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Bernanke's paradox: can he reconcile his position on the federal budget with his recent charge to prevent deflation?

Abstract: *This paper examines Federal Reserve Chairman Ben Bernanke's recipe for deflation fighting and the specific policy actions he took in the aftermath of the 2008 financial crisis. Both in his academic and policy work, Bernanke has made the case that monetary policy is able to stem deflationary forces largely because of its "fiscal components," and that governments such as those in the United States or Japan face no constraints in financing these fiscal components. On the other hand, he has recently expressed strong concerns with the size of the federal budget deficit, calling for its reversal in the name of financial sustainability. This paper argues that these positions are fundamentally at odds with each other and resolves the paradox by arguing on theoretical and technical grounds that there are no fundamental differences in financing conventional government spending programs and what Bernanke considers to be the fiscal components of monetary policy.*

Key words: *Bernanke, crowding out, deflation, financial sustainability, monetary policy.*

It is rare that a scholar who has made his name studying the Great Depression would be charged with the task of preventing the onset of another. This was the peculiar position in which Ben Bernanke found himself only two years after his appointment as Chairman of the Federal Reserve Board. Bernanke's first major task as a policymaker was to swiftly deal with the fallout from the 2008 financial meltdown. His subsequent policy moves have been controversial and, from the point of view of mainstream theory, unorthodox. And yet they have closely followed a blueprint for monetary policy in a deflationary environment that he had developed for the context of the Japanese crisis during the 1990s.

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In the process of formulating those specific policy moves, Bernanke has made the peculiar claim that in deflationary circumstances, monetary policy is effective largely because of its "fiscal components" (Bernanke 2000). To achieve its policy objectives, the monetary authority must collaborate closely with the fiscal authority in order to finance however large a fiscal stimulus is necessary. The government's ability to fund these large fiscal components is in no way financially constrained in the cases of Japan or the United States. This position is intriguing for several reasons. It endows fiscal policy with a new form of effectiveness long denied by the mainstream, it undermines the oft-assumed omnipotence of monetary policy, and it proposes that there are no financial constraints to government spending. At the same time, in an apparent 180-degree reversal of this position, Bernanke has recently joined the chorus of deficit hawks, arguing that the size of the government deficit has become unsustainable and must promptly be reversed to reduce the onerous tax burden on future generations.

In other words, Bernanke has made two seemingly contradictory statements: (1) that the crucial "fiscal components" of monetary policy for fighting deflations can be financed without limit, and (2) that the resulting government deficits can become "too large" and must be reversed to preserve fiscal sustainability. Resolving this paradox is the purpose of this paper.

To do so, the paper will first review Bernanke's unorthodox policy recommendations to assess the theoretical import of what he refers to as the "fiscal components" of monetary policy. These new contributions can be found in Bernanke's theoretical analysis of the role of monetary policy in Japan during the 1990s and in his own specific policy moves to prevent a similar problem in the United States after the 2008 financial debacle. Next, the paper considers Bernanke's view of government spending in the context of the theoretical developments in the mainstream and Post Keynesian theory to expound on the issue of sustainability. Third, the paper illustrates that the paradox in Bernanke's positions stems from his inability to reconcile the new view of government finance in the mainstream with the old crowding-out arguments. Finally, the paper resolves Bernanke's paradox and delineates the difference between solvency and sustainability and between the real and financial aspects of stabilization policy.

Bernanke's unorthodox approach to monetary policy: the role of "fiscal components"

Bernanke's policy actions immediately after the September 8, 2008, market collapse may appear improvised. Considering his scholarship,

however, on the protracted Japanese recession during the 1990s, it becomes clear that they closely followed a specific theoretical framework for policy action during deflationary episodes. Unpacking this framework and its implications is the first step to understanding Bernanke's paradox.

Theoretical arguments for the Japanese context

In a 2000 paper titled "Japanese Monetary Policy: A Case of Self-Induced Paralysis?" Bernanke argues that the monetary authority has at its disposal all the necessary tools to fight deflation. In rejection of the argument that monetary policy in severe crises is like pushing on a string, Bernanke claims that the Bank of Japan (BOJ) simply did not push hard enough to bring the economy out of the recession (ibid., p. 151). His position is that, even in a liquidity trap scenario, the monetary authority has the ability to increase nominal aggregate demand and the price level, which in turn would lead to an increase in real economic activity (ibid., p. 158). His solution includes four key policy moves that have some unusual implications with respect to monetary policy effectiveness.

First, he argues that the monetary authority must articulate its steadfast commitment to a zero interest rate policy and a specific inflation target. Such a commitment will have the effect of minimizing uncertainty about the future, anchoring expectations over the long run, and putting downward pressure on long-term interest rates. Vague policy objectives, in Bernanke's view, were some of Japan's key failures (ibid., p. 159).[1] The second move is exchange rate depreciation. Considerable currency devaluation via large open market sales of the yen is expected to generate sufficient import price inflation and rising foreign demand for Japanese goods and services. Third, if depreciating the currency fails to boost aggregate demand, Bernanke proposes that the BOJ engage in money-financed fiscal transfers, which in his opinion, amount to a "helicopter drop" of money (more below) that must necessarily raise domestic prices and demand. Fourth, Bernanke argues that the central bank can always engage in nontraditional discount window and open market operations (OMOs), in which it purchases or lends against a wide variety of assets, such as long-term bonds, commercial paper, mortgage-backed securities, and others. It is important to stress that, for Bernanke, the final fourth move of nontraditional monetary policy may not even be necessary if money-financed fiscal transfers of sufficient size have been implemented (i.e., the third policy move).

[1] Note that although Japan has maintained a virtual zero interest rate policy since the late 1990s, its economy did not launch a serious recovery.

This framework for policy action requires careful consideration because it suggests a new view of both monetary *and* fiscal policy effectiveness with new implications for central bank independence. Before assessing these theoretical contributions, we examine Bernanke's policy moves in 2008 and 2009 to illustrate how they followed the general recipe he developed for the case of Japan.

Policy action in the case of the United States

The Fed moved quickly to implement some version of the four policy moves outlined above. First, it cut the interest rate to zero on December 16, 2008. The specific federal funds target was allowed to fluctuate between 0 percent and 0.25 percent, and the Fed made a commitment to a low interest rate environment for the foreseeable future.[2] Although Bernanke is known for his inflation-targeting stance, he has *not* articulated an explicit inflation target as the Fed's policy objective (a policy omission for which he criticized the BOJ). The second move involved putting downward pressure on the exchange rate. Instead of engaging in outright open market sales of dollars, the Fed decided to offer unlimited dollar loans to foreign entities. The initial effect of the global financial meltdown was to push the demand for U.S. currency up. In order to alleviate these exchange rate pressures vis-à-vis the euro and other major currencies, the Fed set up a series of swap lines with foreign central banks to provide liquidity to foreign governments and subsidiaries of U.S. banks abroad. Hence, technically, the second policy move above was accomplished via swap lines, not via direct foreign exchange intervention. In the meantime, the Treasury had been hard at work trying to convince the Chinese government to readjust the value of its currency in the hope that it would reduce the U.S. trade deficit. While the current account balance did improve considerably, it was not because of increased demand for domestic goods. Both U.S. imports and exports collapsed, but the decline in the former was greater.

In addition, the interest rate cut was accompanied by a massive expansion of the Federal Reserve balance sheet. The Fed set up a number of lending facilities that did not previously exist to provide liquidity to domestic financial institutions on the verge of collapse. The Term Auction Facility (TAF), Primary Dealer Credit Facility (PDCF), Asset-Backed Commercial Paper Money Market Fund Liquidity Facility (AMLF),

[2] For a detailed discussion on how the Fed struggled to hit its policy target during this tumultuous time, see Lavoie (2010).

and several others[3] were new institutional arrangements that allowed the Fed to lend against a wide range of collateral than via traditional discount lending or OMOs, as well as to many different counterparties, not previously eligible for loans from the Fed. Some of the collateral included asset-backed securities, government agency securities, commercial paper, money market mutual funds, and others. At the same time, the Fed engaged in outright purchases of selected toxic assets, such as those from the Bear Stearns' portfolio via the Maiden Lane program, as well as most AIG assets and some toxic assets from the General Motors and Citigroup portfolios via the Troubled Asset Relief Program (TARP). Faced with a considerably higher long-term rate, early in 2009, the Fed also announced that it would continue to inject liquidity into markets by buying long-term Treasury securities, concentrating on two-year and ten-year government debt. All of these programs and facilities closely mirror the fourth policy move above of nontraditional open market purchases and discount window lending operations.

At first glance, the prescription worked, at least in bringing short-term rates down (even as long-term interest rates remained stubbornly high, relative to policy objectives) and in supplying the financial system with liquidity, which provided a backstop to the massive liquidation of assets. This liquidity, however, did not manage to reflate the economy and generate vigorous output and employment growth. Indeed, many commentators today fear a double-dip recession. How effective the central bank was in resuscitating the economy is beyond the scope of this paper, but it should be noted that Bernanke's (2010b) call for a second round of central bank quantitative easing underscores the failure of the first. Nevertheless, whatever success monetary policy might have had so far, it is largely due to what Bernanke has called the "fiscal components of monetary policy" (2000, p. 164).

So the next question to examine is what exactly constitutes a "fiscal component" of monetary policy in the above-described four policy moves? Identifying these components also begs the questions: Where does monetary policy end and fiscal policy begin? Can we untangle the two, and what role exactly do these "fiscal components" play in macroeconomic stabilization?

[3] For more details on the various credit and liquidity programs and the Fed's balance sheet, see www.federalreserve.gov/monetarypolicy/bst_ratesetting.htm.

The role and meaning of the "fiscal components" of monetary policy

Using the bully pulpit, the Fed can declare its commitment to low interest rates and an inflation target (again, the latter was not done in 2008), but the impact of such announcements and verbal commitments is hard to assess. Setting and fine-tuning interest rates in practice (both the overnight and discount rates) is what we know as conventional monetary policy for macroeconomic stabilization, as is lending against financial assets via the "lender of last resort" function of the Fed. Currency depreciation, nontraditional OMOs, and money-financed fiscal transfers, however, are *not* monetary operations, even if they imply a sizable role of the Fed. The reason for this is that the Fed cannot pursue any of these latter three options without explicit authority or action from Congress or the Treasury.

Bernanke has recognized that with respect to currency depreciation, the legal authority for currency stability rests with the fiscal authority (in Japan it is the Ministry of Finance, and in the United States it is the Treasury) (ibid., p. 161). Although Bernanke does not do so in his writings, it is more appropriate to view open market sales of domestic currency (i.e., purchases of foreign currency) as *essentially fiscal operations.* This is because just like any other asset purchase on behalf of the Treasury, purchases of foreign assets or currencies, even if executed by the Fed, are essentially under the sanction of the fiscal agent. Although Bernanke does not explicitly treat them as fiscal operations, he is arguing that as long as there is a consensus between the two agents of government (the monetary and fiscal authorities) that currency depreciation is the objective, there would be no technical constraints to the central bank's ability to engage in such open market sales of domestic currency (ibid., pp. 161–162). Bernanke goes on to say:

> [If] the Bank of Japan prints yen and uses them to acquire foreign assets . . . [it] could drive down the value of the yen significantly. Further there seems little reason not to try this strategy. The "worst" that could happen would be that the BOJ would greatly increase its holdings of reserve assets. (ibid., p. 162)

In other words, the BOJ would essentially facilitate the government's purchases of an asset (in this case, foreign currency) by printing yen. This is what he considers to be the "fiscal component" of exchange rate depreciation pursued by the central bank under the directive of the fiscal authority.

The second fiscal component of monetary policy deals with OMOs. With respect to nontraditional OMOs, if the Fed lends against nontra-

ditional assets, it is executing its purely monetary lender of last resort functions but, this time, using nontraditional (and in the case of the United States, toxic) assets as collateral, thereby providing liquidity to financial institutions. But as markets for these instruments quickly evaporated in September 2008, the Fed took the additional role of becoming a market maker and improving the quality of banks' balance sheets by purchasing these assets outright. When the central bank buys these assets, monetary policy will have a "fiscal component"; when it lends against them, it will not. Furthermore, when the Fed buys these assets, Bernanke notes, it provides "gifts" to the private sector in the form of reserves (ibid., p. 164). It essentially provides something of value—default-risk-free assets (reserves)—in exchange for something the market has deemed worthless (mortgage-backed securities and collateralized debt obligations [CDO, CDO^2], etc.). Again, even though Bernanke calls such purchases "fiscal components" of monetary policy, operationally, legally, and in practice purchasing toxic assets from banks and other financial institutions such as Bear Stearns, AIG, Citi, or other institutions are, in fact, *purely fiscal operations.* They require an act of Congress to pass a budget and authorize the Fed to take ownership of these assets on behalf of the government.

Note that at least in theory, the implications from Bernanke's logic are that it need not come to this, namely, for the central bank to start buying such assets by providing free "gifts" in exchange. This is because in his view, the Fed, in coordination with the Treasury, can always finance large enough tax cuts or other fiscal transfers, which will have a considerable stabilizing effect on the economy via a wealth effect from the private-sector actors who receive the fiscal transfer. In other words, Bernanke is recommending that traditional fiscal policy is allowed to dominate (see Bernanke et al., 2004).

In either case, whether the central bank has financed the fiscal transfers or has purchased various nonperforming financial assets from banks, both operations are types of fiscal policies that generate "gifts" to the nongovernment sector (Bernanke, 2000, p. 164). This addition of net financial assets to private-sector agents is expected to produce a wealth effect that will boost private-sector demand. So whether the Fed buys foreign currency, toxic assets, or finances government expenditures, in all cases monetary policy has a fiscal component and is effective only because each of these policy moves increases the amount of reserves in the hands of the public (be they in the United States or abroad), who in turn are expected to boost their expenditures of U.S. goods and services, thereby producing an increase in output and prices.

In reality, Bernanke did not engage in purchases of foreign currency, so technically the currency depreciation via swap lines was not a consequence of the above-mentioned fiscal components. The swap lines are authorized by Section 14 of the Federal Reserve Act[4] and are intended to provide dollar loans to domestic or foreign entities. Consider, however, what may happen if some of the loans to foreign banks obtained via swap lines do not get repaid. The loan has already created an injection of dollar reserves in some private financial institution abroad, which in turn has already accumulated those financial assets. If that bank fails to return those reserves, this too could be interpreted as a fiscal operation because it would be an ex post socialization of a financial loss abroad; that is, since the Fed has already originated the loan, it will have to be booked as a "loss" if it does not get repaid.[5] To use Bernanke's terminology, since the loan has already been financed and reserves have already been created and deposited in the account of some foreign institution, in the event of nonrepayment, the loans will essentially turn into a "gift" to the foreign entity. The fact that the loan was not repaid represents a "loss" to the U.S. government in the *accounting sense.* The same, of course, would be the case if the Fed lent to a domestic bank and the bank failed to repay its loan. The difference is that the Fed has regulatory forbearance over domestic banks and can dissolve them, whereas it has no such power over delinquent foreign entities.

Finally, with respect to Bernanke's proposal for a "helicopter drop" of money via money-financed fiscal transfers, we observed several acts of Congress that passed large-scale fiscal stimuli, such as the American Recovery and Reinvestment Act of 2009. The resulting government deficits from this latter program produced the same kinds of "gifts" to the private sector—albeit small, relative to the "gifts" to the financial sector resulting from the extensive large-scale financial asset purchases

[4] Federal Reserve Act, Section 14, Open Market Operations, 1913 (available at www.federalreserve.gov/aboutthefed/section14.htm).

[5] In December 2007, the Fed established swap lines to alleviate dollar funding pressures overseas from the financial turmoil that emerged in as early as August 2007. The Fed continued making such currency swap arrangements in 2008 with foreign central banks, which in turn provided dollar loans to financial institutions under their jurisdiction. These dollar swap lines expired briefly in February 2010 but were quickly reopened on May 10, 2010, in response to the mounting solvency problems from the EU banking crisis (Flemming and Klagge, 2010). Given the peculiar arrangement of these swap lines, there is essentially no mechanism by which the Fed can take possession of the collateral that is backing the loans obtained by these foreign entities. Thus, a default on the dollar loans, especially in the euro area, is not a far-fetched scenario.

by the Fed. Whether it is Maiden Lane, TARP, the Recovery Act, or any other ongoing government expenditure program, fiscal policy is always financed by the Federal Reserve. No single government expenditure from these programs bounces, as all government payments are made good by the Fed via electronic reserve creation. When the Treasury spends, non-government entities that receive the income also receive brand-new bank deposits; this is because when the Fed clears the government expenditures, it credits private bank accounts with reserves. Whether it is financing the Treasury's TARP program or the Recovery Act, the Fed creates these reserves at the stroke of a pen (or keyboard) on behalf of the Treasury when purchasing toxic assets, financing unemployment insurance, providing aid to states, or supplying contracts to private companies. Although not explicitly recognized by Bernanke, all of these amount to exactly the same thing as his "fiscal components" of monetary policy.

In sum, although Bernanke's policy actions seemed impromptu, they followed the general framework for the stabilization policy he developed in the context of the crisis in Japan. What is particularly interesting here is the new implication from Bernanke's analysis, namely, that the fiscal agent has *empowered* monetary policy. According to one account, in the fateful days after the September 8, 2008, financial collapse, Bernanke rang up Treasury Secretary Henry Paulson and demanded: "We have to go to Congress and get some authority" because the Fed "cannot do this alone anymore" (Stewart, 2009, p. 75). Upon Paulson's protestations, Bernanke interrupted "Hank! Listen to me. We are done!" According to Stewart:

> It was the first time Fed officials had heard him raise his voice. "The Fed is already doing all that it can with the powers we have," Bernanke continued. One participant [in the conference call] recalled, "Ben gave an impassioned, linear, rigorous argument explaining the limits of our authority and the history of financial crises in the U.S. and abroad." That history showed that efforts to resolve such crises "are successful only when overwhelming force from all parts of government is brought to bear," the participant said. "It was an encyclopedic tour de force." It was as though Bernanke were the professor and Paulson the student. (ibid., p. 75)

This piece of journalistic evidence is perhaps more illuminating than Bernanke's own academic writings, as it offers direct support for what seems to be his position on monetary policy, even if not explicitly articulated in his scholarly work. This position is namely that monetary policy is neither omnipotent nor independent in times of crises, and is

largely enabled by fiscal policy. We can conclude then that the effectiveness of monetary policy depends on the size of these fiscal components. In Bernanke's view, these components must be as large as necessary to secure a solid recovery. Their magnitude does not pose a problem because they can be forever financed without any difficulties. This is because "money . . . is special; it is not only a zero-interest liability, but also a perpetual liability" (Bernanke, 2000, p. 163). In other words, he is suggesting that there are no technical limits to government spending. This last proposition is the first part of Bernanke's theoretical conundrum. But before we explain it in greater detail, it is worth summarizing the two important implications from the foregoing analysis.

Implications of fiscal components

The first implication is with respect to monetary policy independence. Although the monetary authority is still considered to be independent from political influence when setting interest rates, operationally neither foreign exchange intervention nor purchases of financial assets are purely monetary policy levers. They are, in fact, fiscal levers financed by the Federal Reserve. Nevertheless, Bernanke along with some other new consensus economists seem to argue that fiscal and monetary policy are in fact operationally independent in normal economic times, but can be integrated and coordinated during severe recessions for the purposes of financing government expenditures, buying various toxic financial assets from the banking system, or engaging in open market sales of currency. In other words, the mainstream now claims that the central bank can voluntarily abdicate operational independence from the fiscal authority in times of crises and the two can operate in concert to fight deflationary pressures.

The second key implication of Bernanke's nonorthodox approach to monetary policy is that not only is fiscal policy effective (something rejected for decades by neoclassical advocates of the Ricardian equivalence hypothesis), but it is, in fact, more potent in recessions. This is because the mainstream has finally recognized that the Fed cannot alone and unilaterally rain money on the banking system (ibid.). More importantly, from Bernanke's new interpretation of monetary easing, we can extract one interesting new conclusion, namely, that the Fed cannot exogenously expand the money supply *without* government spending. What this means is that even if the Fed lends against a wide variety of assets, it may be able to prevent a sell-off or to put a floor on these asset prices, but it will not be able to boost aggregate demand. The only way to do this, according

to Bernanke, is via a "gift" from government spending, namely, through an injection of net financial assets (net wealth) from fiscal operations.[6]

Are there constraints to financing the fiscal components of monetary policy? Comparing the United States and the eurozone

We have outlined Bernanke's particular view of policy effectiveness by identifying the fiscal components in the actions of the monetary authority. If the fiscal push is large enough, according to Bernanke (ibid., p. 164), there would be no need for alternative OMOs. So the next question to consider is whether or not policy effectiveness would be inhibited by any impending limits to financing these sizable fiscal components. In other words, would policy effectiveness be restricted by the existence of a government financing constraint? The answer to this question can be found in Bernanke's own writings and some recent new consensus literature.

In a radical departure from much of previous orthodox theory, Bernanke has claimed that there are no technical limits to government spending (or, more specifically, to financing the fiscal components of monetary policy). In a now famous 2002 speech before the National Economists Club, Bernanke argued that the central bank can always finance government spending at no cost under modern monetary arrangements:

> 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 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 essentially no cost.

This is well recognized as the reincarnated Friedman "helicopter drop" of money, except now it comes in the form of "a money-financed tax cut" (ibid.). For our purposes, it is important to stress again one key implication from the foregoing analysis of the fiscal components, namely, that the central bank cannot unilaterally rain money on the population *without the Treasury.* An injection of net new financial assets (reserves) into the

[6] As will be discussed later, Post Keynesians have long rejected the notion that the mere injection of reserves would cause aggregate demand to grow. In fact, the causality is quite the opposite: because spending and investment normally depend on future expectations, strong aggregate demand is never reserve constrained, and in fact *results* in an increase in reserves in the banking system.

private banking system takes place when the central bank finances the government's tax cut checks or its purchases of goods, services, and financial assets. Conventional wisdom holds that government spending is limited by tax collections or bond sales, but by Bernanke's own admission, neither taxes nor bonds should impose any technical constraints to spending. This is also the position of some new consensus economists such as Michael Woodford, who has recognized that in sovereign currency nations, market institutions do not impose actual financial constraints upon governments (no matter whether they are desirable or not).[7] Woodford correctly points out that

> [a] government that issues debt denominated in its own currency is in a different situation than from that of private borrowers, in that its debt is a promise only to deliver *more of its own liabilities.* (A Treasury bond is simply a promise to pay dollars at various future dates, but these dollars are simply additional government liabilities, that happen to be non-interest-earning.) There is thus no possible doubt about the government's technical ability to deliver what it has promised. (2000, p. 32, emphasis in original)

If we carry this analysis to its logical end, it means that tax revenues are irrelevant for the purposes of financing government deficit spending for a government that pays in its own liabilities, no matter whether this deficit is associated with the central bank's deflation-fighting tactics or with general federal government operations.

The above position, still debated in the mainstream, is clearly articulated by the modern monetary approach which has long worked toward an explanation of the operational realities of sovereign currency regimes (e.g., Mosler, 1997–98; Wray, 1998). Whereas the mainstream has not similarly theorized the policy implications for sovereign currency nations, some new consensus economists acknowledge that those governments' liabilities are unlike any other. This is a first step to recognizing a key proposition of the modern money approach, namely, *that the limits to policy effectiveness are not financial in nature.*

The modern money literature has argued that all debts are ranked in a hierarchical fashion, where the liability of the sovereign authority is the most acceptable form of payment (Bell, 2001; Minsky, 1986), and

[7] The proposition that governments do not face technical budget constraints has been outlined in Woodford's fiscal theory of the price level (1995), which leads to a radical new view of fiscal policy effectiveness. As Tcherneva (2010) has argued, however, it has also fundamentally undermined the theoretical consensus within the new macroeconomic consensus.

that taxes and bonds do not finance government liabilities in modern monetary systems that use nonconvertible free floating currencies (see Bell, 2000; Fullwiler, 2005). Modern money economists have also argued that taxes serve the function of creating demand for otherwise useless token money (Forstater, 2006; Tcherneva, 2006; Wray, 1998) and of regulating overall spending and investment in the economy. Similarly, bond sales are not undertaken for the purposes of raising revenue for the government but for draining reserves during the normal interest rate maintenance activities of the central bank (Fullwiler, 2005). The mainstream by contrast has not yet abandoned the idea that taxes and bond sales are funding operations. For this reason, new consensus economists such as Bernanke and Woodford argue in paradoxical terms when they claim that even though the government always pays in its own liability, it somehow needs to sell its bonds to the public to "raise revenue"; and if the general public refuses to purchase these bonds, the Fed will step in as the residual buyer (Woodford, 2000). Note, however, that the public must have acquired another government liability (reserves) *first,* before they can buy the government bond. So it is not possible for the government to raise revenue in terms of its own liabilities *before* they have been provided to the public first.

There is still considerable confusion over the nature of sovereign money in conventional theory, and although there is no comparable theorization of the role, nature, and functions of money as in the modern money literature (see also Goodhart, 1997, 1998; Wray, 2004), at least one economist in the mainstream, Christopher Sims (2005, p. 287), has acknowledged that taxes do not raise revenue, but instead provide a "tax-backed floor" to the value of money. Modern money theorists have maintained that if the users of a currency (the nonfederal government sectors) were not required to pay nonreciprocal obligations (e.g., taxes) to the issuer of the currency (the state) denominated in the government-issued currency, the demand for that currency would plummet, which would in turn erode its value. For Sims, taxes seem to serve a similar function—they provide a backing, that is, a floor to the value of certain government assets (ibid.). This view is consistent with the modern money literature which has suggested that the one government asset that requires tax backing is that which also serves as the unit of account (in modern economies, reserves). In other words, taxes create the requirement to denominate transaction in a particular form of high-powered money (Wray, 1998). By contrast, Treasury securities do not require tax backing because they are always convertible into high-powered money and, normally, serve the function

of adding or draining reserves in the banking system, not of financing government spending.

Similarly, in the case of the United States, Sims argues that it does not make sense to treat bonds held by the Fed as government assets that require tax backing. This is because the liability of the Treasury to the Fed (the bond) is always extinguished by the liability of the Fed to the Treasury (reserves):

> In the case of the U.S. Federal Reserve, it may seem unreasonable that the treasury should see debt held by the Federal Reserve as a liability requiring tax-backing or that the Federal Reserve should ever perceive a need to ask for treasury replenishment of its balance sheet. The Federal Reserve has a nearly perfectly hedged balance sheet, with most of its assets nominal U.S. government bonds and its liabilities mostly high-powered money. Even if it did somehow develop substantially negative net worth, why would this be a problem? Its high-powered money liabilities carry no explicit promise that they are redeemable, so there are no creditors whose demands could make negative net worth a problem. (Sims, 2005, pp. 288–289)

Put simply, tax collections are not required for the U.S. government to meet its obligations to the Federal Reserve. Although Sims recognizes that Treasury securities held by the Fed do not need tax backing, he does not acknowledge that the same is true for Treasury securities held by the private sector, because they, too, are ultimately extinguished by the Fed, which is always able to create the reserves necessary for that purpose. While taxes create demand for reserves, coins, and currency in circulation, Treasury securities are simply instruments that convert interest-free reserves (for which taxes have already created the demand) into interest-bearing assets (government securities). As the modern money approach explains, reserves and Treasury securities are both liabilities of a sovereign government, denominated in the domestic currency, and there is no limit to which those two agents can issue one or the other (Tcherneva, 2010).

But this is not the case in countries that do not denominate their liabilities in their own domestic currencies. Sims makes the case for the EU nations:

> [T]here are other structures of central bank balance sheets. . . . The most common direction of deviation is toward holding large amounts of reserves in the form of securities that are not denominated in a domestic currency and hence leave the central bank less than perfectly hedged. A good example is the European System of Central Banks. . . . The radical approach to central bank independence in the setup of the European Central Bank

> (ECB)—cutting all explicit connections with fiscal authorities and ruling out the holdings of government debt as assets—has resulted in both an un-hedged balance sheet and the absence of any institutional structure for the ECB to use in case it were to need balance sheet replenishment. (Sims, 2005, p. 295)

The separation between the monetary and fiscal authorities in the European Union presents a fundamental obstacle to the ECB's ability to execute stabilization policy à la Bernanke. This is because monetary policy in the European Union is completely devoid of any fiscal components. Put simply, the ECB is forbidden from directly financing individual governments' stabilization operations, be they purchases of toxic assets from the banks of an individual country, financing massive bailout programs, or any European version of the American Recovery Act.

The modern money literature has made this argument since the launch of the euro (Bell and Nell, 2003; Goodhart, 1997, 1998). The breakup of the one-nation-one-currency regularity in the process of creating one European central bank but not one European fiscal authority has effectively prevented the ECB from financing government spending as needed (Goodhart, 1998). The ECB is also unable to purchase toxic financial assets or finance large tax cuts for the eurozone. In other words, if it is indeed the case that fiscal components are what make monetary policy effective during crises, in the euro area, monetary policy is largely impotent for dealing with deflationary forces.

It is interesting to note that to sidestep the radical separation of the monetary and fiscal authorities forced on the eurozone by the EU institutional requirements, the ECB has recently gained authority to start purchasing individual governments' debts in the secondary market in order to help alleviate the financing constraints these governments face. As long as the ECB continues to do this, it will serve as a market maker (or a residual buyer) for government bonds, thereby providing unlimited financing to individual governments as necessary. Although it seems that this move helps with macroeconomic stabilization, we can hardly expect it to last, as it is precisely the sort of thing that the EU institutional arrangement wanted to prevent in the first place. In sum, the radical separation between the ECB and the individual counties' treasuries and the lack of a single fiscal European authority that works in concert with the ECB to implement a euro-wide stabilization policy is the reason Bernanke's recipe for deflation fighting cannot be implemented in Europe.

The foregoing analysis indicates that only in sovereign currency regimes can governments exercise the policy moves as outlined by Bernanke without any financial limitations. In other words, for Bernanke, under

the unique sovereign currency arrangements, the Fed and the Treasury can operate in concert to finance as large fiscal components of monetary policy as are necessary for the purposes of macroeconomic stabilization. The resulting deficit spending is expected to produce a wealth effect that will help economic growth. Because of the unique nature of government financing, there is no reason to tax these "gifts" to the population and reverse the much needed wealth effect. Given the analysis above, one must conclude that stabilization policy à la Bernanke in the United States can be implemented and financed as far as the eye can see without any worry about government solvency (see also Allsopp and Vines, 2005). Why then has Bernanke recently expressed strong concerns with the sustainability of the ballooning government debts and deficits? This is the crux of the paradox.

Bernanke's paradox in his concern about the deficit

Whereas Bernanke has argued that in the United States or Japan there are no technical constraints to financing an antideflationary policy, he has also expressed a very strong concern with the growing size of the U.S. government deficit and debt. In light of the discussion above, such a position seems highly contradictory.

Well before the deficit ballooned with the financial bailout, Bernanke had argued that "the prospect of growing fiscal imbalances and their economic consequences . . . raises essential questions of intergenerational fairness" (2007b, see also 2006). And again in a speech late in 2010 on fiscal sustainability and fiscal rules, Bernanke claimed that "there is no way around it . . . policymakers and the public [have] to make some very difficult decisions and accept some sacrifices" (2010a). The main sacrifices Bernanke identifies are with regard to Social Security and health-care programs (principally Medicare and Medicaid). These sentiments were also expressed in Bernanke's June 3, 2009, statement before the House Budget Committee:

> Prompt attention to questions of fiscal sustainability is particularly critical because of the coming budgetary and economic challenges associated with the retirement of the baby-boom generation and continued increases in medical costs. . . . With the ratio of debt to GDP [gross domestic product] already elevated, we will not be able to continue borrowing indefinitely to meet these demands. (Bernanke, 2009)

There are two basic arguments Bernanke makes: (1) rising debts and deficits will discourage private creditors from lending to the U.S.

government (i.e., the U.S. government will not be able to raise revenue, especially abroad), and (2) rising debts and deficits will put an upward pressure on interest rates, inhibiting capital formation and growth. These calls for the reduction of the government deficit in 2009 do not seem to be mere political posturing; they are both a hallmark of mainstream economic theory. The first argument, as explained above, runs counter to a very basic operational reality, namely, that sovereign currency nations do not "raise" revenue. The second argument is essentially the familiar old argument that deficit spending crowds out private spending in investment.

Herein lies the paradox. When the government buys nonperforming loans or provides money-financed tax cuts, Bernanke recognizes that it creates private-sector net saving, which produces a *crowding in* effect in the form of "gifts" from the fiscal components of monetary policy. But when he discusses government spending in general, be it on Medicare or Social Security, he argues that it *crowds out* private saving.

Consider his confusion with regard to the falling saving rate in the late 1990s:

> there is no obvious reason why the desired saving rate in the United States should have fallen precipitously over the 1996–2004 period. Indeed, the federal budget deficit, an oft-cited source of the decline in U.S. saving, was actually in surplus during the 1998–2001 period even as the current account deficit was widening. (Bernanke, 2007a)

Here Bernanke puzzles over why the saving rate declined when the government ran a budget surplus. His confusion stems from the traditional view that when the government is running a surplus, it should not be depleting private savings as it is not competing for funds with the private sector in order to finance its expenditures. This crowding out argument, however, is flawed at the macroeconomic level as demonstrated by the sector balances approach (SBA) developed by Godley and Lavoie (2007). The SBA articulates clearly that one sector's deficit spending is the accounting equivalent of another sector's surplus. Considering the accounting relationship among the three sectors (the domestic public sector, the domestic private sector, and the foreign sector), it becomes clear that in the presence of large foreign-sector surpluses during the 1990s, the *only* way the U.S. government could run a surplus was if the private domestic sector ran a deficit. This simple accounting logic does not say anything about causality, although the argument has been made that the structural shift in the government budget stance toward surpluses has indeed destabilized private-sector balances and has contributed to

the significant deterioration of the private-sector saving rate (Parenteau, 2010, p. 8). Conversely, a rise in government-sector deficit spending is equivalent to the rise in surpluses in the nongovernment sector; that is, when governments spend more than they collect in taxes, the nongovernment sector earns more than it pays in taxes. In other words, deficits always generate a crowding-in effect and put a downward pressure on interest rates.[8]

Not only is crowding out a flawed theoretical argument, but it is also in direct conflict with Bernanke's view of government financing outlined above. On the one hand, Bernanke recognizes that the Fed finances government spending by electronically injecting reserves into the system and that there is no limit to its ability to do so. On the other hand, he still argues that somehow taxes are necessary to fill the government's coffers, and that any shortfall in revenue collections would cause the government to deplete private savings through borrowing (domestically or abroad) to finance its expenditures.

Thus, the paradox comes into full view. If it is the case that the deficit associated with the TARP program represents a "gift" to the private sector, how can Bernanke argue that *any other* type of government deficit crowds out private saving? How is it possible to claim that monetary policy and its fiscal components create net wealth in the private sector while arguing at the same time that government spending removes wealth from the nongovernment sector? Finally, how can we reconcile the new consensus claims that, because the government pays in its own liability, it can finance its spending in perpetuity, with the claims that the deficit has become unsustainable and might run into financing difficulties?

Resolving the paradox

Such a paradox may be possible if Bernanke believes that during normal times, governments raise taxes and sell bonds to pay for their expenditures and that, only in times of crises, they resort to their central banks to "monetize" their purchases. But this explanation still does not explain why he should be preoccupied with the government's solvency and the sustainability of its debts and deficits.

Clearly, if the government cannot raise tax revenue, it can always make interest or Social Security payments by directly crediting bond holder or retiree accounts with reserves. In fact, the above discussion indicates that is the only way these payments are made. Because taxes operationally

[8] For a detailed theoretical and technical discussion on the impact of government deficits on interest rates, see Fullwiler (2007).

destroy reserves, they are never stockpiled for future government use. To argue that governments will run against financing barriers is a rejection of this very basic operational reality (tax collections destroy money). To argue that governments cannot pay for their obligations is also in direct contradiction with the new theoretical developments in the new consensus about the unique nature of government liabilities discussed above.

The modern money literature can help resolve Bernanke's paradox. By looking at the integrated balance sheet of the Federal Reserve and the Treasury, it has illustrated that the vertical injection of reserves is something that happens all the time, not just in times of crises (Fullwiler, 2007). Government spending of any kind (be it on interest payments, Medicare, or Social Security) is ultimately cleared by the Fed when it credits private-sector bank accounts. This injection of reserves can have serious destabilizing effects on the amount of reserves in the banking system and exerts a downward pressure on overnight rates, necessitating Fed intervention to drain the excess reserves (ibid.; see also Bell and Wray, 2002–3). Therefore, the Fed and the Treasury have created a number of institutional arrangements such as Tax and Loan accounts to minimize the effect of government spending on reserves (Bell, 2000).

These injections of reserves are what Bernanke has called "gifts" to the private sector, and they take place irrespective of whether the Fed is buying a toxic asset on behalf of the Treasury or clearing a Treasury payment for the construction of levees or bridges. In all cases, government spending is financed through a reserve injection in the nongovernment banking sector. Every type of government spending creates a *crowding-in* effect, and every type of federal tax collection destroys reserves, reduces the wealth of the nongovernment sector, and creates a *crowding-out* effect. To argue that purchases of toxic assets require the direct injection of reserves but that the construction of bridges does not, is not only a theoretical blunder but also a failure to grasp a fundamental aspect of policy, namely, that *the monetary authority in a sovereign currency nation cannot choose what expenditures of the government it will finance.* Instead, it *always* finances all of its fiscal operations.[9]

We have presented the three important ingredients to understanding the nature of government spending. First, there is indeed no inherent operational limit to government spending for governments that pay in their own liabilities. Second, because of the macro relationships among different sectors, it is always the case that government deficit spending

[9] The limits to spending are political, of course, set in the congressional appropriations process.

creates an equivalent amount of surpluses in the nongovernment sectors. Finally, the central bank cannot choose which government payments to clear. Thus, it is logically incoherent to argue that during normal times, the government relies on tax collections for its spending, whereas in crises, it does not.

Ultimately, our understanding of the government debt and deficit influences what we consider to be an effective stabilization policy. Once the financing paradox has been resolved, once it is understood that government spending always creates a crowding-in effect and is never operationally constrained, it becomes clear that sustainability is best understood as a *real,* not a *financial,* concern. That is a concern about the actual impact of government spending on the health of the economy and on real variables, such as employment, output, and income distribution, not a concern about some arbitrary debt- and deficit-to-GDP ratios and the government's ability to repay its debts.

Bernanke's recent call (2010) for more quantitative easing suggests that his policy actions in 2008 and 2009 have not delivered the desired real results. And whereas assessing monetary policy effectiveness is beyond the scope of this paper, it is important to stress one major flaw with his recipe for macroeconomic stabilization. Bernanke, still trapped in the old "multiplier logic," has aimed to inject a large amount of reserves into the banking system via fiscal transfers or purchases of toxic assets, in hopes that banks will then turn around and lend those reserves to firms and households for investment and consumption. This view has long been debunked by Post Keynesians who have demonstrated that lending is never constrained by the availability of reserves in the banking system (Moore, 1988; Wray, 1990). Expounding on Keynes's liquidity theory of an entrepreneurial economy (e.g., Davidson, 2007), Post Keynesians have also illustrated that depressed profit expectations, weak employment, stagnant incomes, and heavy indebtedness, *not* the availability of reserves, are the primary culprits for the low rate of borrowing for investment. It is therefore not surprising that despite all of the aggressive moves by the Fed, a banking system that is currently flush with reserves has not generated vigorous lending, consumption, and employment growth.

In light of the discussion above, policy effectiveness has to be measured neither by the size of debt-to-GDP ratios nor by the availability of reserves in the banking system. The primary criteria to measure policy effectiveness have to be high (full) employment, more equitable income distribution, stable profit expectations, and viable investment—private or public. Indeed, there is no reason why Bernanke's recipe for stabilization should favor money-financed tax cuts, as opposed to any other

alternative fiscal policy, such as direct public investment and job creation by government. There is considerable reason to believe that the direct approach not only fills the coffers of the private sector, but also holds the promise of ensuring strong employment and income growth while delivering concrete economic benefits.

Conclusion

Bernanke's paradox with respect to government financing is not just a theoretical curiosity. If he is unable to reconcile his deficit phobia with his claim that the Fed provides "gifts" to the population by financing the fiscal components of monetary policy, it is possible that his insistence on reversing the budgetary stance will have a devastating effect on the economy. By way of resolving his conundrum, this paper has suggested that sovereign currency nations are always solvent, and financing their government expenditures is always financially sustainable. It has also stressed that the monetary authority cannot choose which government expenditures to clear—it always fulfills all of the government's payment commitments. Thus, to be meaningful, sustainability must refer not to the *financing* aspects of government policies, but to the *real* impact they have on the economy. Unless this distinction is made, policymakers will continue to push for deficit reductions, as Bernanke has recently done, with potentially disastrous effects on employment and output. Advocacy of such policy moves will seriously undermine whatever stabilization Bernanke may believe to have accomplished so far through his own antideflationary tactics via a coordinated monetary-fiscal policy.

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