Ben S Bernanke: Deflation - making sure "it" doesn't happen here

Speech by Mr Ben S Bernanke, Member of the Board of Governors of the US Federal Reserve System, before the National Economists Club, Washington, DC, 21 November 2002.

The references for the speech can be found on the website of the Board of Governors of the US Federal Reserve System.

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Since World War II, inflation--the apparently inexorable rise in the prices of goods and services--has been the bane of central bankers. Economists of various stripes have argued that inflation is the inevitable result of (pick your favorite) the abandonment of metallic monetary standards, a lack of fiscal discipline, shocks to the price of oil and other commodities, struggles over the distribution of income, excessive money creation, self-confirming inflation expectations, an "inflation bias" in the policies of central banks, and still others. Despite widespread "inflation pessimism," however, during the 1980s and 1990s most industrial-country central banks were able to cage, if not entirely tame, the inflation dragon. Although a number of factors converged to make this happy outcome possible, an essential element was the heightened understanding by central bankers and, equally as important, by political leaders and the public at large of the very high costs of allowing the economy to stray too far from price stability.

With inflation rates now quite low in the United States, however, some have expressed concern that we may soon face a new problem--the danger of deflation, or falling prices. That this concern is not purely hypothetical is brought home to us whenever we read newspaper reports about Japan, where what seems to be a relatively moderate *deflation*--a decline in consumer prices of about 1 percent per year--has been associated with years of painfully slow growth, rising joblessness, and apparently intractable financial problems in the banking and corporate sectors. While it is difficult to sort out cause from effect, the consensus view is that deflation has been an important negative factor in the Japanese slump.

So, is deflation a threat to the economic health of the United States? Not to leave you in suspense, I believe that the chance of significant deflation in the United States in the foreseeable future is extremely small, for two principal reasons. The first is the resilience and structural stability of the U.S. economy itself. Over the years, the U.S. economy has shown a remarkable ability to absorb shocks of all kinds, to recover, and to continue to grow. Flexible and efficient markets for labor and capital, an entrepreneurial tradition, and a general willingness to tolerate and even embrace technological and economic change all contribute to this resiliency. A particularly important protective factor in the current environment is the strength of our financial system: Despite the adverse shocks of the past year, our banking system remains healthy and well-regulated, and firm and household balance sheets are for the most part in good shape. Also helpful is that inflation has recently been not only low but quite stable, with one result being that inflation expectations seem well anchored. For example, according to the University of Michigan survey that underlies the index of consumer sentiment, the median expected rate of inflation during the next five to ten years among those interviewed was 2.9 percent in October 2002, as compared with 2.7 percent a year earlier and 3.0 percent two years earlier--a stable record indeed.

The second bulwark against deflation in the United States, and the one that will be the focus of my remarks today, is the Federal Reserve System itself. The Congress has given the Fed the responsibility of preserving price stability (among other objectives), which most definitely implies avoiding deflation as well as inflation. I am confident that the Fed would take whatever means necessary to prevent significant deflation in the United States and, moreover, that the U.S. central bank, in cooperation with other parts of the government as needed, has sufficient policy instruments to ensure that any deflation that might occur would be both mild and brief.

Of course, we must take care lest confidence become over-confidence. Deflationary episodes are rare, and generalization about them is difficult. Indeed, a recent Federal Reserve study of the Japanese experience concluded that the deflation there was almost entirely unexpected, by both foreign and Japanese observers alike (Ahearne et al., 2002). So, having said that deflation in the United States is highly unlikely, I would be imprudent to rule out the possibility altogether. Accordingly, I want to turn to a further exploration of the causes of deflation, its economic effects, and the policy instruments that can be deployed against it. Before going further I should say that my comments today

reflect my own views only and are not necessarily those of my colleagues on the Board of Governors or the Federal Open Market Committee.

Deflation: its causes and effects

Deflation is defined as a general decline in prices, with emphasis on the word "general." At any given time, especially in a low-inflation economy like that of our recent experience, prices of some goods and services will be falling. Price declines in a specific sector may occur because productivity is rising and costs are falling more quickly in that sector than elsewhere or because the demand for the output of that sector is weak relative to the demand for other goods and services. Sector-specific price declines, uncomfortable as they may be for producers in that sector, are generally not a problem for the economy as a whole and do not constitute deflation. Deflation *per se* occurs only when price declines are so widespread that broad-based indexes of prices, such as the consumer price index, register ongoing declines.

The sources of deflation are not a mystery. Deflation is in almost all cases a side effect of a collapse of aggregate demand--a drop in spending so severe that producers must cut prices on an ongoing basis in order to find buyers.[1] Likewise, the economic effects of a deflationary episode, for the most part, are similar to those of any other sharp decline in aggregate spending--namely, recession, rising unemployment, and financial stress.

However, a deflationary recession may differ in one respect from "normal" recessions in which the inflation rate is at least modestly positive: Deflation of sufficient magnitude may result in the nominal interest rate declining to zero or very close to zero.[2] Once the nominal interest rate is at zero, no further downward adjustment in the rate can occur, since lenders generally will not accept a negative nominal interest rate when it is possible instead to hold cash. At this point, the nominal interest rate is said to have hit the "zero bound."

Deflation great enough to bring the nominal interest rate close to zero poses special problems for the economy and for policy. First, when the nominal interest rate has been reduced to zero, the *real* interest rate paid by borrowers equals the expected rate of deflation, however large that may be.[3] To take what might seem like an extreme example (though in fact it occurred in the United States in the early 1930s), suppose that deflation is proceeding at a clip of 10 percent per year. Then someone who borrows for a year at a nominal interest rate of zero actually faces a 10 percent *real* cost of funds, as the loan must be repaid in dollars whose purchasing power is 10 percent greater than that of the dollars borrowed originally. In a period of sufficiently severe deflation, the real cost of borrowing becomes prohibitive. Capital investment, purchases of new homes, and other types of spending decline accordingly, worsening the economic downturn.

Although deflation and the zero bound on nominal interest rates create a significant problem for those seeking to borrow, they impose an even greater burden on households and firms that had accumulated substantial debt before the onset of the deflation. This burden arises because, even if debtors are able to refinance their existing obligations at low nominal interest rates, with prices falling they must still repay the principal in dollars of increasing (perhaps rapidly increasing) real value. When William Jennings Bryan made his famous "cross of gold" speech in his 1896 presidential campaign, he was speaking on behalf of heavily mortgaged farmers whose debt burdens were growing ever larger in real terms, the result of a sustained deflation that followed America's post-Civil-War return to the gold

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1 Conceivably, deflation could also be caused by a sudden, large expansion in aggregate supply arising, for example, from rapid gains in productivity and broadly declining costs. I don't know of any unambiguous example of a supply-side deflation, although China in recent years is a possible case. Note that a supply-side deflation would be associated with an economic boom rather than a recession.

2 The nominal interest rate is the sum of the real interest rate and expected inflation. If expected inflation moves with actual inflation, and the real interest rate is not too variable, then the nominal interest rate declines when inflation declines--an effect known as the Fisher effect, after the early twentieth-century economist Irving Fisher. If the rate of deflation is equal to or greater than the real interest rate, the Fisher effect predicts that the nominal interest rate will equal zero.

3 The real interest rate equals the nominal interest rate minus the expected rate of inflation (see the previous footnote). The real interest rate measures the real (that is, inflation-adjusted) cost of borrowing or lending.

standard.[4] The financial distress of debtors can, in turn, increase the fragility of the nation's financial system--for example, by leading to a rapid increase in the share of bank loans that are delinquent or in default. Japan in recent years has certainly faced the problem of "debt-deflation"--the deflation-induced, ever-increasing real value of debts. Closer to home, massive financial problems, including defaults, bankruptcies, and bank failures, were endemic in America's worst encounter with deflation, in the years 1930-33--a period in which (as I mentioned) the U.S. price level fell about 10 percent per year.

Beyond its adverse effects in financial markets and on borrowers, the zero bound on the nominal interest rate raises another concern--the limitation that it places on conventional monetary policy. Under normal conditions, the Fed and most other central banks implement policy by setting a target for a short-term interest rate--the overnight federal funds rate in the United States--and enforcing that target by buying and selling securities in open capital markets. When the short-term interest rate hits zero, the central bank can no longer ease policy by lowering its usual interest-rate target.[5]

Because central banks conventionally conduct monetary policy by manipulating the short-term nominal interest rate, some observers have concluded that when that key rate stands at or near zero, the central bank has "run out of ammunition"--that is, it no longer has the power to expand aggregate demand and hence economic activity. It is true that once the policy rate has been driven down to zero, a central bank can no longer use its *traditional* means of stimulating aggregate demand and thus will be operating in less familiar territory. The central bank's inability to use its traditional methods may complicate the policymaking process and introduce uncertainty in the size and timing of the economy's response to policy actions. Hence I agree that the situation is one to be avoided if possible.

However, a principal message of my talk today is that a central bank whose accustomed policy rate has been forced down to zero has most definitely *not* run out of ammunition. As I will discuss, a central bank, either alone or in cooperation with other parts of the government, retains considerable power to expand aggregate demand and economic activity even when its accustomed policy rate is at zero. In the remainder of my talk, I will first discuss measures for preventing deflation--the preferable option if feasible. I will then turn to policy measures that the Fed and other government authorities can take if prevention efforts fail and deflation appears to be gaining a foothold in the economy.

Preventing deflation

As I have already emphasized, deflation is generally the result of low and falling aggregate demand. The basic prescription for preventing deflation is therefore straightforward, at least in principle: Use monetary and fiscal policy as needed to support aggregate spending, in a manner as nearly consistent as possible with full utilization of economic resources and low and stable inflation. In other words, the best way to get out of trouble is not to get into it in the first place. Beyond this commonsense injunction, however, there are several measures that the Fed (or any central bank) can take to reduce the risk of falling into deflation.

First, the Fed should try to preserve a buffer zone for the inflation rate, that is, during normal times it should not try to push inflation down all the way to zero.[6] Most central banks seem to understand the need for a buffer zone. For example, central banks with explicit inflation targets almost invariably set their target for inflation above zero, generally between 1 and 3 percent per year. Maintaining an inflation buffer zone reduces the risk that a large, unanticipated drop in aggregate demand will drive the economy far enough into deflationary territory to lower the nominal interest rate to zero. Of course,

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[4] Throughout the latter part of the nineteenth century, a worldwide gold shortage was forcing down prices in all countries tied to the gold standard. Ironically, however, by the time that Bryan made his famous speech, a new cyanide-based method for extracting gold from ore had greatly increased world gold supplies, ending the deflationary pressure.

[5] A rather different, but historically important, problem associated with the zero bound is the possibility that policymakers may mistakenly interpret the zero nominal interest rate as signaling conditions of "easy money." The Federal Reserve apparently made this error in the 1930s. In fact, when prices are falling, the real interest rate may be high and monetary policy tight, despite a nominal interest rate at or near zero.

[6] Several studies have concluded that the measured rate of inflation overstates the "true" rate of inflation, because of several biases in standard price indexes that are difficult to eliminate in practice. The upward bias in the measurement of true inflation is another reason to aim for a measured inflation rate above zero.

this benefit of having a buffer zone for inflation must be weighed against the costs associated with allowing a higher inflation rate in normal times.

Second, the Fed should take most seriously--as of course it does--its responsibility to ensure financial stability in the economy. Irving Fisher (1933) was perhaps the first economist to emphasize the potential connections between violent financial crises, which lead to "fire sales" of assets and falling asset prices, with general declines in aggregate demand and the price level. A healthy, well capitalized banking system and smoothly functioning capital markets are an important line of defense against deflationary shocks. The Fed should and does use its regulatory and supervisory powers to ensure that the financial system will remain resilient if financial conditions change rapidly. And at times of extreme threat to financial stability, the Federal Reserve stands ready to use the discount window and other tools to protect the financial system, as it did during the 1987 stock market crash and the September 11, 2001, terrorist attacks.

Third, as suggested by a number of studies, when inflation is already low and the fundamentals of the economy suddenly deteriorate, the central bank should act more preemptively and more aggressively than usual in cutting rates (Orphanides and Wieland, 2000; Reifschneider and Williams, 2000; Ahearne et al., 2002). By moving decisively and early, the Fed may be able to prevent the economy from slipping into deflation, with the special problems that entails.

As I have indicated, I believe that the combination of strong economic fundamentals and policymakers that are attentive to downside as well as upside risks to inflation make significant deflation in the United States in the foreseeable future quite unlikely. But suppose that, despite all precautions, deflation were to take hold in the U.S. economy and, moreover, that the Fed's policy instrument--the federal funds rate--were to fall to zero. What then? In the remainder of my talk I will discuss some possible options for stopping a deflation once it has gotten under way. I should emphasize that my comments on this topic are necessarily speculative, as the modern Federal Reserve has never faced this situation nor has it pre-committed itself formally to any specific course of action should deflation arise. Furthermore, the specific responses the Fed would undertake would presumably depend on a number of factors, including its assessment of the whole range of risks to the economy and any complementary policies being undertaken by other parts of the U.S. government.[7]

Curing deflation

Let me start with some general observations about monetary policy at the zero bound, sweeping under the rug for the moment some technical and operational issues.

As I have mentioned, some observers have concluded that when the central bank's policy rate falls to zero--its practical minimum--monetary policy loses its ability to further stimulate aggregate demand and the economy. At a broad conceptual level, and in my view in practice as well, this conclusion is clearly mistaken. Indeed, under a fiat (that is, paper) money system, a government (in practice, the central bank in cooperation with other agencies) should always be able to generate increased nominal spending and inflation, even when the short-term nominal interest rate is at zero.

The conclusion that deflation is always reversible under a fiat money system follows from basic economic reasoning. A little parable may prove useful: Today an ounce of gold sells for $300, more or less. Now suppose that a modern alchemist solves his subject's oldest problem by finding a way to produce unlimited amounts of new gold at essentially no cost. Moreover, his invention is widely publicized and scientifically verified, and he announces his intention to begin massive production of gold within days. What would happen to the price of gold? Presumably, the potentially unlimited supply of cheap gold would cause the market price of gold to plummet. Indeed, if the market for gold is to any degree efficient, the price of gold would collapse immediately after the announcement of the invention, before the alchemist had produced and marketed a single ounce of yellow metal.

What has this got to do with monetary policy? Like gold, U.S. dollars have value only to the extent that they are strictly limited in supply. But the U.S. government has a technology, called a printing press (or, today, its electronic equivalent), that allows it to produce as many U.S. dollars as it wishes at

[7] See Clouse et al. (2000) for a more detailed discussion of monetary policy options when the nominal short-term interest rate is zero.

essentially no cost. By increasing the number of U.S. dollars in circulation, or even by credibly threatening to do so, the U.S. government can also reduce the value of a dollar in terms of goods and services, which is equivalent to raising the prices in dollars of those goods and services. We conclude that, under a paper-money system, a determined government can always generate higher spending and hence positive inflation.

Of course, the U.S. government is not going to print money and distribute it willy-nilly (although as we will see later, there are practical policies that approximate this behavior).[8] Normally, money is injected into the economy through asset purchases by the Federal Reserve. To stimulate aggregate spending when short-term interest rates have reached zero, the Fed must expand the scale of its asset purchases or, possibly, expand the menu of assets that it buys. Alternatively, the Fed could find other ways of injecting money into the system--for example, by making low-interest-rate loans to banks or cooperating with the fiscal authorities. Each method of adding money to the economy has advantages and drawbacks, both technical and economic. One important concern in practice is that calibrating the economic effects of nonstandard means of injecting money may be difficult, given our relative lack of experience with such policies. Thus, as I have stressed already, prevention of deflation remains preferable to having to cure it. If we do fall into deflation, however, we can take comfort that the logic of the printing press example must assert itself, and sufficient injections of money will ultimately always reverse a deflation.

So what then might the Fed do if its target interest rate, the overnight federal funds rate, fell to zero? One relatively straightforward extension of current procedures would be to try to stimulate spending by lowering rates further out along the Treasury term structure--that is, rates on government bonds of longer maturities.[9] There are at least two ways of bringing down longer-term rates, which are complementary and could be employed separately or in combination. One approach, similar to an action taken in the past couple of years by the Bank of Japan, would be for the Fed to commit to holding the overnight rate at zero for some specified period. Because long-term interest rates represent averages of current and expected future short-term rates, plus a term premium, a commitment to keep short-term rates at zero for some time--if it were credible--would induce a decline in longer-term rates. A more direct method, which I personally prefer, would be for the Fed to begin announcing explicit ceilings for yields on longer-maturity Treasury debt (say, bonds maturing within the next two years). The Fed could enforce these interest-rate ceilings by committing to make unlimited purchases of securities up to two years from maturity at prices consistent with the targeted yields. If this program were successful, not only would yields on medium-term Treasury securities fall, but (because of links operating through expectations of future interest rates) yields on longer-term public and private debt (such as mortgages) would likely fall as well.

Lower rates over the maturity spectrum of public and private securities should strengthen aggregate demand in the usual ways and thus help to end deflation. Of course, if operating in relatively short-dated Treasury debt proved insufficient, the Fed could also attempt to cap yields of Treasury securities at still longer maturities, say three to six years. Yet another option would be for the Fed to use its existing authority to operate in the markets for agency debt (for example, mortgage-backed securities issued by Ginnie Mae, the Government National Mortgage Association).

Historical experience tends to support the proposition that a sufficiently determined Fed can peg or cap Treasury bond prices and yields at other than the shortest maturities. The most striking episode of bond-price pegging occurred during the years before the Federal Reserve-Treasury Accord of 1951.[10] Prior to that agreement, which freed the Fed from its responsibility to fix yields on government debt, the Fed maintained a ceiling of 2-1/2 percent on long-term Treasury bonds for nearly a decade. Moreover, it simultaneously established a ceiling on the twelve-month Treasury certificate of between 7/8 percent to 1-1/4 percent and, during the first half of that period, a rate of 3/8 percent on the 90-day Treasury bill. The Fed was able to achieve these low interest rates despite a level of outstanding government debt (relative to GDP) significantly greater than we have today, as well as inflation rates

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[8] Keynes, however, once semi-seriously proposed, as an anti-deflationary measure, that the government fill bottles with currency and bury them in mine shafts to be dug up by the public.

[9] Because the term structure is normally upward sloping, especially during periods of economic weakness, longer-term rates could be significantly above zero even when the overnight rate is at the zero bound.

[10] See Hetzel and Leach (2001) for a fascinating account of the events leading to the Accord.

substantially more variable. At times, in order to enforce these low rates, the Fed had actually to purchase the bulk of outstanding 90-day bills. Interestingly, though, the Fed enforced the 2-1/2 percent ceiling on long-term bond yields for nearly a decade without ever holding a substantial share of long-maturity bonds outstanding.[11] For example, the Fed held 7.0 percent of outstanding Treasury securities in 1945 and 9.2 percent in 1951 (the year of the Accord), almost entirely in the form of 90-day bills. For comparison, in 2001 the Fed held 9.7 percent of the stock of outstanding Treasury debt.

To repeat, I suspect that operating on rates on longer-term Treasuries would provide sufficient leverage for the Fed to achieve its goals in most plausible scenarios. If lowering yields on longer-dated Treasury securities proved insufficient to restart spending, however, the Fed might next consider attempting to influence directly the yields on privately issued securities. Unlike some central banks, and barring changes to current law, the Fed is relatively restricted in its ability to buy private securities directly.[12] However, the Fed does have broad powers to lend to the private sector indirectly via banks, through the discount window.[13] Therefore a second policy option, complementary to operating in the markets for Treasury and agency debt, would be for the Fed to offer fixed-term loans to banks at low or zero interest, with a wide range of private assets (including, among others, corporate bonds, commercial paper, bank loans, and mortgages) deemed eligible as collateral.[14] For example, the Fed might make 90-day or 180-day zero-interest loans to banks, taking corporate commercial paper of the same maturity as collateral. Pursued aggressively, such a program could significantly reduce liquidity and term premiums on the assets used as collateral. Reductions in these premiums would lower the cost of capital both to banks and the nonbank private sector, over and above the beneficial effect already conferred by lower interest rates on government securities.[15]

The Fed can inject money into the economy in still other ways. For example, the Fed has the authority to buy foreign government debt, as well as domestic government debt. Potentially, this class of assets offers huge scope for Fed operations, as the quantity of foreign assets eligible for purchase by the Fed is several times the stock of U.S. government debt.[16]

I need to tread carefully here. Because the economy is a complex and interconnected system, Fed purchases of the liabilities of foreign governments have the potential to affect a number of financial markets, including the market for foreign exchange. In the United States, the Department of the

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[11] See Eichengreen and Garber (1991) and Toma (1992) for descriptions and analyses of the pre-Accord period. Both articles conclude that the Fed's commitment to low inflation helped convince investors to hold long-term bonds at low rates in the 1940s and 1950s. (A similar dynamic would work in the Fed's favor today.) The rate-pegging policy finally collapsed because the money creation associated with buying Treasury securities was generating inflationary pressures. Of course, in a deflationary situation, generating inflationary pressure is precisely what the policy is trying to accomplish.

An episode apparently less favorable to the view that the Fed can manipulate Treasury yields was the so-called Operation Twist of the 1960s, during which an attempt was made to raise short-term yields and lower long-term yields simultaneously by selling at the short end and buying at the long end. Academic opinion on the effectiveness of Operation Twist is divided. In any case, this episode was rather small in scale, did not involve explicit announcement of target rates, and occurred when interest rates were not close to zero.

[12] The Fed is allowed to buy certain short-term private instruments, such as bankers' acceptances, that are not much used today. It is also permitted to make IPC (individual, partnership, and corporation) loans directly to the private sector, but only under stringent criteria. This latter power has not been used since the Great Depression but could be invoked in an emergency deemed sufficiently serious by the Board of Governors.

[13] Effective January 9, 2003, the discount window will be restructured into a so-called Lombard facility, from which well-capitalized banks will be able to borrow freely at a rate above the federal funds rate. These changes have no important bearing on the present discussion.

[14] By statute, the Fed has considerable leeway to determine what assets to accept as collateral.

[15] In carrying out normal discount window operations, the Fed absorbs virtually no credit risk because the borrowing bank remains responsible for repaying the discount window loan even if the issuer of the asset used as collateral defaults. Hence both the private issuer of the asset and the bank itself would have to fail nearly simultaneously for the Fed to take a loss. The fact that the Fed bears no credit risk places a limit on how far down the Fed can drive the cost of capital to private nonbank borrowers. For various reasons the Fed might well be reluctant to incur credit risk, as would happen if it bought assets directly from the private nonbank sector. However, should this additional measure become necessary, the Fed could of course always go to the Congress to ask for the requisite powers to buy private assets. The Fed also has emergency powers to make loans to the private sector (see footnote 12), which could be brought to bear if necessary.

[16] The Fed has committed to the Congress that it will not use this power to "bail out" foreign governments; hence in practice it would purchase only highly rated foreign government debt.

Treasury, not the Federal Reserve, is the lead agency for making international economic policy, including policy toward the dollar; and the Secretary of the Treasury has expressed the view that the determination of the value of the U.S. dollar should be left to free market forces. Moreover, since the United States is a large, relatively closed economy, manipulating the exchange value of the dollar would not be a particularly desirable way to fight domestic deflation, particularly given the range of other options available. Thus, I want to be absolutely clear that I am today neither forecasting nor recommending any attempt by U.S. policymakers to target the international value of the dollar.

Although a policy of intervening to affect the exchange value of the dollar is nowhere on the horizon today, it's worth noting that there have been times when exchange rate policy has been an effective weapon against deflation. A striking example from U.S. history is Franklin Roosevelt's 40 percent devaluation of the dollar against gold in 1933-34, enforced by a program of gold purchases and domestic money creation. The devaluation and the rapid increase in money supply it permitted ended the U.S. deflation remarkably quickly. Indeed, consumer price inflation in the United States, year on year, went from –10.3 percent in 1932 to –5.1 percent in 1933 to 3.4 percent in 1934.[17] The economy grew strongly, and by the way, 1934 was one of the best years of the century for the stock market. If nothing else, the episode illustrates that monetary actions can have powerful effects on the economy, even when the nominal interest rate is at or near zero, as was the case at the time of Roosevelt's devaluation.

Fiscal policy

Each of the policy options I have discussed so far involves the Fed's acting on its own. In practice, the effectiveness of anti-deflation policy could be significantly enhanced by cooperation between the monetary and fiscal authorities. A broad-based tax cut, for example, accommodated by a program of open-market purchases to alleviate any tendency for interest rates to increase, would almost certainly be an effective stimulant to consumption and hence to prices. Even if households decided not to increase consumption but instead re-balanced their portfolios by using their extra cash to acquire real and financial assets, the resulting increase in asset values would lower the cost of capital and improve the balance sheet positions of potential borrowers. A money-financed tax cut is essentially equivalent to Milton Friedman's famous "helicopter drop" of money.[18]

Of course, in lieu of tax cuts or increases in transfers the government could increase spending on current goods and services or even acquire existing real or financial assets. If the Treasury issued debt to purchase private assets and the Fed then purchased an equal amount of Treasury debt with newly created money, the whole operation would be the economic equivalent of direct open-market operations in private assets.

Japan

The claim that deflation can be ended by sufficiently strong action has no doubt led you to wonder, if that is the case, why has Japan not ended its deflation? The Japanese situation is a complex one that I cannot fully discuss today. I will just make two brief, general points.

First, as you know, Japan's economy faces some significant barriers to growth besides deflation, including massive financial problems in the banking and corporate sectors and a large overhang of

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[17] U.S. Bureau of the Census, *Historical Statistics of the United States*, *Colonial Times to 1970*, Washington, D.C.: 1976.

[18] A tax cut financed by money creation is the equivalent of a bond-financed tax cut plus an open-market operation in bonds by the Fed, and so arguably no explicit coordination is needed. However, a pledge by the Fed to keep the Treasury's borrowing costs low, as would be the case under my preferred alternative of fixing portions of the Treasury yield curve, might increase the willingness of the fiscal authorities to cut taxes.

Some have argued (on theoretical rather than empirical grounds) that a money-financed tax cut might not stimulate people to spend more because the public might fear that future tax increases will just "take back" the money they have received. Eggertson (2002) provides a theoretical analysis showing that, if government bonds are not indexed to inflation and certain other conditions apply, a money-financed tax cut will in fact raise spending and inflation. In brief, the reason is that people know that inflation erodes the real value of the government's debt and, therefore, that it is in the interest of the government to create some inflation. Hence they will believe the government's promise not to "take back" in future taxes the money distributed by means of the tax cut.

government debt. Plausibly, private-sector financial problems have muted the effects of the monetary policies that have been tried in Japan, even as the heavy overhang of government debt has made Japanese policymakers more reluctant to use aggressive fiscal policies (for evidence see, for example, Posen, 1998). Fortunately, the U.S. economy does not share these problems, at least not to anything like the same degree, suggesting that anti-deflationary monetary and fiscal policies would be more potent here than they have been in Japan.

Second, and more important, I believe that, when all is said and done, the failure to end deflation in Japan does not necessarily reflect any technical infeasibility of achieving that goal. Rather, it is a byproduct of a longstanding political debate about how best to address Japan's overall economic problems. As the Japanese certainly realize, both restoring banks and corporations to solvency and implementing significant structural change are necessary for Japan's long-run economic health. But in the short run, comprehensive economic reform will likely impose large costs on many, for example, in the form of unemployment or bankruptcy. As a natural result, politicians, economists, businesspeople, and the general public in Japan have sharply disagreed about competing proposals for reform. In the resulting political deadlock, strong policy actions are discouraged, and cooperation among policymakers is difficult to achieve.

In short, Japan's deflation problem is real and serious; but, in my view, political constraints, rather than a lack of policy instruments, explain why its deflation has persisted for as long as it has. Thus, I do not view the Japanese experience as evidence against the general conclusion that U.S. policymakers have the tools they need to prevent, and, if necessary, to cure a deflationary recession in the United States.

Conclusion

Sustained deflation can be highly destructive to a modern economy and should be strongly resisted. Fortunately, for the foreseeable future, the chances of a serious deflation in the United States appear remote indeed, in large part because of our economy's underlying strengths but also because of the determination of the Federal Reserve and other U.S. policymakers to act preemptively against deflationary pressures. Moreover, as I have discussed today, a variety of policy responses are available should deflation appear to be taking hold. Because some of these alternative policy tools are relatively less familiar, they may raise practical problems of implementation and of calibration of their likely economic effects. For this reason, as I have emphasized, prevention of deflation is preferable to cure. Nevertheless, I hope to have persuaded you that the Federal Reserve and other economic policymakers would be far from helpless in the face of deflation, even should the federal funds rate hit its zero bound.[19]

[19] Some recent academic literature has warned of the possibility of an "uncontrolled deflationary spiral," in which deflation feeds on itself and becomes inevitably more severe. To the best of my knowledge, none of these analyses consider feasible policies of the type that I have described today. I have argued here that these policies would eliminate the possibility of uncontrollable deflation.