

Chapter 12

A FREE-MARKET POLICY TO STABILIZE THE PURCHASING POWER OF THE DOLLAR

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Nothing better illustrates the need for wholesale monetary reform than the sorry history of rising prices and unstable interest rates over the past two decades. Successive episodes of extreme monetary restriction and sky-high interest rates have failed to halt the downward slide in the purchasing power of the dollar. But the picture is brighter for the microeconomic aspects of monetary policy. A commendable move toward deregulation of financial markets began recently. The monopoly power of banks has been moderated by extending the right to offer checking accounts to savings banks and others. Burdensome regulation of interest rates is gradually being lifted. All of this is to the good. Deregulation of banks and their competitors is desirable for the same reasons that deregulation of airlines is desirable—more people get more services at lower prices.

Much remains to be done by way of financial deregulation. Barriers to entry in financial services will remain even after the process already set in motion is complete. For example, Sears Roebuck ought to be free to provide checking accounts and other services whenever and wherever its customers want, but it cannot today and will not be able to in the future under existing legislation. Sears should be free to sell interest-bearing notes in small denominations as well, as they have proposed several times. Every time, they have been thwarted by federal regulators.

Both past experience and forthcoming deregulation make clear the futility of a monetary policy founded on the principle of stable growth of some measure of the money stock. Past measures of the money stock were artifacts of federal regulations. As the regulations disappear, these measures become meaningless. Some monetarist adherents of money growth rules have gone so far as to suggest arresting or even reversing financial deregulation solely for the purpose of retaining a meaningful money stock. They elevate the arbitrary principle of constant money growth above the basic micro-economic principle of efficient free markets.

Even in an economy where regulation makes a money growth rule meaningful and feasible, it is bad policy. Stable growth of money does not bring the desired stability of prices and interest rates. Ever since the government began collecting data, the relation between the money stock and total economic activity (as measured, say, by the dollar volume of GNP) has shifted unexpectedly from month to month and year to year.¹ With a fixed money stock, every time the public wants to hold a little more money, interest rates shoot up and real activity declines.

The Federal Reserve was created precisely with the idea that it would accommodate shifts in money demand. The panic of 1907, which occurred in a system of partly fixed money, convinced Congress of the need for a more elastic money. They created the Fed and gave it the power to issue more money as required by the economy. Unfortunately, the Fed was not told how to decide when the economy really needed more money and when the injection would instead bring higher prices. An unhappy sequence of errors followed. In the Great Depression, the Fed watched inactively as the financial system collapsed instead of fulfilling its creators' intention of pumping in reserves when they were needed. Many less serious episodes of financial stress followed in the postwar years. The pattern of credit crunch and ensuing recession (or near-recession) became familiar from the repeated experiences of 1966-67, 1969-71, 1973-75, 1980, and 1981-82. On the other side, the Fed created excess money, with corresponding inflation, more or less continuously after 1964, except in the crunches.

The Federal Reserve has not been in the hands of fools in the past two decades. It was hardly unaware that monetary constriction brings recession and monetary expansion ultimately brings inflation. The Fed lacked any firm guidance on how to balance the two goals of stable real activity and stable prices. During most of the years of the transition to high inflation over the past two decades, the Fed has erred on the side of too low interest rates and excess stimulus. During crunches, it has made the opposite mistake. Though this diagnosis is widely accepted in retrospect, policy remains destabilizing because the Fed has not been given the appropriate operating rule to avoid problems in the future.

The only consistent advice on the principles underlying monetary policy has come from the monetarists, who tell the Fed to ignore everything that is happening in the economy and simply stick to a predetermined path for the money stock. Whatever monetary crisis this policy brings is just the cost of meeting the Fed's highest obligation, the sound dollar. The principle of blinding itself to interest rates and real activity has been elevated to an ideology recently by a school of hard-line monetarists advocating a thorough financial shakedown with sharply reduced real activity as the sure cure for inflation. The advice was followed at considerable cost in Britain in the late 1970s and early 1980s.

Is there a sensible free-market alternative to monetarism? Can we offer a simple operating rule to the Federal Reserve that meets the three goals of a stable price level, stable interest rates, and full financial deregulation? Or should we follow the monetarists in subordinating stable interest and deregulation in the hope that stable money growth will bring stable prices? I will argue in the rest of this paper that a well-designed free-market policy involving an adaptive setting of interest rates can bring more stable prices and much more stable interest than the monetarist prescription of steady money growth. As a free-market policy, it supports and encourages complete financial deregulation, a development that has brought confusion to monetarism. I will also argue in some detail that the adaptive interest rate policy is superior to the gold standard or other commodity standards as the basis of the monetary system.

1. John P. Gould and Charles R. Nelson, "The Stochastic Structure of the Velocity of Money," *American Economic Review* 64 (1974): 405.

THE GOVERNMENT'S POWER TO DEFINE THE DOLLAR

The government has the power to set forth a legal definition of the monetary unit. Though an economy can function reasonably well without a government-sponsored unit, history suggests that an economy gains from such a unit. Uniformity in quoting prices, maintaining accounts, and stating forward contracts has the same virtues as uniform standards for switching and transmitting telephone calls.² A government definition of a monetary unit need not involve any compulsion to use the unit. Further, private enterprise can provide all monetary assets and transaction services; the government need not intervene in asset markets or regulate transaction services. To create a monetary unit, the government must clearly state to the courts what action legally settles a debt stated in the unit. In today's economy, currency issued by the Federal Reserve is legal tender. Once a debtor conveys legal tender to a creditor in the prescribed quantity, the courts consider the debt settled. Nothing in the system requires that legal tender actually change hands. Rather, the creditor's right to demand legal tender establishes precisely how much purchasing power the debtor must convey to settle the debt.

Over the two centuries of U.S. independence, the government has exercised its power to define the dollar in two main ways.³ Starting in 1792, the dollar was defined in terms of quantities of gold or silver. In the late nineteenth century, the dollar was literally 0.0484 of an ounce of gold, though paper instruments of the government—namely, greenbacks—were also legal tender. With the establishment of the Federal Reserve in 1914, the dollar became defined in terms of paper instruments of the Fed. Conveying gold to settle a debt was actually made illegal in 1933, and the definition of the dollar lost all meaningful contact with anything but paper at that point.

In addition to the metallic and paper definitions of the dollar adopted by the United States at various points in its history, a third type of definition is available: One country can define its monetary

2. For an elaboration of this point, see Robert E. Hall, "The Government and the Monetary Unit" (Stanford University, 1981). (Processed.)

3. An excellent source on U.S. monetary institutions is James Willard Hurst, *A Legal History of Money in the United States, 1774-1970* (Lincoln: University of Nebraska Press, 1973).

unit in terms of the currency of a second country. The third technique is most appropriate for a small country. Until the destabilization of the pound sterling in the early 1970s, for example, Hong Kong simply defined its own dollar as a fixed fraction of a pound.⁴ Only very small, highly dependent nations have chosen to do this in the past decades, for it requires a complete abdication of national monetary policy. Canada, for example, might profitably declare the U.S. dollar as legal tender. Then it could dismantle its entire inefficient apparatus for regulating Canadian financial institutions and abolish the Bank of Canada. Canadian banks could create currency and checking accounts without limit, payable in dollars, but these dollars would be convertible on demand into U.S. dollars, which would unambiguously determine their purchasing power. The Canadian price level and interest rates would be determined in Washington, not Ottawa. Though Canada is highly unlikely to move in this direction, it is interesting that two nations with disastrous records in maintaining the purchasing power of their own monetary units—Israel and Uruguay—have permitted the development of extensive unregulated financial institutions based on the U.S. dollar. And dollar-denominated financial instruments other than currency and checking accounts are in widespread use throughout the world.

As the proprietor of the dominant monetary unit in the world today, the United States does not really have the option of defining the dollar in terms of other units. Were we to define the dollar as, say, two Swiss francs, with the hope of taking advantage of the extraordinary stability of that unit, we would probably destabilize the Swiss economy rather than improve our own. The world economy would best be served by stabilizing the dollar through some other method and then encouraging other nations to define their monetary units in terms of the dollar. A return to the Bretton Woods system makes good sense, provided the United States adopts the right technique for stabilizing the purchasing power of the dollar and limiting swings in dollar interest rates. The goal of stable interest rates is particularly important for international stability; recent research is unanimous in associating unstable exchange markets with unstable interest rates in the short run and unstable purchasing power only in the long run. The tremendous appreciation of the dollar in 1981 far

4. A concise history of the novel monetary institutions of Hong Kong appears in the *Asian Monetary Monitor* (July-August 1981).

outstripped anything justified by the meager progress against inflation made by U.S. policy; instead, it was the response to extraordinary U.S. interest rates.

A return to a gold definition of the dollar is under active discussion today. Though gold advocates favor a more roundabout way to establish a gold definition, the simplest approach would be a straightforward announcement that the dollar is one grain of gold. Then the dollar price of gold would be fixed at \$480 per ounce. But fixing the dollar price of gold has a fatal defect that I will elaborate on shortly: It stabilizes the purchasing power of the dollar in terms of gold, not in terms of the cost of living. Any type of gold standard invites wild fluctuations in the dollar cost of living.

The third option facing reformers of the U.S. monetary system is based, like the present system, on defining the dollar in terms of paper instruments of the federal government. My own review of the alternatives suggests that this is the way for free-market economists to turn for vast improvements in monetary policy. Bad management of paper money, not the idea itself, accounts for the sorry record of monetary policy in the past two decades. Further, paper money with stable purchasing power is fully consistent with complete deregulation of financial markets, including the abolition of reserve requirements and the lifting of restrictions on private currency. The value of government money need not rest on the monopoly power of the government.

MONETARY STABILITY WITH PAPER MONEY

The most basic problem in monetary policy is holding the price level approximately constant. A secondary problem is making the transition from positive rates of inflation to zero inflation. Though the transition issue is hardly unimportant today, I want to defer the issue until I have shown how we could maintain a constant price level once systematic inflation was squeezed out. At the most concrete level, the problem is the following. Every month, the Bureau of Labor Statistics gathers data and calculates the cost-of-living index. Suppose its value this month is arbitrarily set at 100. Next month, almost all the product prices in the index will change a little, and the index will be a bit above or a bit below 100. Monetary policy needs to move in the direction that pushes the price down if it exceeds 100 and raises

it if it falls short. Occasionally, when a sharp movement in the price level comes from oil, agriculture, or elsewhere, the corrective action may need to be more than a nudge. In short, we need to set up a monetary policy giving us a policy lever that can be pushed in one direction to lower prices and the other to raise prices. When the policy is in place, we will spend half the time trying to lower prices and the other half trying to raise them.

Now I will describe a set of monetary institutions containing precisely such a policy lever, namely, the interest rate on short-term government debt. The upshot of the analysis will be a suggestion that the Fed raise the interest rate whenever prices are too high and lower the rate when prices are too low.

The first essential feature of the new monetary institutions is to retain the paper money of the Federal Reserve as the unique legal tender along with its equivalent, reserve deposits at the Fed. I will refer to legal tender as the U.S. dollar, to distinguish it from dollar-denominated instruments issued by private businesses. Second, all restrictions on the issuance of dollar instruments are to be lifted. Existing banks can provide checking accounts, currency, and small-denomination interest-bearing notes in any volume they choose, and so can any other business, including Sears Roebuck. Transaction services and financial intermediation are to be opened up to competition for exactly the same reason that the airline industry was opened up. One restriction applies to everybody, a restriction that is in force already: Anyone promising to pay in dollars can be required to pay in U.S. dollars on the demand of the creditor. Demand instruments—currency and checking accounts—must be paid off immediately in U.S. dollars whenever the owner or depositor requests. Term instruments—anything promising payment on a prescribed date—must be paid off on that date in U.S. dollars if the creditor requires it. The requirement for payment in U.S. dollars exists today; I am only emphasizing the importance of retaining the requirement when any business has the theoretical right to issue its own dollars. American Express might well succeed in placing its own dollar bills in circulation, but nobody would be required to accept them as payment for debts. Only American Express's continuous, effective promise to redeem them for U.S. dollars would make them acceptable to the general public.

The new monetary system involves no required reserves. Reserve requirements in the current system are nothing more than taxes on

financial institutions and have no microeconomic justification. However, the requirement for payment in U.S. dollars will create a reserve demand for those dollars. Much of the demand will arise, as it does today, from banks and other institutions offering demand instruments like checking accounts. They must always be prepared for a significant bulge in requests for payment in U.S. dollars. Consequently, they will hold small positive stocks of U.S. dollars, just as banks hold a certain amount of vault cash and excess reserves in today's system. But most reserves will be held, again as they are today, in the form of very short term, interest-bearing instruments that offer easy conversion into U.S. dollars. Chief among these is the U.S. treasury bill. There can never be any doubt about the U.S. government's promise to deliver U.S. dollars when a treasury bill matures. Consequently, a portfolio of treasury bills offers an effective way to stand ready to pay off account holders in U.S. dollars without holding a significant stock of idle funds in actual dollars.

The reserve demand for treasury bills is substantial. It accounts for a treasury bill yield below the highest quality private short-term instruments of 0.5 to 2 percentage points. Commercial banks own about a fifth of all marketable federal debt outside the government; this is more than one dollar in treasury instruments for each three dollars in checking accounts.⁵ Reserve demand is not limited to banks. Treasury bills are held by businesses, brokers, and wealthy individuals in anticipation of the need to make payments in U.S. dollars. The recent development of mutual funds owning nothing but short-term treasury instruments is another sure sign of the importance of the reserve demand for these instruments and of claims on them.

The interest rate on treasury bills is under the direct control of monetary policy. Indeed, from the onset of World War II until 1951, monetary policy was conducted by pegging the bill rate at levels around 1 percent. Unlike the money growth targets prescribed by monetarists, interest rate targets are easily achieved and easily verified. There are no conceptual ambiguities in measuring bill rates and no conundrums created by deregulation. But as monetarists and virtually all other economists have noted, pegging interest rates can be terribly unstable and inflationary if the peg is badly chosen. Con-

5. See the *Economic Report of the President* (Washington, D.C.: Government Printing Office, 1981), table B-59.

ducting monetary policy by stabilizing the treasury bill rate requires a careful choice of the rule for choosing the target rate. A well-chosen rule will give close to an ideal monetary policy, satisfying all three criteria of stable prices, moderate fluctuations in interest rates, and full financial deregulation. The wrong rule invites a repetition of the experience of the 1940s.

Monetary policy controls the treasury bill rate through open-market operations. Whenever the Fed issues new U.S. dollars and buys treasury bills, the bill rate falls, and vice versa. There is simply no doubt about the Fed's ability to control the bill rate to within a small fraction of a percentage point. This remains true through sharp inflation or deflation, recession or boom, as the experience of the 1940s amply revealed. Unlike the monetarists, who face an uphill battle convincing the Fed that it has the power to control the money supply, and yet other economists who want the Fed to stabilize a measure of total credit or even total dollar output of the entire economy, advocates of interest-based policies are on firm ground in suggesting to the Fed that it do something that comes naturally. Moreover, the Fed will retain the power to set the treasury bill rate through any conceivable deregulation. Its power rests on the unique characteristics of the U.S. dollar and the treasury bill. As long as the Fed is the sole government agency capable of issuing U.S. dollars, it will have complete control over the treasury bill interest rate.

Control over the treasury bill rate confers control over the price level. This proposition is no more than an application of the very general principle of monetary economics, enunciated by Don Patinkin and James Tobin, that the price level can be fixed by controlling the dollar volume of monetary assets and the interest rate paid by those assets.⁶ Monetarism applies the principle by asking the Fed to fix the quantity of a narrow concept of monetary assets that pay an interest rate of zero. Though monetarism is a consistent application of the principle, it is not the best.

The best application takes a broad concept of monetary assets—namely, the total short-term debt of the federal government—and fixes its interest rate not far below the earnings of private investments. Further, it deliberately varies the interest rate to offset de-

6. Don Patinkin, "Financial Intermediaries and the Logical Structure of Monetary Theory," *American Economic Review* 51 (March 1961): 95-116; and James Tobin, "A General Equilibrium Approach to Monetary Theory," *Journal of Money, Credit, and Banking* 1 (1969): 15.

partures of the price level from the target level. In the long run, the Fed's choice of interest rate influences the price level inversely: High interest rates mean low prices and vice versa. For the moment, I will assume that the government deficit is held at low levels so that the total dollar volume of government debt grows only as fast as the total real output of the economy. If so, the rate of inflation will always be roughly zero, and the Fed chooses alternative price levels as it chooses alternative levels of the treasury bill rate.

If the Fed chooses a low interest rate—that is, a rate well below the rate paid by private investments—treasury bills will be financially unattractive as a way of holding reserves. Banks and other reserve holders will conserve on treasury bills as a form of reserves, holding relatively few bills per dollar of total assets or per dollar of total income in the economy. To accommodate the low real demand for bills, the real stock of bills will fall. Because the stock of bills is fixed in dollar terms, the fall in the real stock is accomplished by an increase in the price level, that is, a decline in the purchasing power of the stock of bills. In short, low interest rates mean high prices.

On the other hand, if the Fed chooses a high interest rate, close to the earnings of private investments, treasury bills will become an attractive way to hold wealth even apart from the reserve motive. There is no effective upper limit to the demand for bills; if they pay enough, they can compete with any of the several trillion dollars in total U.S. wealth. High demand for bills in real terms is accommodated with a fixed dollar volume of bills by a low price level, which expands the purchasing power of that fixed volume.

In the long run, control over the treasury bill rate gives the Fed control over the price level. Whenever the price level is a little too high, the Fed should raise interest rates, and whenever too low, it should lower them. In the short run, of course, prices do not respond immediately to the interest rate signal sent by the Fed. Instead, the interest rate set by the Fed for treasury bills strongly influences interest rates on all investments in the short run. A violent increase in interest rates wreaks havoc in many parts of the economy, notably in homebuilding, the auto industry, and investment in business plant and equipment. A gentle nudge from a moderate increase in interest rates has the same effect, in moderation. In the short run, a cautious increase in the treasury bill rate will limit demand for goods and services in many parts of the economy, introduce a little more slack, and take pressure off prices. As prices decline, real activity is gradu-

ally restored to its earlier level. By this mechanism, the economy will eventually reach the point of long-run equilibrium with a higher treasury bill rate, a lower price level, and full employment.

Now, I can be very specific about how the Fed should proceed. In the middle of every month, the Bureau of Labor Statistics reports the cost-of-living index. The Fed's target is to keep the index at 100. Each month, it should determine the treasury bill rate in the following way: For each percentage point by which prices are above 100, it should raise the bill rate over its level of the last month by a tenth of a percentage point. Similarly, for each percentage point by which the price level is below target, it should lower the bill rate by a tenth of a percentage point. If prices stay persistently above target from month to month (as they generally will after some inflationary impulse), this policy will gradually intensify the anti-inflationary pressure of higher interest rates. Eventually, the pressure will begin to work, prices will subside to 100, and interest rates will stabilize.

Everyone should understand that this policy controls prices in the long run but not precisely in the short run. Because it is cautious in using the influence of interest rates on the price level, it tolerates periods of a year or two when the price level is a few points above or below 100. The Fed is like the captain of a supertanker who makes cautious adjustments to the ship's course, knowing that the important thing is to make port, not to stay exactly on course. Wild swings of the rudder are pointless for a ship with a great deal of momentum and relatively little initial response to the rudder.

The major source of difficulty for monetary policy in the past decade has been inflationary shocks from primary materials—food and energy. In 1974, when the economy was just recovering from the agricultural debacle of 1972–73 and just beginning to absorb the impact of much higher oil prices, the Fed held the line on money growth and tolerated a tremendous increase in interest rates. Real activity collapsed at the end of 1974, and the economy entered its most serious postwar recession. Had an interest-based policy been in effect, the Fed would have reacted to the increase in demand for U.S. dollars in 1974 by accommodation in the first few months. The price level would have reached perhaps 3 to 4 percent above target by late 1974, but without serious recession. At this point, the Fed would have been raising the treasury bill rate by 30 to 40 basis points each month. As the restrictive effects of higher interest rates began to take hold, real activity would have declined gradually and prices

would have begun to return to their normal level of 100. Many of the more destructive events of 1974-75, including financial failures and the collapse of the stock market, would probably have been avoided. The period would probably still be remembered as a recession, but not as one so sharp and deep.

One of the many desirable features of the adaptive interest rate policy is its ability to find the appropriate level for interest rates in the long run. We do not know what level of interest rates would stabilize the dollar at its current purchasing power with the current volume of government debt, but we do know that the adaptive policy will find it. The policy is like the thermostat in a house. When the furnace is installed, the builder has only a vague idea how much fuel it will take to keep the house warm. But as long as the thermostat turns the furnace on when the house is a little too cool and off when a little too warm, the house will stay at the right temperature.

The monetarist opponents of adaptive policy take the position that monetary policy ought not to react to what is happening in the economy. By analogy, they would also recommend that home owners preset the amount of fuel burned in their furnaces and so boil on hot days and freeze on cold days. But hundreds of millions of very simple thermostats function perfectly in the U.S. every day, and the same principle could easily be applied to the management of the U.S. economy.

There remain two problems requiring further discussion. First, the total dollar volume of government debt is controlled by the spending and taxing policies of the federal government, not by the Fed. Government deficits bring inflation, in the sense that a higher level of debt brings higher prices unless interest rates are raised. However, monetary policy does not need to build in any special response to federal deficits. As a deficit raises prices slightly, the Fed will automatically respond under the simple adaptive rule to raise the treasury bill rate appropriately. Deficits are no threat to price stability. But the public should be made to understand that deficits bring higher interest rates.

Second, there is a substantial problem of the transition to stable prices. It would be irresponsible to put the adaptive interest policy into effect immediately to try to stabilize prices at today's level. The adaptive policy cannot overcome the substantial momentum of inflation any more than the captain of the supertanker can reduce the huge mass and lack of maneuverability of the ship. Rather, the cap-

tain formulates orders with the ship's characteristics in mind. In the same way, good monetary policy recognizes the facts of life. During the transition, we should adopt a target path of prices that phases out inflation at about 1 percent per year. Starting from, say, 8 percent inflation, the Fed should publish a trajectory for prices that does not reach price stability until eight years from the onset of the policy. This will give a monthly target level for prices, and the adjustment of the treasury bill rate should take place in relation to the monthly target.

So far, I have presented the justification for the adaptive interest rate policy on solid economic grounds. The basic principle that higher interest rates bring lower prices is sound monetary economics and is not disputed by any serious economist. The core of the argument in favor of the adaptive policy is this simple principle. But it is worth noting as a subsidiary element of the case that there is now a substantial body of scientific evidence giving another reason for stabilizing interest rates. Long-term asset markets appear to be far more sensitive to short-term interest rates than they should be according to received economic doctrine. The stock market falls much further under tight money and high interest rates than it should if stock prices are really the present discounted value of future corporate earnings.⁷ The same thing is true of long-term bond markets.⁸ The notion that these markets function according to expectations about the future has been rejected by a number of serious investigators. When President Reagan's economic advisers told him that the sign that his program was working would be high short-term interest rates but low long-term rates and a strong stock market, they were living in a dream world. Tight money regularly devastates the stock and bond markets, and recent experience is no exception. Weak stock and bond markets very seriously undermine incentives to invest and expand business operations. For this reason, the anti-inflationary tool of high interest rates needs to be used with caution.

Is government control over the interest rate on treasury bills truly a free-market policy? It should be clear that any application of the Patinkin-Tobin principle of controlling one nominal magnitude and

7. Robert J. Shiller, "Do Stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends?" *American Economic Review* 71 (1981): 421.

8. Kenneth J. Singleton, "Expectations Models of the Term Structure and Implied Variance Bounds," *Journal of Political Economy* 88 (1980): 1159.

one nominal interest rate represents a government intervention. It is a particularly benign intervention compared with the monetarist principle of strict control on the business activities of banks. It is even benign compared with the establishment of a metallic definition of the dollar, because the definition stimulates a reserve demand for a real resource. An interest rate policy with full financial decontrol may not be exactly a free-market policy, but it is closer than any alternative in which the government retains its responsibility for maintaining and stabilizing a common monetary unit.

THE GOLD STANDARD AND ITS RELATIVES

Disappointments with conventional tight money have produced an upsurge of interest in returning to a gold or other commodity definition of the dollar. Here I will appraise commodity-based monetary systems according to the three criteria established earlier: stability of the purchasing power of the dollar, stability of interest rates, and consistency with unregulated financial markets.

Let me start with the indirect gold standard proposed by Arthur Laffer and a number of other so-called supply-side economists.⁹ Under their proposal, the government would modify its policy in two ways. First, the U.S. dollar would be backed by a fixed amount of gold, perhaps 0.4 grains per dollar. Second, the government would stand ready to buy and sell gold at a fixed price, say, \$1 per grain (\$480 per ounce). The combination of the two moves would give the gold market control over the U.S. money supply—precisely what its advocates see as its advantage and its opponents as its danger. Discretion over the quantity of money would be eliminated. Under a threat of inflation and diminished dollar value, the public would trade in some of its dollars for gold and the money supply would shrink. In the short run, rising interest rates would halt the process. In the long run, inflation would ease, and the original threat would disappear.

The first defect of the indirect gold standard is its failure to come to grips with the microeconomic issues of monetary policy. It would retain the inefficient features of the current system, including reserve requirements and prohibition of many forms of competition with

banks. Further, as with the current system, every move toward deregulation would increase the price level. Good free-market principles would be unjustly tarnished by their association with inflation. For example, the elimination of reserve requirements would considerably reduce the demand for U.S. dollars. As the stock declined, gold would flow into the market. The purchasing power of gold would decline, and, with a fixed link between the dollar and gold, the purchasing power of the dollar would decline by the same amount. Because the U.S. monetary gold stock would be a substantial fraction of the gold available in the world market, this problem would present a serious restriction on the move to deregulate. Like their monetarist colleagues, advocates of the indirect gold standard would find themselves opposing the application of free-market principles to money markets.

A free-market variant of the gold standard is available; in fact, it is not too different from the system of the nineteenth century. Under this direct gold standard, the dollar would simply be defined as a certain quantity of gold, perhaps one grain. Anyone owed dollars could require payment in grains of gold. The right to be paid in gold would rarely be exercised. Instead, creditors would actually take payment in checks or other convenient forms of payment. The purpose of the gold payment requirement is to guarantee the purchasing power of the dollar in terms of gold. The market value of financial instruments payable in dollars could not drop below one grain of gold to the dollar, or their owners would immediately cash them in for their gold value. A promise to pay dollars is a promise to pay gold or to convey something else of equal purchasing power. Under this system, the purchasing power of the dollar becomes the same thing as the purchasing power of gold.

The other major flaw in the gold standard, direct or indirect, is fatal: The purchasing power of gold is so unstable that linking the dollar to gold would bring far worse instability of prices than anything ever seen in U.S. history.¹⁰ Even the nineteenth-century gold standard brought deflation and then inflation in amounts that cumulated to unpleasant changes in the purchasing power of the dollar. The gold standard dramatically limited inflation relative to experi-

9. Ron Paul and Lewis Lehrman, *The Case for Gold* (Washington, D.C.: Cato Institute, 1982).

10. See Robert E. Hall, "Explorations in the Gold Standard and Related Policies for Stabilizing the Dollar," in R. Hall, ed., *Inflation* (Chicago: University of Chicago Press, 1983).

ence during the Civil War or during the 1970s, but it did not completely stabilize the price level by any means. Over the period from 1880 to 1910, annual rates of inflation measured over five-year intervals varied from -1.3 percent per year in 1890-95 to 2.1 percent per year in 1905-10. There was continual, mild inflation around 2 percent per year from 1895 to 1910 because of shifts in the world supply of gold. Though annual rates of inflation never reached troublesome levels, the compounding of inflation year after year meant that the gold standard was quite ineffective in stabilizing the long-run purchasing power of the dollar. Between 1895 and 1912, the cost of living rose 40 percent. Forward economic arrangements made in 1895 were seriously dislocated by the surprising decline in the real value of the dollar over the ensuing two decades.

Recent turbulence in gold markets casts even more serious doubt on the wisdom of a dollar defined in terms of a fixed quantity of gold. Between 1968 and 1970, the purchasing power of an ounce of gold fell by 18 percent. Then its purchasing power rose by 350 percent to a peak in 1974, declined by 32 percent over the next two years, and then rose by 600 percent to another peak in 1980. Had the United States been on the gold standard over this period, there would have been considerable inflationary pressure in 1968-70, 1974-76, and 1981 and crushing deflation in 1970-74 and 1976-80. Because a U.S. gold standard might have stabilized the gold market over this period had we been on the gold standard, it is not accurate to say that the changes in the U.S. price level would have been as large as the actual changes in the purchasing power of gold, but large changes in the price level would certainly have occurred. The fixed gold standard is not the answer for price stability.

Proponents of the indirect gold standard have conceded the instability of the purchasing power of gold and have included vague exceptions to the operating rules so that the dollar price of gold could be raised or the gold backing of the dollar reduced when OPEC or other major influences drive up the world price of gold. But it is not at all clear that they have solved this central problem of the gold standard.

Two remedies are known for the instability of the purchasing power of gold: systematic adjustment of the gold content of the dollar to offset the instabilities and the use of a commodity or basket of commodities with more stable purchasing power than gold. Even better, the two remedies can be combined in an adjustable nongold commodity standard.

Elsewhere, I have described an example of an up-to-date commodity standard.¹¹ It defines the dollar in terms of a package of four commodities—ammonium nitrate, copper, aluminum, and plywood—whose combined purchasing power has been stable over the past thirty years. These are homogeneous, standardized commodities already traded in organized markets. A unit called the ANCAP would contain fixed physical quantities of the four commodities. Then the dollar would be defined as x ANCAPS; monetary policy would consist in choosing an x that would stabilize the purchasing power of the dollar. If strong demand for one of the commodities in the ANCAP threatened to raise the purchasing power of the ANCAP, monetary policy would reduce the ANCAP content of the dollar to head off the resulting deflation. If ammonium nitrate, copper, aluminum, or plywood became plentiful, inflation in dollar prices would follow unless the ANCAP content of the dollar were raised.

Though it might be satisfactory to tell the monetary authorities that it was their job to adjust the ANCAP definition of the dollar in order to keep the cost-of-living index as close as possible to 100, an alternative is to prescribe the operating policy along the lines suggested by Irving Fisher.¹² Each month, the number of ANCAPs making up a dollar would be raised by 0.1 percent for each percent by which the cost of living exceeds 100 or lowered by 0.1 percent for each percent by which it falls short. Here again, monetary policy is to act as a thermostat, keeping the cost of living at 100 by manipulating a policy instrument—the ANCAP content of the dollar—in the direction indicated by the most recent value of the cost of living.

In one respect, a commodity definition of the dollar is a free-market economist's dream. Monetary policy can be conducted by one person, who receives the cost-of-living index from the Bureau of Labor Statistics and then announces next month's definition of the dollar. All of the existing apparatus of the Federal Reserve could be dismantled. Regulation of financial institutions would be eliminated. Government intervention in money would be at its irreducible minimum.

Though a commodity definition of the dollar has substantial microeconomic advantages over the current system of monetary control, it does have an intrinsic flaw: When the dollar is defined in terms of commodities, people will accumulate stocks of those com-

11. *Ibid.*

12. Irving Fisher, *Stabilizing the Dollar* (New York: Macmillan, 1920).

modities purely because of their monetary role. The historical operation of gold standards has made this plain. When banks and other institutions are required to redeem their financial instruments in gold on demand, they will hold precautionary balances of gold. From time to time, the public will decide to move into gold and will find it easy to do so by redeeming demand instruments. Two major runs on gold occurred around the turn of the century in the United States. Not only does the possibility of a run make a bank hold substantial amounts of gold, but a run creates political pressure to suspend the gold definition of the dollar in the short run (which happened in both episodes) and to abandon the gold standard in the long run. Even when a commodity standard is functioning smoothly, the stocks of commodities held for monetary reasons are economically inefficient. These stocks tie up real resources in a function that could be served equally well by paper reserves.

According to microeconomic logic, each function in the economy ought to be provided in the least expensive way. But given political reality, politicians feel the need to do something whenever an economic crisis occurs, and the obvious solution to a run on commodity reserves is to suspend or repeal the commodity payment requirement. These two influences converge to make a commodity standard difficult to sustain. It would be far better, then, to start with a well-run fiduciary monetary system, where these problems cannot arise.

CONCLUDING REMARKS

The two major intellectual forces in the design of monetary policy—monetarism and the indirect gold standard—are on a collision course with basic microeconomic principles. Both rely on deep government intervention in financial markets in order to create a well-defined stock of money, which is then made to grow smoothly or is regulated by its relation to the gold stock. Though a free-market version of the gold standard could be created, it—along with any commodity standard—creates an inefficient demand for monetary reserves held in the form of commodities.

There is no free-market version of monetarism. Not only does monetarism rest fundamentally on government regulation of money and money substitutes, but monetarist policy in practice creates periodic crises of high interest rates followed by recession. Because

the stock market and long-term debt markets weaken dramatically during these crises, incentives for creating and expanding businesses are seriously eroded. Monetarist attempts to erase inflation over too brief a period threaten to undermine the significant progress made recently in restoring incentives through tax reform.

The best hope for the consistent application of free-market principles is the creation of a sound U.S. dollar through manipulation of the interest rates on short-term government debt. Higher interest rates inevitably bring lower prices. We can keep the price level at 100 simply by raising interest rates gently whenever prices are above 100 and lowering them when prices are below 100. No inefficient regulation of banks or their nonbank competitors is needed to give the Federal Reserve the power to set the interest rate on treasury bills. All it has to do is buy and sell bills in the open market. Stabilizing interest rates rather than monetary aggregates avoids interest-rate crises and their attendant destructive effects on the real economy. By the three criteria set forth at the outset of this paper—stable prices, stable interest rates, and complete financial deregulation—the adaptive interest rate policy best meets our needs for monetary policy.

MONEY IN CRISIS

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and Monetary Reform

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