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### **Understanding Deflation: Treating the Disease, Not the Symptoms**

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In recent months, many policy makers and analysts have fretted about the possibility that the U.S. economy might enter a protracted period of price deflation. Price data have been scoured for evidence, but are not yet conclusive. Federal Reserve officials have tried to calm markets by asserting they have at hand a number of tools to fight deflation. Those who consider deflation a real threat point to Japan, while naysayers argue that our economy is different, and our policy makers are more astute. Some time ago, Chairman Greenspan added to the confusion by eliminating the “D” word from his public pronouncements, trying to reassure markets that economic recovery is imminent and hinting that the real threat is renewed inflation.<sup>1</sup> This threw bond markets for a loop on the fear that the Fed is poised to raise interest rates at the first unambiguous signs of decent growth. As a result, longer term interest rates, which had been trending toward all-time lows on expectations the Fed would keep short term rates low, rose sharply. Ironically, some observers—including, apparently, Chairman Greenspan take rising interest rates as evidence against the prospects for deflation!

What we find missing from most analyses on this topic is a clear discussion of the causes of the deflationary pressures that seem to afflict economies today on a global scale. Further, most discussions and analyses do not identify the costs that might be associated with deflation, but rather appear to presume that deflation is itself a bad thing. In what follows, we will argue that deflation can and usually does generate large economic and social costs, but it is more important to understand that deflation itself is a symptom of severe and chronic economic problems. This distinction becomes important for the design and implementation of economic policy. For example, if deflation is the primary problem, then one might propose policies specifically designed to stop prices from falling. If however deflation serves mostly as the canary in the coalmine, policy should be aimed at the underlying economic problems that generate deflationary pressures rather than at the falling general price level, per se. We note that one can make such a distinction between the design of the early New Deal policies that were mostly devoted to maintaining prices and wages versus the later New Deal policies that tried to resolve problems of unemployment and deficiency of demand that were largely responsible for deflationary pressures. In our view, those who believe that the Fed can effectively battle deflationary pressures with its monetary tools (and even using fairly unconventional tools many

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<sup>1</sup> In a speech on December 19, 2002, Greenspan focused on deflation, warning that it could be more damaging than inflation. (Andrews 2002) On May 21, 2003 he warned that “deflation is a possibility.” (Leonhardt 2003) Fed officials publicly stated that even if the fed funds rate fell to zero, they could still stimulate growth by buying long-term bonds. Greenspan’s statement as well as the possibility that the Fed might buy long-term bonds fueled a speculative boom that pushed long-term rates down. However, Greenspan reversed course in his July 2003 testimony, when he stopped talking about deflation and presented an optimistic forecast of economic growth. Further, he surprised the bond market by saying it was unlikely that the Fed would buy longer-term bonds. Long-term rates immediately reversed course. (Firestone and Fuerbringer 2003) Recently Greenspan has tried to justify his earlier concerns about deflation, arguing that while the possibility was exceedingly remote, the costs of deflation are sufficiently large to warrant Fed concerns.

commentators urge the Fed to “pump liquidity” into the economy to prop up prices) have not identified the causes of deflation nor have they formulated policy to resolve the economic problems generating deflationary pressures. At best, they are merely treating symptoms, not the underlying disease.

## **CAUSES OF DEFLATIONARY PRESSURES**

The current situation in the U.S. must be examined in the context of the policy stance (both monetary and fiscal) of the past decade. Ten years ago the economy was trying to recover from a “double-dip” recession, with slow growth and almost no job creation. Many blamed the Fed for its “too little, too late” easing of monetary policy. Even when growth did pick up in the middle of the decade, the Fed still fretted about inflation, with many analysts advocating a policy of “speed limits” according to which the Fed would tighten if economic growth exceeded the 2.5% that was believed to indicate “full employment” potential (corresponding with a presumed NAIRU of some six or six and a half percent). (Bell and Wray 1998) However, the Greenspan-helmed Fed eventually came to the view that the speed limits of the past no longer applied to the “New Economy.” For a variety of reasons, economic growth picked-up, unemployment hovered around 4%, and while the Chairman and other Fed Governors continually warned that inflation lurked just around the corner, the Fed maintained relatively low rates. Nearing the end of the decade, the Fed could take it no longer and raised the fed funds rate in a series of a dozen steps. In quick succession, the stock market collapsed, the New Economy crashed and burned, the official recession hit, and the Fed began to lower interest rates in another dozen-plus steps. For almost three years now Chairman Greenspan and most pundits have been predicting recovery, even as job losses escalate, as bankruptcies by individuals and firms accumulate, as sales stagnate, and as wages and prices are pressured.

Such a story, which emphasizes the important role played by the Fed over the past decade, could be told by Fed detractors and supporters alike. One could see in that story brilliant management by Chairman Greenspan, who engineered the longest expansion in U.S. history, wiped-out inflation, and skillfully brought the economy out of an induced soft-landing designed to purge excesses resulting from over-full employment. Alternatively, one could argue that the Chairman blundered into, and contributed to, the worst speculative bubble in world history and then raised rates to fight non-existent inflationary pressures only to throw the economy into a dangerous deflationary spiral. That latter interpretation is now taking hold in markets, as evidenced by a cascade of editorials questioning the earlier canonization of Chairman Greenspan. (Morgenson 2003, Krugman 2003)

But that is at best half the story. The other half begins a bit earlier, with the efforts by Congress to mandate balanced federal government budgets during the 1980s, culminating in the Gramm-Rudman-Hollings Act of 1986. This “fiscal responsibility” played a large role in throwing the economy into the Bush (I) recession of the early 1990s, and relative fiscal restraint contributed to the difficult, jobless, recovery. Eventually, however, the burgeoning budget deficit overcame the headwinds induced by a deficiency of aggregate demand coming from the private sector. The economy began to grow. For a number of reasons (some of which were analyzed in Wray 2000, Papadimitriou and Wray 2001a), including what Greenspan labeled “irrational exuberance,” the stock market “wealth effect,” the “New Economy” hype, creative accounting, President Clinton’s contagious libertinism, and innovations in consumer credit, firms and consumers began to borrow and spend on an entirely unprecedented scale. This not only overcame the fiscal drag built into the budget by the Gramm-Rudman-Hollings mandate, but actually generated large and rising fiscal surpluses that were projected to continue through the end of the first quarter of the new century. As many analyses published by The Levy Economics Institute proclaimed at the time (Godley 1999, 2003; Godley and Izurieta 2001; Godley and Wray 1999; Papadimitriou and Wray 1998, 2001a, 2001b) the expansion was highly unsustainable and faced an almost inevitable and ugly crash. To be specific, the end would come when households and firms taken collectively tried to bring their spending back into line with their incomes. Given the structural fiscal stance (which is biased to run a balanced budget or even surpluses at modest rates of economic growth) as well as the structural external negative balance (at any probable growth rate, the U.S. will run a trade deficit that dampens demand), moderate growth requires that the private sector run deficits. (Godley 1999, 2000; Godley and Izurieta, 2001; Papadimitriou et al 2002) Traditionally, however, private sector deficits had been rare and short-lived before 1996; indeed, the typical private sector balance had been a surplus of some two or three percent of GDP (except during robust booms). Hence, if the private sector were to return to a more normal budget surplus, the demand deficiency that would be opened would generate massive lay-offs as firms would try to bring production down to match falling demand. As this occurred, it would raise the number of unemployed by millions, creating snowballing financial difficulties as households lost jobs and incomes and as firms faced falling sales revenue. Further, tax revenues would fall precisely when all levels of governments needed to increase spending to deal with rising needs. (See Wray 2003) This means that those projected surpluses would not and could not be realized, indeed, very large government deficits would be restored. For states, rising deficits would create intolerable budget situations and hence lead to draconian spending cuts and tax increases.

And so it all came to pass—or, at least, it is currently underway. In our view, recovery is not right around the corner. At best, the economy might limp along with a “growth recession,”

although a “double-dip” recession is possible. In either case, job losses will continue to occur because the economy will grow too slowly to halt the hemorrhaging labor market. There is even the possibility that things could get very much worse, if a full-scale deflation were to take hold. Let us turn to a worst case scenario after first examining what we mean by deflation.

### **DEFLATION: Definitions, Consequences, and Policies to Counter It**

Deflation can be defined as a falling general, or overall, price level. Many analysts refer to one of the common price indices—the consumer price index, the GDP deflator, or perhaps one of the somewhat narrower indices like the wholesale price index or an index of manufactured goods prices. However, this definition leads to some ambiguity and raises many questions. All price indices are constructed and reflect assumptions about weighting schemes, and indeed which prices to include, as “baskets” of purchased goods and services change through time. The most general indices (the CPI and GDP deflator) include many “imputed” prices of goods and services that are not regularly sold in markets. Measuring prices through time (which is essential to determining whether prices are falling) leads to well-known heterogeneity problems (including product quality assessments). Further, even “market prices” are quite complexly determined and usually administered or at least influenced by firms with market power as well as by government policy.

What this means is that it is not clear that deflation is—by itself—always and everywhere a problem. This is for several reasons. First, while unlikely, it is certainly possible to record a falling index (i.e., the CPI) even if no firm actually experiences falling prices received for the sales of its products. This could happen, for example, if technological advance led to improved quality of all (or a significant portion of) output produced at constant costs. Quality adjusted prices calculated for the index would then fall even though actual sales prices (hence, revenues and incomes) remained constant. The index could also fall if imputed prices of services not bought in markets (such as the value of imputed services from owner-occupied housing) fell. Or, even more simply, tax cuts could lower production costs and lead to falling prices. In none of these cases would firms or consumers necessarily see the measured “deflation” as a problem. Indeed, a vibrant and innovative market economy would expect to see such price changes frequently and on a large enough scale to affect overall price indices (sometimes pushing them up, other times pushing them down), but such changes should not worry policymakers and thus should not lead to policy responses.

As our late colleague Hyman Minsky emphasized, prices serve many functions in a modern economy. Prices allow firms to cover costs and to accumulate financial reserves to internally finance investment. All things equal, each individual firm prefers to sell at a higher

price rather than a lower price. However, falling prices of output for a firm, industry, or even a sector can be consistent with long-term strategic plans. During the New Economy boom, for example, prices of high tech products were generally falling—for a wide variety of reasons, some of which are well-known. First, there is the normal “product cycle” in which new products first sell at high prices to upper income households and then sales gradually filter down to lower income households as prices fall (VCRs and cellular phones are good examples). This product cycle pricing is captured to a greater or lesser degree in the price indices, depending on the product and the index. Second, rapid technological advance especially in the manufacturing of computers and peripherals led to rapidly falling production costs, while competition forced retail prices down (quality-adjusted prices fell at an even faster pace). Third, manufacturing of high tech products moved to low cost foreign producers, as did many of the services associated with the sector—lowering costs and helping to push down prices. Hence, falling sales prices were not necessarily inconsistent with healthy performance by firms (effects on consumers were also good, although displaced workers suffered). Further, much of the New Economy’s high tech boom was financed through the frenzy of the stock market’s excesses and not through debt issues; as discussed in more detail below, the level of debt plays an important role in determining whether a firm can cope with falling output prices. To be sure, the high tech sector is a rather small part of the nation’s output, and a small part of the consumer’s basket, although advances in this sector also tended to reduce production costs in other sectors. While the New Economy innovations probably could not have generated deflation as measured by conventional indices, one can conceive of the possibility that innovations affecting larger sectors of the economy might be capable of generating benign measured deflation on an economy-wide scale. But, this is not the kind of deflation that should worry policy-makers.

While few analysts have been specific, most seem to be concerned about the possibility of a 1930s-style deflation. Irving Fisher called this a “debt deflation” and Hyman Minsky was fond of pointing out that while output prices fell by “only” 25% during the Great Depression, asset prices fell by 85%. That is, unlike most current commentators, both Fisher and Minsky emphasized falling asset prices—most prominently of equities and farms in the case of the 1930s—not falling indices of output prices. This is not to imply that the two price systems are unrelated. In Minsky’s view, competitive pressures and inadequate demand due in large part to declining investment spending as well as inappropriate fiscal policy led to falling sales and output prices. This in turn led to lay-offs and pressure to cut wages. Falling wages, however, depressed demand further and led to a vicious cycle of price cuts, declining wages, and falling employment and sales. That was bad enough. But because the 1920s had been marked by a run-up of private sector debt (the first consumer debt explosion occurred in the 1920s as households financed purchases of the new electronic products made available; farmers had borrowed

heavily to finance land purchases; and the finance of investment by firms had changed markedly with the rise of what Rudolf Hilferding called “finance capitalism” to rely on greater external finance), and because debts are in nominal terms, falling sales prices and wages made it impossible to service the debt. Defaults snowballed and brought down the banking system, wiping out the savings of depositors. Minsky liked to say that the financial system became “simplified” as most of the financial assets and liabilities disappeared. The lasting effects were fear of indebtedness, and hence financial conservatism, as well as destruction of banker-borrower relations that impeded recovery and contributed to the decade-long depression (made worse, as discussed below, by errant fiscal constraint).

Note that several of the early New Deal programs were designed specifically to halt the fall of product prices and wages. One could see these programs as based on the belief that the main problem was the falling prices and wages, themselves. These programs were largely unsuccessful—in addition to constitutional problems, market pressures induced firms to circumvent the programs in order to cut wages and prices anyway (although some of them remained in place for decades after the depression ended, in the form of agricultural price supports and commodities buffer stock programs, and they did help to maintain some price stability in the postwar economy). One could see these as attempts to treat the symptoms (wage and price declines) rather than the underlying disease (insufficient demand). Many of the later New Deal programs were designed to restore demand: direct employment programs (WPA, CCC) and creation of various income support programs (the biggest was Social Security). It is our belief that these proved to be much more successful precisely because they were aimed at the disease, not the symptom of falling prices.

Unfortunately, those New Deal programs that were designed to prop-up aggregate demand were overcome by attempts to balance the budget in 1936. Indeed, as the federal budget moved toward balance the economy slumped back into depression in 1937 (by some measures, the drop of economic performance in 1937 was more precipitous than the original decline at the beginning of the 1930s). As the economy unraveled, tax revenue plummeted and spending on social programs began to grow. The budget moved toward a growing deficit, helping to move the economy toward a weak recovery. Of course, the most important boost to demand came with the start of WWII, and continued in what is somewhat inaccurately called post-war “military Keynesianism.” The Great Depression came to an end, and the Keynesian “golden age” began.

Minsky’s trenchant analysis identified the difference between pre-war “small government capitalism” and post-war “big government capitalism.” When the size of the federal government rose from 3% of the nation’s output to some 20 to 25% of output it became able to provide a very large countercyclical force because when private demand fell (most importantly, investment spending), the government’s deficit would increase (largely automatically as tax

revenues linked to economic performance would fall even as income support spending would rise) and provide a needed boost to demand. More importantly, according to Minsky (1992), the rising deficit would prop-up corporate profits (as demonstrated in what is called the Levy-Kalecki profits equation<sup>2</sup>) and thereby help firms to meet their contracted payment commitments. In this way, falling private demand would not necessarily generate snowballing defaults on debts and culminate in a Minsky-Fisher debt deflation. In Minsky's view, this, together with intervention by the Fed as a lender of last resort to prevent bank runs, is what banished great depressions and debt deflations from the U.S. economy for the last six decades. The question is whether the post-war arrangements and financial structures have evolved to the point that "it" can happen again—a question we will address in the next section.

There is a third approach to dealing with price deflation, but it was never seriously considered until the 1970s with the rise of Monetarism. It is now the most commonly discussed. The central bank is supposed to be able to stop deflation by "pumping liquidity" into the economy. This of course follows on from the famous claim by Friedman and Schwartz that the Great Depression was caused by foolish Fed policy. When the Fed reduced the money supply, prices collapsed and generated widespread bankruptcy. The solution? Increase the rate of growth of the money supply. Commentators have not been specific, but there is a commonly held belief that Fed "control of the monetary pump" is the answer to deflation. Let us examine this possibility in a bit more detail.

Friedman once joked that we can analyze central bank injections of money into the economy by assuming that helicopters simply drop it from the sky. In the real world, no central bank would even consider such a policy. Rather, real world central banks either engage in open market purchases of sovereign debt, or lend reserves at the discount window.<sup>3</sup> It is very important to understand that central banks buy debt or lend at the discount window in order to provide banking system reserves.<sup>4</sup> In recent years, most analysts have come to recognize that provision of reserves is nondiscretionary from the point of view of the central bank; that is to say, reserves are provided only when the banking system is short of reserves. The reason is rather simple. When banks are short of reserves, they go to the overnight, interbank, market for reserves (called the fed funds market in the U.S.) to borrow the reserves they need. If the banking system as a whole is short of reserves, the "bids" to borrow exceed the "offers" to lend, placing upward pressure on the fed funds rate. All central banks operate with an overnight rate

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<sup>2</sup> In its simplest form, this approach demonstrates that profits are identically equal to investment, plus the government's deficit, less the current account deficit, plus consumption out of profits, and less saving out of wages.

<sup>3</sup> Depending on institutional arrangements, some central banks might also buy privately-issued debt; this is really not that much different from lending at the discount window against private debt that is deemed acceptable as collateral.

<sup>4</sup> Conversely, central bank open market sales, or net reductions of outstanding discounts, drain reserves from the banking system.



target, and when the market rate is bid above the target rate band, the central bank intervenes to provide reserves. The only choice the central bank has is whether to lend the reserves at the discount window, or to provide them through open market purchases. In the past, the Fed has experimented with borrowed reserve and with nonborrowed reserve targets, but total reserves (the sum of the two) cannot be set discretionarily by the Fed (the Fed found that if it constrained growth of one of these components, the other simply grew faster).

However, in recent months, some commentators have asserted that even if the fed funds rate target gets close to zero, the Fed will still be able to provide stimulus by “pumping liquidity” into the economy. (See Bernanke 2002 for the more-or-less definitive statement.) Some have said this will be accomplished by buying longer-term government bonds, or even by purchasing privately-issued debt. However, once the banking system has all the reserves it wishes to hold, further purchases by the Fed will simply generate excess reserve positions. This will place downward pressure on the fed funds rate, ultimately driving it to zero. Once a zero fed funds rate is reached, additional purchases by the Fed will simply cause a substitution on bank balance sheets of non-earning reserves for bonds. The end result will not be that the money supply has increased, but rather that banks will hold more (excess) reserves but fewer bonds. In addition, the fed funds rate will be stuck at zero, and it is probable that interest rates on longer maturity bonds will also be reduced.<sup>5</sup> Indeed, the Fed can achieve a zero fed funds rate any time it likes simply by leaving some excess reserves in the banking system (this is how the Bank of Japan keeps its overnight rate at zero). It is possible that moving to a zero fed funds rate target could add some stimulus to the economy (Japan’s experience to date should cause one to doubt the strength of such medicine), but once a zero rate is reached, monetary policy becomes impotent.<sup>6</sup> It is really not helpful to imagine helicopter drops, nor to talk of “pumping liquidity” into the economy—all that will really result is a zero fed funds rate target.

In a recent interview, Milton Friedman admitted that evidence accumulating over the past several decades has thoroughly discredited the two main Monetarist beliefs he once held: First that the central bank can and should hit monetary targets and second that the money supply is reliably related to prices. (London, 2003) While we are not sure what his views are concerning this current discussion about “pumping liquidity” into the banking system to fight inflation, we are certain that such pronouncements are not helpful to policy formation.

## **THE WORST CASE SCENARIO: A Debt Deflation**

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<sup>5</sup> Indeed, “operation twist” of the early 1960s tried to lower longer-term interest rates as the Fed sold short-term bonds and bought long-term bonds.

<sup>6</sup> In fact, maintaining or increasing bank holdings of undesired, excess, reserves could backfire by reducing bank profits (since reserves do not earn interest).

Hyman Minsky warned that a small government economy with complex financial relations would be subject to periodic episodes of debt deflation. We have already examined the role that big government can play in helping to stabilize demand. (Papadimitriou and Wray 2001a, 2001b) It is necessary to briefly explain why financial arrangements matter. Minsky emphasized that the new stage of capitalism developed in the early 20<sup>th</sup> century included increased reliance on external finance of investment spending. According to Minsky, as the 20<sup>th</sup> century progressed, a “layering” of finance developed, with ever-larger portions of positions in assets financed by borrowing. Ironically, the existence of big government and the absence of depressions and debt deflations in the post-war economy actually encouraged “balance sheet adventuring” through increased leverage (or borrowing). Indeed, any historical debt series shows that private debt ratios (whether measured as debt-to-income or debt-to-net worth) have trended upward in the post-war period. Some periods, especially the 1980s and 1990s, show sharp accelerations of such trends. Minsky attributed the 1980s “explosive” growth of debt leveraging to financial innovations, and in particular to increased use of leveraged buy-outs (in which prospective income flows of the take-over target were pledged against the loans used in the buy-out). Of course, many of these LBOs eventually led to bankruptcies because the debts ultimately could not be serviced. But Minsky would argue that even though individual defaults occurred, and even though financial crises sometimes resulted (as in the case of the Savings and Loan crisis of the 1980s), no general debt deflation was generated—in spite of the fact that increasingly severe recessions did hit the U.S. economy. This can be attributed to the combination of “big government” deficits that put a floor to aggregate demand, and to quick intervention by the “big bank” Fed as necessary to stop financial crises from spreading.

However, Minsky also worried that absence of a debt deflation encouraged increasingly fragile financial positions—and, as just mentioned, debt ratios have indeed climbed steadily. Could “it” (debt deflation) happen again? Yes, Minsky thought, it might. Let us quickly review developments that might have made that worst case scenario more possible.

First, the federal government has been “down-sized”—partly due to devolution of more responsibilities to state governments, partly due to reduced military spending, and partly due to the attempts to balance the budget (already discussed above). By the end of the 1990s, federal government spending had declined to just over 17% of GDP—a fall of some three percentage points below what was common in the postwar period. And, importantly, tax revenues had not fallen much—they were still running about 20% of GDP, in spite of the much-vaunted tax cutting efforts of President Reagan a decade earlier. What this meant is that a demand gap of nearly three percentage points had opened up. To be sure, slower economic growth since then has eliminated the budget surplus and generated a large deficit. However the point remains that the government budget has been structured to run surpluses at moderate rates of growth so as to

act as a drain on demand (called “fiscal drag” in the early 1960s)—and this exerts a chronic drain on disposable incomes and profits, making it harder to service debt that was emitted in each expansion.

This has been made worse by another development over the past two decades—the chronic and growing trade deficit. This deficit now runs some 5% of GDP. When we add together the tendency to run budget surpluses and the trade deficit, we have a “leakage” of aggregate demand that reaches to 6% or 7% of GDP when the economy grows robustly. This leakage must be made up by a private sector “injection,” that is, through spending in excess of income by households and firms taken as a whole. It is thus no coincidence that the Clinton boom was characterized by a private sector (business and personal sector) deficit that reached above 6% of GDP. There are two further considerations related to private sector deficits. First, firms in the U.S. have become more exposed to prices of imports produced in low-cost developing nations. This has made it more difficult to maintain prices of final output, hence, has made debt service more precarious. And, second, private sector deficit spending has meant acceleration of growth of private indebtedness. Hence, exactly at the time that firms have greater difficulty in holding prices steady to ensure they can service their debt, their indebtedness has risen.

The Clinton expansion was unusual not only for the extent of borrowing by firms, but also because consumers were borrowing heavily to allow them to deficit spend. Mirroring the effect on firms, competition from low-wage nations has also imperiled ability of households to service their rising indebtedness out of wage income. As production shifts off-shore, or as it is simply reduced due to low demand, more households find their incomes reduced and begin to experience difficulty making payments on debts run-up over the course of the expansion. While the pace of personal borrowing has subsided a bit in recent months, it is no secret that consumers have carried the economy since 2000, largely by borrowing against home equity. As late as the first half of 2003, household debt was still growing at 10 percent per year—and household debt now stands at 83.5% of national income, up from 76% in 2000. (Crooks 2003)

The aftermath of the bursting of Wall Street’s bubble is also important. Many households lost financial wealth as equity values plummeted, creating some financial distress and leading to some moderation of consumption. What is only now being realized, however, is the long-term damage that has been done to the private pension system. About 44 million private sector workers and retirees are covered by defined benefit plans, which typically hold portfolios biased toward equities holdings. The three-year bear market has already forced some of these defined benefit plans into default, and estimates place the remaining plans some \$400 billion short. (Walsh 2003a, 2003b, 2003c) Unless Congress approves relief, companies will have to contribute \$125 billion next year, and because there is a long lag built into the system,

even if the summer equity price rally continues firms will have to continue to make such contributions for several years to come.<sup>7</sup> The dilemma is that forcing firms to set aside more cash for their pension plans will force them to cut elsewhere—adding to the deflationary pressures. Alternatively, some firms will use bankruptcy or mergers to eliminate defined benefit plans—which increases the burden on retirees. If equity markets do not recover and begin to post moderate gains, and if the economy does not begin to grow more rapidly to generate household income and corporate profits, the Pension Benefit Guaranty Corporation (PBGC the government agency that guarantees pensions) could, according to Treasury Secretary John W. Snow, face a “financial meltdown similar to the savings-and-loan collapse of 1989.” (Walsh 2003a)

In recent months, concerns have also arisen about the quasi-governmental home mortgage guarantors, Freddie Mac and Fannie Mae—technically government-sponsored enterprises (GSEs) that are widely believed to have the “full faith and credit” of the U.S. government behind them. Together, they own or guarantee 42% of the U.S. mortgage market. Freddie Mac is accused of mis-stating earnings and has recently ousted four of its top managers. It has been reported (Bloomberg 2003) that the European Central Bank is selling-off its portfolio of Freddie Mac and Fannie Mae securities, and has advised its twelve member central banks to do the same. The yield spread between securities issued by these agencies and U.S. Treasury debt has widened on worries about credit risk. More generally, it has become apparent that U.S. real estate markets may be approaching a peak and mortgage rates appear to have reached bottom and started upward. If real estate markets cool and some regions begin to experience falling values, the entire mortgage-backed securities market could be in trouble.

Ultimately, it is probable that the federal government would bail-out the PBGC, Freddie Mac, and any other GSE that threatened to fail. The question is at what point would the government step in, and what conditions would it impose on the agencies it rescued. When the savings and loans failed, the Bush (senior) administration’s rescue plan was formulated and executed in such a way that asset prices were depressed by “fire-sales” of thrift assets by the Resolution Trust Corporation. As it turned out, this did not generate a general asset price deflation because the long 1990s expansion together with the post-1987 stock market bubble allowed asset prices and financial institution balance sheets to recover. It is at this point impossible to know how the current Bush (junior) administration would react to a possible crisis involving the PBGC or any GSE. It should be remembered that most of the thrift industry’s excesses came after the Reagan recession, when they were encouraged to grow fast to try to

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<sup>7</sup> Congress is considering a new law that would temporarily relieve firms of their obligation to contribute more money to pension programs that are underfunded. At one point, discussion became so heated that Democrats stomped out of a session of the House Ways and Means Committee, and the panel’s chairman called the Capitol police.

restore profitability. Indeed, the final collapse came in the middle of a long expansion that had been fueled by large government deficits (rather than solely by private borrowing). By contrast, our current situation comes at the end of the second of two very long expansions (Reagan's and Clinton's) and very rapid growth of private sector debt for more than a decade and a half. In Minsky's terminology, today's economy (taken as a whole) is much more fragile than it was during the S&L crisis.

The final point we would make here concerns the financial position of state budgets—which is the worst since the Great Depression. This has recently received a great deal of press, especially because of the situation in California—the governor of which faces a recall in part because of its budget problems. The state already cut \$12 billion from its spending and plans to cut at least another \$8 billion for this year. (Uchitelle 2003) Even that will not be enough, so the state has been forced to engage in creative accounting—for example, by selling the state's right to collect tobacco settlement money—and borrowing. Bond rating agencies have lowered the state's debt to near junk bond status, and the interest rate spread on California general obligation bonds over Thomson Financial Triple-A interest rates is now twice as large as it was during the recession of the early 1990s, or the Orange County financial crisis of 1994-5. (Fuerbringer 2003a) While California's situation is arguably the worst, states have been forced to cut between \$20 and \$40 billion, and some have raised taxes as well. All but two states are required by their constitutions or statutes to balance budgets, but what this means in practice is that they only need to attempt to submit balanced budgets for the coming year. Hence, there is a great incentive to overestimate revenue and to underestimate expenditures. It is likely that very large deficits will open-up over the coming year as tax revenue continues to fall far short of projections. State income tax revenues are closely tied to federal income taxes, which are falling sharply and show no signs of recovery (for the first nine months of the current fiscal year, federal individual income tax receipts were down \$39 billion, and corporate income taxes were down \$18 billion compared to the same period last year; since 2000, federal tax receipts have fallen by \$269 billion—the first time revenues have fallen for three straight years since the Great Depression). (Weisman 2003) Unlike the federal government, state and local governments can be (and occasionally are) forced to default on their debts. Even if they do not, budget cutting, lay-offs, and tax increases will begin to take a greater toll on the economy this year for the simple reason that states had already made all the least painful adjustments during the past three years. The financial situation of states has already been proclaimed to be the worst since the Great Depression. But if our prognosis is correct, things are likely to get very much worse before they get better.

## **CONCLUSION: Likely Prospects and Effective Policy Responses**

Falling indices of output prices—what most commentators seem to worry about—can be generated by several mechanisms: productivity increases, quality increases and hedonic imputations of prices, competition from low cost producers, or depressed aggregate demand. These causes are not equally pernicious. Falling output prices, in turn, can have deleterious effects especially on the ability to service debts fixed in nominal terms, but that burden depends of course on the indebtedness of households and firms.

We believe that the probability of significant deflation of output prices—even as imperfectly measured by conventional indices—is not great even with increased foreign competition, productivity increases, and falling aggregate demand. Nor do we believe that falling output prices, alone, would be sufficient to wreak havoc on the economy. Rather, the real danger comes from the possibility of a deflation of asset prices. These can fall much faster and farther than can prices of output—although we do acknowledge that falling output prices can be a contributing cause of falling asset prices. Stock prices are already down significantly from the year 2000 pre-recession peak, and the recent Levy Economics Institute study by Arestis and Karakitsos (2003) makes a strong case that a double-dip recession could cause them to fall by as much as another 25%. Real estate prices also appear to be excessive compared with long-term trends, a result of recent low mortgage rates and, perhaps, lack of alternative assets with high prospective returns. Given the rising leverage ratios that have become increasingly accepted by financial markets, the margins of safety have been reduced considerably over the past two decades. What this means is that fairly small negative movements of the value of real estate (and other) assets can reduce the value of assets below the debt issued in their purchase. (Indeed, the effects of a real estate market crash would be more wide-spread across American households than were the effects of the stock market tumble after 2000.) In a worst-case scenario, this would lead to “fire sales” of assets, pushing their prices down farther and setting off a classic Minsky-Fisher debt deflation spiral.

One might view the consequences of a debt deflation as rather benign, because, after all, the physical assets (the homes, the office buildings, the plant and equipment) remain even as the debt is wiped-out. Minsky called this a process of financial “simplification”—it allows the economy to emerge from a deep recession (or depression) with little debt. However, experience shows that the impacts on expectations and confidence are so devastating that recovery can take a decade or more (see the discussion of Japan below). Meantime, the suffering of the unemployed is intolerable for any democratic nation.

Is there an alternative? After WWII, Evsey Domar (1944) remarked that the best solution to heavy indebtedness is economic growth—not debt deflation. But not just any type of growth will alleviate over-indebtedness of the private sector. It was, after all, the relatively

robust and private-sector-led growth during the Clinton expansion, as well as the sluggish recovery since 2000, that led to the current high debt loads. In 1963 Minsky argued that not all expansions have the same impact on private sector balance sheets; in particular, an expansion led by the domestic private sector must, all things equal, increase private sector indebtedness. More recently, Godley (1999, 2003) has carefully constructed for The Levy Economics Institute a three sector model—domestic private sector, public sector, and foreign sector—that allows us to relate the balance sheets of each to spending flows. Put concisely, if our economy tends to run a current account deficit then the government sector must run a deficit of equal size (relative to GDP) to permit the domestic private sector to run a financial balance (income equal to expenditures). In the case of the U.S., given our trade deficit of 5 percent of GDP, the government deficit must also be equal to 5 percent of GDP to allow our private sector to spend an amount just equal to its income. If the government deficit is smaller, the private sector must deficit spend, meaning its outstanding debt will grow. Now, the relations among these variables might be quite complex, and it could be the case that smaller government deficits generate smaller trade deficits through complicated feedback effects. But Minsky's point remains that in the case of the U.S., trying to rely on private sector spending to fuel an expansion in the context of “fiscal prudence” that attempts to achieve government budget surpluses, will tend to increase private sector indebtedness and generate the kind of financial fragility that makes a debt deflation possible.

The U.S. federal government budget has already relaxed by some 7% of GDP, moving toward a deficit that might reach 5% of GDP before the end of this year. This has gone a long way toward allowing the private sector to bring its spending into line with its income. However, when the economy has been sluggish in the past, the private sector has typically retrenched its spending much more, such that it spends significantly less than its income. On average, except when the economy grows robustly, the private sector runs a surplus (spending less than its income) equal to some 2-3% of GDP (in downturns that surplus can sometimes run twice as high). If the current account deficit remains in the 4-5% range, the government sector as a whole (federal, state, local) would have to run a deficit of 7-8% of GDP to allow such a large private sector surplus. (Papadimitriou et al 2002) As discussed above, state budgets are currently in deficit and are likely to remain in deficit for some time to come. However, states are prevented from running planned deficits—by their own statutes and by markets. Hence state (and local government) budget deficits lead to discretionary spending cuts and tax increases. So long as state budgets remain in trouble, states will be “downsizing” and acting as a drain on the economy. Only the federal government can run sustained and discretionary deficits that will allow the private sector to firm-up its balance sheets.

One possible scenario is that the economy will stagnate as private sector spending falls, lowering demand and income, and, thus, tax revenues. Federal government spending would not fall (at least, not as quickly), so the budget deficit will continue to expand until it reaches the 7-8% of GDP that is necessary to allow the private sector to run a 3% surplus. The large federal deficit would then maintain aggregate demand at a level such that GDP growth remained slightly positive; private sector balance sheets would improve very slowly as spending less than income would allow households and firms to gradually pay-down some debt. Barring large defaults (say, by mortgage lenders or pension funds) that might snowball, the overall financial position would eventually improve to the point that private spending would begin to grow. Net job creation would resume, and the economy would finally enjoy an expansion. We can label this the “muddling through” scenario. The question, of course, is how long this process could take.

For an example, we might look to the case of Japan. While it is too early to tell, it appears that Japan is finally beginning to emerge from recession, after some 14 years with little growth. The national government’s budget deficit has hovered in the range of 7% to almost 9% of GDP for several years, and appears to have finally overcome the headwinds created by private sector retrenchment. Unlike the U.S., Japan runs large current account surpluses that allow larger private sector surpluses. However, the Japanese household is famously more “thrifty” than the typical American consumer—which means that the sum of the current account surplus and government budget deficit must be very large in Japan to allow the private sector to achieve its desired surplus of income over spending. We believe there are cultural differences as well as economic differences (such as a better social safety net in the U.S.) that make it likely that the turn-around in the U.S. will be quicker than that of Japan. Still, a Japanese-like stagnation could take hold in the U.S. for an extended period of time before a federal budget deficit of 7-8% of GDP would allow improvements in the confidence of the private sector. As private sector indebtedness was worked-off, the private sector would also accumulate federal government bonds (an 8% federal deficit today would add over \$800 billion of safe government debt to the economy annually). After several years of deficits in this range, some trillions of government debt would be added to private sector portfolios, going a long way toward replacing wealth lost in the stock market downturn as well as the (probable?) coming real estate downturn. That appears to be exactly the process that is turning around the Japanese economy.

A more favorable scenario might be achieved with a quicker, discretionary, federal government stimulus package. A broad-based tax cut could boost household incomes allowing improvement of balance sheets without requiring curtailment of consumption. Capital gains tax cuts, cuts of taxes on dividends, or even across-the-board income tax cuts are not the best way to do this, for the simple reason that these will not put much money into the hands of most



Americans. Most readers are well-aware that capital gains and dividends are concentrated in the hands of the highest income households, but they might be surprised to hear that income tax cuts won't help most Americans very much. But this is simply because most Americans pay little to nothing in the way of federal income taxes. (In 1998, the top 13% of all taxpayers paid almost 70% of all federal income tax; the bottom three-quarters of income earners paid only 17% of all federal income taxes. Wray and Tcherneva 2001) A far better way to help most Americans is to cut payroll taxes—some estimates show that 80% of all taxpayers pay more in payroll taxes than in income taxes. We do not want to revisit the debate about Social Security's finances here, but to allay concerns that this will "gut" the program, we suggest a refundable tax credit equal to 50% of (OASDI) payroll taxes paid by workers (this would represent a tax credit of about \$110 billion in 2003), to be deducted from "general revenues" and not from Social Security's revenues. This could be made temporary, to be phased out as the economy recovers. We would also favor a permanent tax credit to employers equal to 50% of their (OASDI) payroll taxes paid. This would not only reduce costs but would also encourage employment and make American labor more competitive with foreign labor. Together, these provisions would add some \$220 billion annually to the economy, and would increase the federal deficit (all else equal) by a bit over 2% of GDP. This would leave some room for increased emergency federal government spending. We advocate increasing the federal government's emergency provisions to states in order to halt pressures on them to slash budgets. An additional \$100 billion to be allocated to states would allow them to eliminate budget shortfalls and to deal with increased needs until the economy turns around.

Much of this stimulus will be phased-out as the economy recovers. In our view, the federal government's "structural" or full employment budget is far too tight, and even with increased military spending for the war on terror (that will continue for the foreseeable future) and with the various tax cuts already enacted, some "permanent" relaxation will be required. In addition to the payroll tax credit for employers discussed above, we would advocate increased federal government support for public infrastructure investment, in the range of 1% of GDP annually. Perhaps most of this could be devolved to state and local government, with the federal government providing funding of projects that met approved standards. (Spending could be postponed in an economic boom if inflationary pressures threaten.) There is overwhelming evidence that spending on public infrastructure has been inadequate for more than three decades. (The recent evidence of the crippling electricity blackout clearly points to the immediate need to rebuild the country's energy system, while annual reports show the state of disrepair of our nation's bridges.) At least some studies suggest that such spending has a beneficial impact on private investment, in addition to the obvious benefits that accrue from the infrastructure itself.

In conclusion, to the extent there is evidence of output price deflation, or, at least, of deflationary pressures, we view this mostly as a symptom of an underlying disease. That disease is inadequate demand. The causes of the disease are surely multifarious: overindebted households and firms, competition by low cost producers overseas (at least some of this coming from American firms that have relocated), serious demand problems outside the U.S. (again, for a wide variety of reasons), state and local government budget problems, and excessive investment and saturation in some sectors of the economy (notably, the high tech sector). To that list, we would add—and single out as perhaps the most important contributing factor—the excessively tight federal government budget that had its beginnings in the balanced budget initiatives at the end of the 1980s. Fortunately, this factor is (economically) the easiest to remedy. By contrast, there are no easy solutions to most of the other factors depressing demand. But the federal government budget can be shifted to a more fiscally neutral stance through broad-based tax cuts and new spending programs. The barriers are political, not economic. This does not mean that we discount the size of the shift of thinking within the Beltway that will be required—particularly by Democrats who now want to seize on the growing deficit as a campaign issue with which to do battle with the administration. However, if views of the proper role of the federal government do not change, the probable economic scenarios range from bad to worse.

## REFERENCES

- Altman, Daniel. 2003. "Jobless Rate Hits 6.4%, Highest Level in 9 Years." *New York Times*, July 4.
- Andrews, Edmund L. 2002. "Greenspan's Speech Focuses on Deflation, Not Inflation." *New York Times*, December 20.
- Arestis, Philip and Elias Karakitsos. 2003. "Assets and Debt Deflation in the United States." Public Policy Brief No. 73. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.
- Bell, Stephanie and L. Randall Wray. 1998. "Can We Grow Faster?" *Report 8 (2): 7-10*. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.
- Bernanke, Benjamin. 2002. "Deflation: Making Sure 'It' Doesn't Happen Here." Remarks by Governor Ben S. Bernanke Before the National Economists Club, Washington, D.C., November 21. ([www.federalreserve.gov/boarddocs/speeches/2002/200221121/default.htm](http://www.federalreserve.gov/boarddocs/speeches/2002/200221121/default.htm)).
- Berenson, Alex. 2003. "Fannie Mae's Loss Risk is Larger, Computer Models Show." *New York Times*, August 7.
- Bernstein, Richard. 2003. "Schroeder Offers Plan for Ending Germany's Economic Slump." *New York Times*, March 15.
- Bloomberg. 2003. "ECB Recommends Central Bank Sell U.S. Agency Debt, Person Says." July 28.
- Crooks, Ed. 2003. "Debts Snowball as Rules of Husbandry are Ignored." *Financial Times*, July 30.
- Davey, Monica, with David Leonhardt. 2003. "Jobless and Hopeless, Many Quit the Labor Force." *New York Times*, April 27.
- Domar, Evsey D. 1944. "The 'Burden of the Debt' and the National Income." *American Economic Review* (December): 798.
- Firestone, David with Jonathan Fuerbringer. 2003. "Fed Chief Gives Bright Outlook; Steady on Rates." *New York Times*, July 16.
- Fuerbringer, Jonathan. 2003a. "California Bond Prices Reflect State's Turmoil." *New York Times*, July 29.
- Fuerbringer, Jonathan. 2003b. "Demand Rises, But Will U.S. Manufacturing Rebound?" *New York Times*, July 30.

- Godley, Wynne. 1999. "Seven Unsustainable Processes: Medium-Term Prospects and Policies for the United States and the World." *Strategic Analysis*. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.
- . 2003. "The U.S. Economy: A Changing Strategic Predicament." *Strategic Analysis*. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.
- Godley, Wynne and Alex Izurieta. 2001. "The Developing U.S. Recession and Guidelines for Policy." *Strategic Analysis*. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.
- Godley, Wynne and L. Randall Wray. 1999. "Can Goldilocks Survive?" Policy Note 1999/4. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.
- Heise, Michael. 2002. "Germany Needs Reform, Not Reflation." *Financial Times*, October 31.
- Krugman, Paul. 2002. "Dropping the Bonds." *New York Times*, July 25.
- Landler, Mark. 2002. "Europe Strains to Put Laggards Back in Line." *New York Times*, October 27.
- Leonhardt, David. 2003. "Greenspan, Broadly Positive, Spells out Deflation Worries." *New York Times*, May 22.
- London, Simon. 2003. "Lunch with the FT: Milton Friedman." *Financial Times*, (FT.com) June 6.
- Minsky, Hyman P. 1992. "Profits, Deficits and Instability." In Dimitri B. Papadimitriou, ed. *Profits, Deficits and Instability*. London: Macmillan.
- . 1986. *Stabilizing an Unstable Economy*. New Haven: Yale University Press.
- Morgenson, Gretchen. 2003. "Suddenly, Greenspan Is, Well, Mortal." *New York Times*, July 20.
- Osborn, Andrew. 2002. "EU Issues Ironic Censure to Once Mighty Powerhouse." *The Guardian*, November 14.
- Papadimitriou, D. B., Anwar Shaikh, Claudio dos Santos and Gennaro Zezza. 2002. "Is Personal Debt Sustainable?" *Strategic Analysis*. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.
- Papadimitriou, D. B. and L. Randall Wray. 2001a. "Are We All Keynesians (Again)?" Policy Note 2001/10. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.
- . 2001b. "Fiscal Policy for the Coming Recession: Large Tax Cuts are Needed to Prevent a Hard Landing." Policy Note 2001/2. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.

- . 1998. “What to Do with the Surplus: Fiscal Policy and the Coming Recession.” Policy Note 1998/6. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.
- Roby, Edward. 2002. “Economists Urge Austerity, ‘Five Wise Men’ Blame Labor and Welfare Policy for Stagnation.” *Frankfurter Allgemeine Zeitung Weekly*. November 15.
- Rohter, Larry. 2003. “Argentina Looks to a New Leader.” *New York Times*, May 25.
- Rosenbaum, David. 2003a. “White House Sees a \$455 Billion Gap in ’03 Budget.” *New York Times*, July 16.
- . 2003b. “Senate Adopts a Tax Cut Plan of \$350 Billion.” *New York Times*, May 16.
- Tony Smith. 2003. “Power Shift Between Argentina and the I.M.F.” *New York Times*, July 15.
- Uchitelle, Louis. 2003. “Red Ink in States Beginning to Hurt Recovery.” *New York Times*. July 28.
- Walsh, Mary Williams. 2003a. “New Rules Urged to Avert Looming Pension Crisis.” *New York Times*. July 28.
- . 2003b. “Senate Panel Expected to Vote on Bill to Aid Pension Plans.” *New York Times*, September 16.
- . 2003c. “Senate Panel Votes to Give Pension Relief to Companies.” *New York Times*, September 18.
- Weisman, Jonathan. 2003. “The Amazing Disappearing Tax Revenue: Officials, Economists Ponder Whereabouts.” *Washington Post*. July 26: E01.
- Wray, L. Randall. 2003. “The Perfect Fiscal Storm.” *Challenge* (Jan-Feb).
- . 2000. “Can the Expansion Be Sustained? A Minskian View” Policy Note 2000/5. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.
- . 1999. “Surplus Mania: A Reality Check” Policy Note 1999/3. Annandale-on-Hudson, N.Y.: The Levy Economics Institute.
- Wray, L. Randall and Pavlina Tcherneva. 2001. “Tax Cut Facts.” Policy Note 01/01. Center for Full Employment and Price Stability.