like any reform, however, such a rule implies a prediction of its operating properties, which implies a forecast about the economic environment and its interaction with features of the proposed institution.⁷

Several points seem to count against nominal-GNP targeting. First, the target is conventional, constructed, less continuously available, more subject to delays in reporting, more open to revision, and less directly observable by the ordinary citizen than prices. (The underground economy contributes to inaccuracy.) A price index or the total price of a specified commodity bundle has its conventional and constructed aspects, too, though in lesser degree; the ordinary citizen has a more nearly direct view of prices than of GNP. Second, by its nature, the GNP target must be pursued by a central monetary authority, which must be concerned with financial innovations that might loosen its control over its target. Alternative reforms could give freer rein to financial innovation. Third, centralized GNP targeting lacks the discipline of competition that would operate under private-enterprise-oriented reforms. It is easier for a central monetary authority to miss its targets by a little and eventually by a lot without coming under direct corrective pressure.

Adversity

Perhaps the most embarrassing case for advocates of stable money is a sharp drop in productivity or the equivalent—a supply shock

⁷Compare Viner (1962) on the long-run forecasting unavoidable in formulating any rule.

worse than the oil shock of 1973–74, a war, or some other calamity. Such a shock is vividly imaginable in a small, economically specialized country depending on imports paid for by one or a few export products. The country is vulnerable to worsening of its terms of trade or, say, to failure of a major export crop. If a severe loss of income and wealth must be quickly allocated over its population somehow or other, an inflationary tax on cash balances and nominal incomes can hardly be ruled out a priori as a one method.⁸

Suppose, furthermore, that the shock directly raises some specific prices and others closely linked with them. The pattern of relative prices suffers initial distortion, which obstructs market-clearing. Mechanically, arithmetically, the average price level rises. Total real money balances shrink, and with them the volumes of transactions, production, and employment they can support. Trying, nevertheless, to hold the average price level steady by tightening the money supply to restrain the rise of the most directly affected prices and to strengthen downward pressure on other prices would worsen this recessionary shrinkage of real money balances.

An opposite policy might seem more sensible—resisting unemployment by partially restoring real balances through monetary accommodation of the inflationary shock. In the long run, it is true, such monetary accommodation would be unnecessary. Market pressures would in time overcome price and wage stickiness and would achieve declines in other prices averaging out the upward shocks to particular prices; maintaining the steady target price level would prove compatible with market-clearing. In the meanwhile, however, the economy would have suffered exceptional unemployment. Perhaps it would be reasonable, after all, to try to mitigate this consequence by tolerating and even monetarily ratifying the shock-imposed initial “arithmetical” rise of the average price level, at least temporarily.⁹

I see no logical or factual error in such a case. I even think it provides the strongest argument available against the goal of stable money. A valid argument is not necessarily decisive, however; other arguments may well pull the other way. An abandonable goal of price-level stability would less fully enlist the support of private expectations than a firm goal would. How sticky the “other” prices (and wages) are that would have to decline to average out the shock-

⁸Such cases apparently persuaded Wicksell, toward the end of his life, to qualify his call for a stable price level (Uhr 1962, pp. 300–305).

⁹This case for allowing temporary departures from a price-level target is a main theme of Hall (1986).

imposed rise of specific prices is surely not independent of the policy rule and related expectations. A policy of accommodating price-raising shocks would increase people's reluctance to cut these other prices and wages that would otherwise come under downward pressure. (Why cut a price or wage if monetary expansion is likely to make the cut unnecessary?) A policy of accepting and supporting a shock-induced rise in the price level would thus worsen the very stickiness that seems to recommend that policy. A firm and credible commitment to a stable price level, on the other hand, would encourage price-setters and wage negotiators to yield to market pressures for market-clearing adjustments; and these responses would hold down the unemployment costs of price-level stability.

Worry about shocks applies less to a large, diversified country than to a small one, especially if a long-term productivity uptrend affords scope for absorbing moderate shocks through mere temporary slowdowns or interruptions in the growth of nominal incomes at a steady price level. A large, growing economy enjoys insurance, so to speak, from the law of large numbers: While at any time a few of its sectors may be suffering adversity, many other sectors are likely to be prospering.¹⁰

No such considerations amount to claiming that any country's institutions can be made invulnerable to calamities. They cannot. Institutions should be chosen to serve and improve the relatively normal conditions in which they have a good chance of flourishing. Shaping institutions for the worse conceivable cases instead is perverse and reminiscent of the maximin criterion for income distribution recommended by John Rawls (1971).

One might even argue that stable money provides a better starting point for government borrowing and money issue in rare emergencies than money commanding little confidence in the first place. Such an argument was made in the late 19th century for putting Russia's floating paper currency onto the gold standard.

Choice among Institutions

One general point demands emphasis. Ingenuity can produce innumerable particular cases in which price-level stability—like any other monetary rule or regime—brings results deemed inferior, on the specific grounds considered, to some alternative rule or regime tailored to the specific circumstances of a particular economic sector at a particular time. Yet monetary regimes can hardly be installed

¹⁰Some considerations cited in the theory of optimum currency areas evidently also apply to choosing monetary institutions for an area taken as given.

and altered to serve specific cases. Fundamentally, economic policy means choosing and modifying *institutions*—the rules and constraints within which individuals, families, firms, and government agencies act (Vining 1984). Policymakers have no direct handle on outcomes—prices, allocation of resources among different lines of production, geographic distribution of productive activities, patterns of employment and unemployment, and distributions of income and wealth.

For monetary regimes, the basic institutional choice concerns the unit of account—the unit in which prices are set, accounting conducted, costs and benefits estimated, and contracts drawn. Is the unit to be some particular commodity or composite of commodities, perhaps chosen for the expected behavior of its value relative to goods and services in general? Or is the unit to be some fiat currency whose value depends on its scarcity relative to the demand to hold it, a scarcity regulated by a monetary authority?

Adopting a fiat currency as unit of account implies choosing some principles for its management, but that adoption still cannot achieve some detailed pattern of economic outcomes. Of course, one may join Davidson in thinking up particular constellations of circumstances and propounding ethical judgments according to which fairness between debtors and creditors or among other groups might better be served by a fall (or rise) of the price level than by its stability. If, however, the balance of considerations favors institutions achieving monetary stability over alternative institutions, then it is simply irrelevant to think up particular cases in which some other price-level behavior might seem preferable. Institutions and rules cannot be switched on and off from case to case. It is unreasonable to expect a monetary system to achieve all sorts of good results, including economic justice as each person understands it, in the face of multifarious changes in conditions. Theories of rational expectations cast further doubt on the idea that the choice of monetary regime can reliably influence real economic outcomes, such as the distribution of real income and wealth.

No single set of institutions has advantages only, free of any disadvantages. Tradeoffs are unavoidable in institutional choice. Unwillingness to face them is paradoxical among economists, whose subject's most basic fact is the impossibility of having all good things at once.

A monetary system should do what it can reasonably be expected to do, leaving other institutions to undertake tasks more suitable for them. A stable unit of account at least facilitates economic calculation, planning, and contracting. As for fairness, savers need not

restrict themselves to buying interest-bearing securities of fixed nominal value. They can try to take account of prospective changes in productivity in various industries by investing in equities. They can diversify their asset portfolios, directly or through mutual funds. Their portfolio choices can express their different degrees of willingness to bear risk. Business firms can raise funds not only by borrowing in nominal terms but also by obtaining loans with equity participations or by selling stock. A sound monetary system improves such opportunities by facilitating financial intermediation and innovation.

As a gesture toward completeness, we should briefly note some further leading arguments for and against a stable unit of account. No one argument, by itself, is decisive, and some arguments are disputed. First, inflation adds "noise" to nominal prices, it degrades the information they contain, and inaccuracies in price comparisons cause allocational inefficiencies (Gavin and Stockman 1988). Unpredictable, "ragged" inflation, especially, undermines economic calculation and long-run planning. The savings-and-loan mess provides an example. One aspect is that S&Ls found themselves locked into long-term assets at the old nominal interest rates of times before inflation speeded up. More generally, unexpected inflation and accelerations and decelerations redistribute wealth capriciously. Second, inflation interacting with the tax system and its depreciation rules distorts production and investment. Third, efforts to avoid losses of purchasing power on money and other dollar-denominated assets require spending real resources to keep down the size of these holdings. These efforts also breed new financial institutions and instruments that would otherwise be inefficient and unprofitable. Politics interacts with financial innovation, regulation, and deregulation in determining the details of the changes made. Fourth, by targeting on the price level and quickly moving to reverse any changes in it, policymakers would gain credibility and reduce uncertainty (Gavin and Stockman 1988; compare Bryan 1990).

Among other arguments against stable money besides those invoking adverse supply shocks, probably the one most commonly met nowadays does not actually condemn price stability; instead, it stresses the pains of squeezing a long-entrenched inflation out of the economy.¹¹ The desirability of a goal and possible difficulties of

¹¹Rao Aiyagari (1990) exemplifies an excessively narrow view of the costs of inflation. Briefly, he classifies them merely as the "shoe-leather" costs of keeping cash balances smaller than otherwise, overtaxation through underdepreciation, and confusion between changes in the price level and in relative prices. He overlooks the importance of a dependable unit of account for economic calculation and long-term planning and contracting. He does not identify, for example, the ways in which current disasters in the financial sector trace to past absence of such a unit. He overlooks various costs of

attaining it are, however, distinct topics. Furthermore, inflation as we know it is bound to occur at fluctuating rates: Relative disinflation from time to time, along with its actual or supposed pains, is unavoidable anyway. Steady inflation is a “mirage” (Okun 1971 and 1981, pp. 283–84). Relatedly, a policy of keeping inflation steady at a positive rate is not credible and so can hardly serve as a focal point of private expectations, whereas there *is* something special about a rate of *zero*.

The Unit of Account and Free Banking

Rejecting price-level stability means rejecting a unit of account defined by a bundle of goods (and services), whether defined directly or defined indirectly through targeting on a price index.¹² What unit of account, then, does the critic recommend instead? The case is weak for a unit defined by gold or any other single commodity.

Anyone recommending some sort of productivity or money-growth or nominal-income rule—or, at the extreme, recommending the discretionary monetary actions deemed best case by case and day by day—must envisage application of the rule or exercise of discretion by a central authority equipped with the necessary powers. This means—unless I am committing some gross oversight—that the unit is nothing more definite than a unit of government fiat money man-

trying to cope with inflation, including the diversion of resources into seeking and providing supposed inflation hedges.

¹²An exception is barely conceivable. At the present stage of discussion, however, possibilities of bypassing some difficulties of a stable price level while giving the unit of account a commodity-bundle definition seem worth only a footnote. The bundle of goods and services defining the unit or the target price index might be specified with a variable composition in the first place. “Outliers” might be removed automatically: Those particular goods bearing a specific aggregate weight in the bundle whose prices had risen most (and possibly, also, those whose prices had fallen most) over the previous x months might drop out of the bundle. While the price level of this variable bundle would thus remain steady, the broader price level would be allowed to rise to accommodate adverse supply shocks (and perhaps, also, to fall when supply developments were favorable).

Just conceivably, one might define the dollar as a certain (very small) fraction of nominal GNP, with the amount of redemption medium into which a one-dollar note or deposit is indirectly convertible being suitably adjusted. Since nominal GNP depends on conventions of definition and measurement and is not directly and continuously observable and since such an approach requires a specific though growing total quantity of money, it is unclear whether the approach could be made compatible with competitive private issue of money and spontaneous adjustment of its total quantity. Credibility would be hard to achieve, furthermore, for a flexibly or complexly defined unit. The idea of an adjustable unit or price-level target opens a can of worms, some of them political. Still, some such ideas (largely due to W. W. Woolsey) may be worth further thought.

aged, one hopes, in some satisfactory way. That choice of unit leaves the monetary system vulnerable to the government abuses to which the historical record testifies. It precludes a nongovernmental monetary system.

Choice of a commodity-defined unit of account, on the other hand—preferably one defined by a comprehensive bundle of goods and services—makes possible free banking as envisaged in several current proposals. Rather than again describe a proposal by Robert L. Greenfield and me, I'll simply liken it to Irving Fisher's compensated dollar of 1920 modified as mentioned earlier in this paper and further modified by placing the issue and redemption of money on a decentralized, private, and competitive basis.

Under such a system, the unit of account has its value determined quite otherwise than by supply of and demand for money, whether base money or media of exchange more broadly conceived. No authority ever has to "inject" money into circulation (or sometimes withdraw it) to make its supply match the demand for it at a level compatible with a price-level target or any other principle of monetary management. The supply of money (however exactly money might be defined), as one aspect of the supply of financial-intermediation services, accommodates itself to the demand for it at the stable price level corresponding to the definition of the unit of account. The supposed problem of "injection effects" mentioned earlier is simply bypassed.

Bypassed also is any need for central forecasting. Any forecasting tasks that remain are dispersed among competing private money issuers and speculators. Speculation, along with the indirect convertibility of money and the operations of clearinghouses and arbitrageurs, keeps the commodity-bundle definition of the unit of account operational. "Macroeconomic entrepreneurs," as one might call them, will gather information about current or foreseeable aggregate demand and supply shocks and use it in their transactions in securities and other assets. Their activities will help determine market interest rates and a quantity of money consistent with the independent definition of the unit of account.¹³

Conclusion

"How would you define the unit of account?" Persons who reject a unit of stable purchasing power and dream up cases in which

¹³Woolsey and I spell out this admittedly cryptic claim in our 1992 manuscript. Here I merely insist that government fiat money precludes this sort of decentralization and competition.

change in the price level would be preferable should have their noses rubbed in that question. What definition of the unit of account would make the price level behave as they deem optimal? Usually, I conjecture, those persons are at least tacitly envisioning the unit of a fiat medium of exchange ideally managed by a governmental authority. Such people would solve monetary problems by assigning them to a philosopher-king.

Ideally managed government fiat money is beguiling. Each person can imagine its being managed as he deems best for each imagined set of circumstances. Apart from this chimerical aspect, the sorry history of government fiat money, now reinforced by public-choice theory, makes it doubtful that sound management would endure.

Fiat money managed to satisfy some macroeconomic criterion—its total or per capita quantity, total or per capita nominal income, a productivity norm, or whatever—precludes decentralizing and privatizing the issue of money. Free banking, however, could operate on the basis of a stable unit of account defined independently of any particular medium of exchange and instead defined by a comprehensive bundle of goods and services. The pressures of competition—competition from which a government monetary authority is exempt—would impose discipline on private money issuers, forcing them to keep meaningful the denomination of their bank notes and deposits (and checks) in the stable, independently defined unit.

Besides having other advantages, such a system would radically reduce the need for forecasting (whereas ambitious forecasting is necessary for ideal management of government fiat money, though less necessary for management bound to a price-level rule than management accorded greater discretion). Any forecasting functions that did remain would be healthily decentralized under free banking. Privatization of money seems to me, then, an attractive route toward forecast-free monetary institutions.

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ON FOOT-LOOSE PRICES AND FORECAST-FREE MONETARY REGIMES

George A. Selgin

The Choice of Monetary Regimes

Leland Yeager says that predictions about human affairs can seldom be accurate. True as this may be in general, it did not stop me from anticipating parts of his paper. I expected new arguments in defense of his favorite scheme for price-level stabilization, and that is what I got.¹ Nor do I believe that my forecasting ability is unique; Yeager is unlikely to be surprised by much of what I intend to say in reply. Perhaps one or both of us is guilty of having rigid beliefs, or at least of having beliefs that adjust “sluggishly.”

Unfortunately for the conduct of monetary policy, the folks at the Federal Reserve cannot rely on any similar rigidity in the social world. For this reason, I fully concur with Yeager’s suggestion that our present forecast-dependent monetary regime should be replaced by some forecast-free alternative. The question is “What alternative?” Yeager champions a particular stable price-level (\bar{P}) regime; I, in contrast, have argued for a “productivity-norm” or stable money-income (\bar{MV}) regime. Much of Yeager’s paper is devoted to showing that his favorite regime is better than my favorite regime.

Actually, I may be the only living proponent of an \bar{MV} regime. Sweden’s David Davidson, the only other \bar{MV} -regime advocate mentioned by Yeager, died long ago. It seems, therefore, that Yeager has employed a sledge hammer to swat a fly. But has the fly been swatted? I say it has not. For although Yeager succeeds here and there in showing that an \bar{MV} regime is not under all circumstances clearly superior to a \bar{P} regime, he fails to provide a single instance in which

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¹Admittedly, I had some inside information in the form of an earlier manuscript by Yeager containing some of the same arguments as the paper published here.

it is definitely worse. Since Yeager admits that a \bar{P} regime is inferior to an $\bar{M}\bar{V}$ regime in at least one circumstance, the $\bar{M}\bar{V}$ regime must actually be the better of the two all around.

A Price-Level Regime versus a Stable Money-Income Regime

Consider how the score unfolds swat by swat. Early in his paper, Yeager refers to my argument that an $\bar{M}\bar{V}$ regime stabilizes aggregate demand while avoiding abnormal profits or profit expectations in the face of productivity changes. Yeager offers no rebuttal, but says he will suggest “ways of avoiding price deflation without monetary injections” and associated profit effects at the end of the paper. In fact, he never does show how prices can be kept stable in the face of improvements in productivity without some boost to nominal spending and (short-run) profits. If output prices are to remain constant as productivity improves, input prices have to rise. This rise will, assuming constant velocity, require an increase in the money stock. Score: fly 1, hammer 0.

Distribution Effects

On the matter of equity or distribution effects, Yeager wonders whether economists ought “to second-guess the parties to voluntary contracts.” He forgets that it was \bar{P} people (not including Yeager himself, though) who first diverted the hunt for sound policy with this ethical “red herring.” $\bar{M}\bar{V}$ advocates, starting with Davidson, were merely responding to \bar{P} advocates in pointing out that equity considerations provide no stronger argument for \bar{P} than they do for $\bar{M}\bar{V}$. They also argued, “plausibly” in Yeager’s opinion, that adverse supply shocks would be painful (if not “unfair”) under a \bar{P} regime, because such a regime would require a contraction of money incomes matching the contraction of real income to keep prices from rising. Yeager’s reply, that borrowers could “allow for the possibility” of shocks by insisting on lower interest rates as a kind of shock “insurance,” ignores the fact that such “insurance” must normally entail a lower level of lending, which some would be inclined to view as costly to society. In that case, the insurance argument amounts to a tacit admission that a \bar{P} regime would be inferior to an $\bar{M}\bar{V}$ regime, since the latter would make shock insurance unnecessary. However, because all of this is alleged to be beyond the purview of value-free economics, we will call the outcome a draw. The score is still fly 1, hammer 0.

Money-Price Adjustments

Although Yeager admits the “plausibility” of arguments for \overline{MV} instead of \overline{P} when changes in productivity involve “specific goods,” he finds the same arguments unconvincing when “general trends” in productivity arise. In that case, he argues, “Goods cannot all fall in price relative to each other.” Therefore, he asks, “Why not absorb what would otherwise be a downward general pressure on prices” by expanding the money stock? The answer is that, when productivity is generally improving, the prices of goods must fall relative to the prices of factors of production (e.g., wage rates). Then, if downward movements in goods prices are to be “absorbed” by additions to the money stock, factor prices will have to rise: When productivity is changing, to stabilize output prices is to destabilize input prices. So it is by no means evident that a \overline{P} regime would require fewer overall money-price adjustments than an \overline{MV} regime, even in the extreme case where technological progress is all pervasive. Score unchanged.

I doubt whether citizens really have, as Yeager states, “a more nearly direct view of prices than of GNP,” if “prices” refers to prices of goods in general (stability of which is the real object of a \overline{P} regime) and not just to prices in a narrow commodity bundle (which, after all, is just a proxy). But even if the price level is more directly observable than the level of GNP, why is this an argument for \overline{P} as opposed to \overline{MV} ? It seems to me that the goal of policy should be, not to offer the public a display of stable prices, but to ensure that price-level movements that do occur reflect genuine changes in scarcity, so as to keep production levels as close to their natural rates as possible. This is what an \overline{MV} regime would accomplish. If some consumers are bothered by natural-rate, price-level changes, it is only because economists have managed to delude consumers into believing that changes in the consumer price index (CPI) are more serious than changes in other price indexes.

Adverse Supply Shocks

Yeager focuses on adverse supply shocks, which he admits constitute the most “embarrassing” case against a \overline{P} regime. The problem is that to keep the price level from rising as productivity declines, the money stock and nominal income must be contracted. Yeager sees “no logical or factual error” in this criticism; he even admits that a positive monetary stimulus to raise money income and the price level “might seem more sensible” in the event of an adverse supply shock than a \overline{P} policy.

What, then, is Yeager's reply? An accommodative policy, Yeager argues, would merely encourage producers to adopt rigid price policies. "Why," he asks rhetorically, should anyone "cut a price or wage if monetary expansion is likely to make the cut unnecessary?" Yeager's argument is invalid on two grounds. First, it attacks the straw man of "accommodative" monetary policy, erected by Yeager himself. Under the standard assumption of a unitary income-elasticity of demand for real money balances, an \overline{MV} policy in the face of an adverse supply shock would (unlike an accommodative policy) not require any monetary expansion. Second, the argument proves too much, for if the goal is really to encourage price flexibility, neither a \overline{P} regime nor an \overline{MV} regime is ideal. A \overline{P} regime encourages rigidity of output prices, whereas an \overline{MV} regime encourages rigidity of factor prices. If we are to really encourage all-around price flexibility, we need a regime that is either highly inflationary or highly deflationary, as well as erratic. In other words, precisely the sort of regime that Yeager abhors. Score: I am tempted here to award the fly another point; but as the arguments just considered have to do with the issues similar to those discussed at the beginning of my comment, I will let the score remain at fly 1, hammer 0.

Yeager argues that to shape monetary policies and institutions "for the worst conceivable cases" (like adverse supply shocks) would be "perverse." But this view is true only if the chosen policies and institutions are inferior to other alternatives under more "normal" circumstances. An \overline{MV} policy is (Yeager here again tacitly admits) superior to a \overline{P} policy in the "worst case" of an adverse supply shock. He fails to note, however, it is no worse in any other case, so that it is not, after all, designed to serve just one "specific circumstance." Yeager states, "If . . . the balance of considerations favors institutions achieving monetary stability [meaning \overline{P}] . . . then it is simply irrelevant to think up particular cases in which some other price-level behavior might seem preferable." I quite agree, except that the balance of considerations—as revealed by our scoreboard so far—seems to favor institutions achieving \overline{MV} , not \overline{P} . Score: still 1–0.

Compatibility with Free Banking

Yeager thinks that a \overline{P} policy is compatible with free banking, whereas an \overline{MV} policy "must be pursued by a central monetary authority." I have argued (Selgin 1988, chap. 5, and 1990) that a free-banking system would automatically tend to stabilize nominal income. Among the requirements for this are (1) that the stock of base money be frozen or subject to gradual augmentation only and

(2) that bank money (notes and checks) replace base money in payments apart from bank clearings. Historical gold-standard, free-banking systems like those of Scotland and Canada came close to meeting both requirements, but were prevented from fully meeting them by various legal restrictions. Thus, free banking seems to offer a practical and nongovernmental basis for implementing an \overline{MV} regime. On the other hand, there is no evidence that Yeager's distinct vision of free banking would automatically emerge as a spontaneous consequence of *laissez faire* (including shutting down the Fed). Yeager's scheme could happen if enough persons attach a high value to having money of roughly stable purchasing power. Personally, I believe most people, anticipating a positive productivity trend, would favor money issued by \overline{MV} -norm free banks over money issued by \overline{P} -norm free banks because the former money would provide a higher overall real interest return to its holders.² I am speculating, though, so the score does not change.

Eliminating the Need for Forecasting

Yeager claims that his version of free banking "would radically reduce the need for forecasting." But would it? Recall that, in his system, the unit of account is based on a manageable bundle of commodities; stability of the unit is supposed to serve as a proxy for stability of the general price level. The unit's success in this regard depends crucially on a proper choice of bundle commodities: Some commodity prices will more closely follow the CPI than others. Implicit in Yeager's scheme, therefore, is the need for bank managers to forecast accurately future commodity price movements so as to exclude "deviant" commodities from their chosen bundles. To fail to do so would mean disappointing customers who (presumably) desire a money of stable overall purchasing power. Alternatively, the bundle might occasionally be redefined, but this would necessitate costly renegotiations of the terms for interbank settlements involving payments of some single-commodity "indirect" redemption medium.³

²This conclusion assumes that some bank money in either kind of system will consist of notes bearing zero nominal interest.

³I am assuming here that competing bankers can offer distinct units of account, so that the medium of redemption is also the normal unit of account for interbank payments. Alternatively, the government could define and redefine a unit of account to be used by all banks. Such a monetary system would not, however, be truly "nongovernmental." It would also be vulnerable to public runs for the medium of redemption whenever the public anticipated a devaluation of the unit of account in terms of the redemption medium. On this point, see Glasner (1989, p. 233).

Perhaps the problem is not so serious as I imply—it may be that a narrow bundle that accurately tracks the CPI for a long period is easy to discover. Past experience, though, is not reassuring. A few years ago Robert Greenfield and Yeager (1983) endorsed Robert Hall's (1983, p. 115) suggestion of a bundle consisting of specified quantities of aluminum, copper, plywood, and ammonium nitrate. Hall chose this bundle, which he dubbed the ANCAP, "after studying the relation between the cost of living and the prices of a long list of suitable commodities." Alas, soon after Hall made his suggestion, the ANCAP and the CPI began to quarrel and then parted company for good.⁴ This outcome might have posed quite a challenge to any \bar{P} -norm banker who, in 1983, elected to peg his money to the ANCAP.

An $\bar{M}\bar{V}$ -norm free banker would have no similar worries. Like any banker today, he would have faced some forecasting requirements concerning the future earnings of borrowers and the monetary preferences of the public, but he would not have needed to forecast or even think about the value of $\bar{M}\bar{V}$ to help stabilize that value. All he would have had to do was to keep his reserves at their profit-maximizing levels. Stability of income would have resulted automatically as an unintended consequence of his and other free bankers' profit-maximizing behavior.

Final score: fly 2, hammer 0.

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⁴Unpublished statistics were provided by Fernando Alverez of Fairleigh Dickinson University.