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Working Paper No. 640

**The Central Bank “Printing Press”: Boon or Bane?
Remedies for High Unemployment and Fears of Fiscal Crisis**

by

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ABSTRACT

In recent years, the US public debt has grown rapidly, with last fiscal year's deficit reaching nearly \$1.3 trillion. Meanwhile, many of the euro nations with large amounts of public debt have come close to bankruptcy and loss of capital market access. The same may soon be true of many US states and localities, with the governor of California, for example, publicly regretting that he has been forced to cut bone, and not just fat, from the state's budget. Chartalist economists have long attributed the seemingly limitless borrowing ability of the US government to a particular kind of monetary system, one in which money is a "creature of the state" and the government can create as much currency and bank reserves as it needs to pay its bills (this is not to say that it lacks the power to impose taxes). In this paper, we examine this situation in light of recent discussions of possible limits to the federal government's use of debt and the Federal Reserve's "printing press." We examine and compare the fiscal situations in the United States and the eurozone, and suggest that the US system works well, but that some changes must be made to macro policy if the United States and the world as a whole are to avoid another deep recession.

Keywords: Budget Deficit; Federal Debt; Debt Tolerances

JEL Classifications: E000, E320, E500, E620, E630

Recent financial debacles in Greece and other European countries have led to renewed discussion of the dangers posed by US federal debt loads. A crucial touchstone in public discussions has been a book by economists Carmen Reinhart and Kenneth Rogoff (2009; see also 2010). The book is a history of financial crises, but attention has recently focused on an empirical claim that governments face a sharply increased risk of default once their debts exceed certain percentages of GDP—perhaps 90 percent for the United States and other economically advanced countries.

Many of those engaged in the debate over findings in Reinhart and Rogoff's book are deeply concerned about the possibility that the United States might one day face a fiscal crisis similar those that have occurred around the world when governments have printed and spent too much money. There is no better example of a fiscal crisis than the series of events that occurred in Argentina in the late 1990s and early 2000s.¹ Notably, the events leading to this default included the passage of a new law requiring that the central bank peg the Argentine currency to the dollar at a fixed exchange rate. Argentina was able borrow funds at a lower cost once its currency was pegged because potential bondholders did not have to worry about exchange-rate risk.

In the early 1990s, observers began to doubt that the national government would be able to make scheduled interest payments on its sovereign debt. Argentine banks and investors around the world found themselves in possession of assets that might be worthless in the event of a default. In 2001, the government tried to avert a run on banks by restricting withdrawals, in a move similar to Franklin Roosevelt's 1933 "bank holiday." The bank closure brought mass political protests in many Argentine cities. But enough money fled the country's banks that reserves of US dollars began to be depleted. Many investors, small savers, and financial institutions converted their Argentine assets into dollars at the one-for-one exchange rate and moved their money to presumably safer investments and accounts, mostly in other countries. Many ordinary citizens simply hoarded American currency. The banking system found itself under increasing pressure as it lost deposits and dollar reserves. It became clear that there were not enough willing holders of Argentine pesos as long as pesos could be traded for dollars, and the

government officially abandoned its peg in early 2002. Within days, the peso had lost over half of its market value. Many ordinary people lost most of their savings. The fiscal crisis brought with it massive, painful budget cuts, a very severe economic recession, and an unemployment rate in excess of 20 percent, though Argentina's economy rebounded strongly following the devaluation.²

There is some dispute about the conditions that might lead to a similar crisis in the United States. To our minds, the key point is this. Greece and other countries in the eurozone have faced an economic problem of a sort that is very unlikely to appear in the United States, namely possible default. The key difference between the case of eurozone countries and the United States is that the United States is able to borrow in its own currency, the dollar (Nersisyan and Wray 2010). That is, Treasury securities are promises to pay interest and principal in specific dollar amounts, which the Fed can print as necessary.³ Normally, the use of the printing press to pay the government's bills has been frowned upon by central banks and finance officials in the English-speaking developed countries. However, we are witnessing the use of this power now: the Fed has recently increased the money supply to finance unprecedented purchases of long-dated Treasury bonds. This strategy is part of a new effort on the Fed's part that some have called a "quantitative easing" of monetary policy, or informally, QE. Another way of putting it is that the Fed is "monetizing the deficit"—an older phrase used in the past when the government "printed money" to pay its bills, rather than issuing securities or using tax revenues.

In contrast, as part of the eurozone, Greece has adopted the euro as its currency. The governments of the individual countries that use the euro cannot print euros to pay their bills. Instead, they must raise revenues or borrow funds on international credit

¹ The account in the next two paragraphs is based largely on facts from Benson (2004), Rich (2002), and Rohter (2002).

² Following four consecutive years of negative economic growth, GDP grew by 8.8 percent in 2003, 9.0 percent in 2004, 9.2 percent in 2005, and 8.5 percent in 2006, after adjustments for domestic inflation. The "notes" to the Argentine growth figures in the IMF World Economic Outlook Database report that "private analysts are of the view that real GDP growth has been lower than the official reports since the last quarter of 2008" (IMF 2010).

³ In the current era, the government "prints money" mostly by sending people checks. Banks eventually redeem these checks at the Fed and are credited with the proper amount of bank reserves, which can be created with a few keystrokes.

markets, usually by issuing bonds denominated in euros. Hence, given that tax revenues are proving insufficient to cover payments on Greek debt and that investors are reluctant to purchase new Greek bonds, the country has had to obtain emergency loans (from the ECB and the International Monetary Fund) to prevent a default. In essence, Greece and other countries within the eurozone lack a fiscal policy that is truly independent. Like other governments that do not control their own monetary systems, Greek leaders must worry about the test of the bond markets or the banks each time a budget is adopted. Will bondholders be convinced that borrowers will make interest payments and that their investments will be redeemable at par when the principal is due? Of course, the countries using the euro are also subject to formal but loosely enforced restrictions on their budget deficits and debts as percentages of GDP. Some observers have recently compared the US situation with crises in Argentina, Ireland, and Greece (CBO 2010). The comparison is not to the point if only because the debts involved were not denominated in a local currency (Nersisyan and Wray 2010). Few economists are unaware of this rather important characteristic of the countries involved in sovereign debt crises, but all should point it out when drawing comparisons between the US case and that of countries that do not control their own monetary policy. The fact that these countries have experienced fiscal crises after going deeply into debt does not imply that the United States would do so, even at similar ratios of sovereign debt to national GDP.

Now, to prevent default in Greece, Italy, and Spain, the ECB has taken on a new role, monetizing much of the debt of some European governments, much as the Fed and other national banks have done for many years. In other words, the ECB is helping the area's governments in much the same way that the Fed has helped the US federal government, by propping up the market for government securities, and in so doing, keeping longer-term interest rates low.⁴ As of mid-September 2010, the ECB was holding

⁴ Nonetheless, of course, the governments and central banks of Europe were involved in purchases of government bonds from the eurozone countries. Banks around Europe had heavily invested in the sovereign debt of Greece and other deeply indebted eurozone nations. These are major banks that are part of the banking systems of the member economies and borrow large amounts of money from national banks. These institutions are now borrowing very large amounts of money directly from their central banks to repay existing loans. Such efforts complement "quantitative easing" policies, which involve purchasing government securities. Both types of policies belie attempts to clearly label eurozone monetary systems as lacking sovereign currencies and independent fiscal policy.

an estimated 40 billion euros (\$52 billion) in Greek bonds, or 13.3 percent of the 300 billion euros in bonds outstanding (Oakley and Hope 2010a, 2010b). Such purchases help maintain demand for bonds and other government securities in a crisis so that European governments can continue to sell new ones at a low cost and without sowing panic among owners of existing bonds. (The market value of “seasoned” bonds declines when the government sells new ones bearing higher interest payments.) This is particularly important for euro-area governments right now, because many of their debts are coming due over the course of the next few months, and new debt will be issued, in essence to refinance the old debt. Along with purchases of sovereign debt, hundreds of billions of euros in ECB loans have been made to European banks holding large amounts of sovereign debt (Atkins and Oakley 2010).⁵ To make matters more complicated, much of the debt now burdening some European governments was incurred as a result of attempted bank bailouts. The novel and controversial wall between European government finance and “the printing press” has not withstood the pressure of the recession and financial crisis, with the banking system receiving help from the public and vice-versa.

Such developments are not uncommon in modern monetary systems, even those that attempt to carry out the orthodox policies thought to be prudent by many pundits, journalists, financial and monetary officials, and economists. These impossible-to-implement policies include: 1) tight control of the quantity of money in circulation or some other monetary “anchor” for the overall price index; and 2) a stable banking system relying heavily on competition and transparency, rather than government or central bank intervention. Indeed, the recent experiment with a rigorously managed and unified monetary system foundered on the lack of realism of the system of thought represented by these two principles.

Hyman Minsky (2008 [1986]: 13–98), the late Levy Institute economist, argued throughout his research career that central banks and finance ministries around the world *must* act as backup spigots for large banks. The venerable expert on banking Walter Bagehot also saw the need for a central bank to provide loans on demand to financial

⁵ The ECB has recently tightened criteria for loans to troubled banks (Koeppen 2010). It remains to be seen if weak banks can regain their footing under these more stringent rules.

institutions in return for collateral of good quality. He gave this advice about the best way to prevent bank runs or panics:

...principle requires that such advances, if made at all for the purpose of curing panic, should be made in the manner most likely to cure the panic. And for that purpose, they should be made on everything which is in common times is good “banking security.” The evil is, that owing to terror, what is commonly good security has ceased to be so; and the true policy is so to use the Banking reserve, that if possible the temporary evil may be stayed, and the common course of business be restored. And this can only be effected by advancing on all good Banking securities. (Bagehot 1991 [1873]: 100)

This role is one of many reasons why the central bank has never been able to cap or successfully target the total amount of money in circulation, another shibboleth of monetary systems where monetarist theories are honored in the breach. Attempts to stop the central bank’s printing presses and lending facilities cannot be carried out without denying funds when they are needed by the banking system to still a bank panic or prevent one from developing. The financial crisis brought a huge increase in the monetary base largely for this reason. On the other hand, each successive period of financial stress seems to result in the Fed’s backing more new kinds of assets, a longstanding pattern pointed out many times by Minsky (e.g., Minsky 2008 [1986]: 39). In this case, the newly “validated” instruments included many types of mortgage-backed securities and related credit derivatives that were highly risky almost by design. For example, many types of subprime mortgages were accepted as good collateral by the Fed. The holders of these securities and some of the firms that insured them were protected by the central bank, even though their assets were in many cases far more risky than banks’ assets were expected to be a few decades ago. Managers of financial institutions will be inclined to assume that the Fed will back the kinds of risky assets that they have backed in this crisis. At this point, rules to implement the new financial reform bill may help distinguish acceptable mortgages from those that the government does not intend to back

in the future. Otherwise, the government could again be on the hook at some point in the future for a new round of reckless mortgage lending.

The recent crisis may become known as a time when the Fed was forced to depart from the dictum set forth by Bagehot, purchasing or accepting as collateral large amounts of assets from the books of financial institutions that proved to be worthless or nearly worthless. The Fed has so far not found itself in this position because the federal government—through TARP and some other major rescue programs—has taken on some of the most dubious assets. On the other hand, the Fed has helped to finance these government purchases by purchasing an increased volume of Treasury securities at auction prices. Similarly, it is the US Treasury Department that has taken formal charge of Fannie Mae and Freddie Mac, while the Fed on the other hand has financed part of this effort by purchasing relatively safe mortgage-backed securities and agency debt from these renationalized entities. It may turn out that TARP finishes its tour of duty in the black, but a new setback could throw current plans for this program completely out of kilter. Worse, the funds spent on the GSE bailouts are not likely to be recouped, with some recent cost estimates for those programs exceeding \$300 billion (Kapner 2010).

In essence, lacking sound regulation for the banking system, the government could do no better than to adopt a costly “second-best” solution: to bail out various huge institutions after they had failed. It is appropriate to see this effort as a “unified federal sector” bailout, with the distinction between the Fed, the Treasury, and the GSEs mostly unimportant from a fiscal point of view.

On the other hand, without a powerful financial backup from the state, the economy would succumb to the ebbs and flows of financial vigor even in economies with extremely well-managed modern banking systems. It is rarely prudent for regulators to allow a bank to flounder in such tides, because a cascade of additional bank failures would probably follow. Links between banks around the world almost ensure that financial shocks spread quickly and the size of financial behemoths means that their pleas for help must be taken seriously by politicians and central bankers. The dangers of financial fragility and public efforts to cope with them have grown in scope and size, though they are not new ones, as the writings of Minsky and other modern authorities on

banking and money attest. Hence, even when large financial institutions do not have an explicit guarantee of help from the authorities, they often work with the understanding that the government will act as an ultimate backstop. In this case, the commitment to a stable financial system led to trillions of dollars in excess government expenditures in the United States and in Europe. Crisis-related deficit-increasing measures also included two stimulus plans, the possible extension of the Bush tax cuts in 2011, sharply increasing expenditures for SNAP (the old “food stamp” program), and falling tax revenues across the board.

Hence, Greece, Ireland, and Spain have found themselves in a debt crisis that threatens to spread further into Europe, where numerous banks hold sovereign debt issued by those countries. While the United States has so far been able to contain its crisis using familiar but harshly criticized policy tools, the European system has been forced to abandon serious policy commitments that were thought necessary to control inflation and stabilize the economy. First, euro-area fiscal deficit limits have once again been breached by huge margins. Second, the policy of keeping control of monetary policy completely separate from the political power of the purse has proven unworkable in this crisis, with officials recognizing that the costs involved in a bailout could be handled only by central banks and the IMF. A large proportion of the ultimate expense of the European crisis will be the result of the largely futile attempt on the part of the European nations to hold the euro-area together, with the same restrictive monetary system as before the crisis. It is still not clear whether this system will hold up until the fiscal crisis passes.

IS THIS “WIDOW’S CRUSE” TOO GOOD TO BE TRUE?

Responding to the current fray over fiscal policy, Nersisyan and Wray point out that a country able to borrow in its own currency can always repay the principal and interest on its loans, regardless of how much debt it has taken on all (Nersisyan and Wray 2010). Hence, a debt tolerance of some percentage of GDP would apply only to countries that did not print their own money, if to any economies at all. This observation seems to be on target for the reasons mentioned above. The federal government has run large deficits in

almost every year since the 1970s, and there is no more reason to think that some specific limit to the “affordability” of debt exists now than in earlier deficit years. On the other hand, we wonder if this point fails to satisfy some readers. Here are some of the questions that seem relevant:

- 1) If expenditures can be made at will by governments like the US federal government that issue their own currency, why does any country bother joining a currency bloc such as the ECB or pegging its currency to the dollar? Shouldn't every country issue its own currency, given the advantages of this system mentioned by Nersisyan and Wray? Or, does the sovereign-government-currency approach to money and government finance bring hidden costs to the United States and other countries with their own currencies? And to put it bluntly, will we be forced to pay the piper for our huge public debts, even if not in the form of bankruptcy or an empty wallet?
- 2) In light of our claim that the US worst-case fiscal scenario is nothing like those of countries that have literally defaulted or approached a default, what is the worst that could happen if the government debt grew too large?
- 3) What other kinds of monetary and fiscal systems could be tried in the United States, and would they work better in the long run? To obtain a clear view of the US fiscal situation, it might be helpful to get a sense of how things might be different if the US monetary and public-finance systems were organized in another way. Also, given the currency predicament that we currently find ourselves in, is there some way of fighting unemployment with a novel policy tool such as capital controls or a more straightforward effort to devalue the currency.

The United States has what many refer to as a sovereign-government currency,⁶ meaning that the national government is able to print its own money for use in almost all domestic markets, so that it has no obligations to pay debts in gold, euros, or in any other currency but its own. (For details, see Wray 1998.) When the government of such a country decides to spend in excess of its revenues, it must either sell more bonds or “print” more money. Money here refers to the “monetary base,” a technical term that encompasses paper money in the hands of consumers, banks, and other firms, as well as the account balances of individual financial institutions at regional Federal Reserve Banks around the country. In essence, these are the bulk of the liabilities of the Federal Reserve System, whose function is in many respects similar to the liabilities of the federal government itself.

The notion that the federal government could increase spending simply by seeing to it that the Fed issued more money, rather than by taxing or borrowing, appears to some as a threat to the independence of Fed policies, conjuring up memories of tin-pan dictators churning out currency to finance foolhardy and corrupt plans. Such episodes have often led to hyperinflation, albeit only after prolonged periods of very high deficit spending.

With the Federal Reserve Bank committed to the goal of keeping interest rates extremely low even as the federal government’s debt soars upward toward 100 percent of annual GDP, there is a sense that elected officials have wrested control of monetary policy from the Fed. Indeed, current mainstream theories of monetary policy make the assertion that independence from political influence is more directly relevant to successful inflation-fighting than interest rates or sheer quantities of money or bank reserves. One reason is that inflation-fighting strategies such as inflation- or money supply-targeting are precluded completely if the central bank is forced to print however much money is needed to pay the government’s bills or to maintain full employment.

⁶ The term “sovereign government” refers to a government recognized as the sole national government of a country. To realize the importance of this term, consider the opposite, for example a country like Somalia, in which competing warlords vie for control of parts of the nation’s land and people. A sovereign government is important from monetary perspective because it can demand tax and other payments in the form of its own currency; moreover, it can impose laws that mandate the use of its currency.

A high growth rate of federal-sector liabilities represents the real threat, if any exists at all, posed by the current high federal deficits—not a literal inability on the part of the government to pay interest or principal. What is likely to happen as a nation with a monetary and fiscal system like the American one undergoes a rapid monetary and fiscal expansion such as the current one? Specifically, in light of the concerns expressed by some economists on the right and left, what could go wrong that might justly be termed a fiscal crisis? What debt tolerance level, if any, would have to be exceeded to bring on such a crisis?

**THE ABSURD NIGHTMARE SCENARIO OF FISCAL CONSERVATIVES:
UNREALISTIC WORRIES THAT STYMIE EFFORTS TO ACHIEVE FULL
EMPLOYMENT**

The increase in the supply of government debt securities could test investors' willingness to absorb the supply without demanding higher returns. If enough investors became pessimistic about future bond prices, and perhaps even thought that the government might default, the market for medium- and long-term Treasuries might collapse abruptly. On the other hand, should interest rates begin to rise to undesirable levels, the Fed can add to its portfolio of Treasury bonds, notes, and bills—buying securities of any maturity that was in excess supply.

Of course, the Fed has already taken a number of unusual steps during the current crisis to relieve any pressure on interest rates generated by high deficit spending and indeed reduce rates across the maturity spectrum. “QE” and similar policies to “monetize” long-term federal debt mean that the federal government would in effect wind up paying for its expenditures almost entirely with money printed by the Fed, rather than obtained from people who buy its securities. In this case, the Treasury Department has auctioned securities to pay for expenditures, but the Fed has almost immediately purchased these bonds, removing them from private-sector hands. When debt is monetized in this way, the result is more currency and less bond wealth in the hands of the private sector in the United States and abroad. This policy allows the government to

continue borrowing without driving up even mortgage rates or other long-term interest rates. The only limit to the government's indebtedness is the willingness of the Fed to cooperate with the Treasury Department, and while the Fed can weigh in on fiscal policy decisions, its views carry relatively little weight in political decisions about the federal budget. The sovereign-currency system of public finance also limits the influence of foreign investors, including even central banks holding vast amounts of US currency. China holds trillions of dollars in Treasury securities, but this support is not essential to the Treasury market over the medium or long runs, given that the Fed can and will gradually buy any debt securities sold by the Chinese central bank.

Since the United States and other countries with their own currencies can finance deficits with few restrictions, anything worthy of the term "fiscal crisis" in such countries would have to involve some problem other than the "affordability" of debt or "bankruptcy" in the usual sense of these terms. One potential threat is the effects of large fiscal deficits on the value of the dollar. To wit: 1) many believe that excessive money-supply growth causes inflation, i.e., a fall in the strength of the dollar at home; and 2) economists also envision an inevitable decline in the nominal exchange rate following any prolonged period of loose monetary policy.

Some economists describe the underlying problem using the old saw about "too much money chasing too few goods." For many other present-day economists the chain of reasoning leading from a mostly monetized deficit to a concern about domestic inflation is complicated and indirect and involves consumers' expectations of future deficits and interest rates. These economists foresee a scenario in which an undisciplined and politically compromised Fed could not commit itself to a strong response to future inflationary or financial shocks, given that it is attracted to expansionary policies as a way of stimulating growth and job creation.

The potential for inflation in the wake of excessive deficits seems irrelevant for now even to many otherwise anti-Keynesian economists, because of extremely high unemployment and a teetering recovery. Inflation is far from our minds amidst the tragedies around us. A recent IMF discussion paper presents historical evidence from many countries to argue that when there are deep deficiencies of demand in labor and

product markets, the result is falling inflation (disinflation), though usually not deflation (Meier 2010). This seems to be true quite generally, regardless of money supply growth, budget deficits, interest rates, etc. Many Americans remember the term “stagflation” from the 1970s and 1980s, but this term refers to a combination of moderately *slow growth* and high inflation, brought on partly by rising oil prices.

Moreover, an acceleration of inflation, which some monetarists have been anticipating for months or years, would tend to increase tax revenues, because wages, profits, and other forms of income generally rise almost in step with prices. So, to the extent that high deficits somehow lead to high inflation, the real burden of the national debt would grow more slowly than it would with relatively stable prices. Indeed, to the extent that knowledgeable observers speak metaphorically of a US government “default,” they mean an inflation or devaluation of the currency that makes it easier to service the federal debt.

To sum up, inflation rarely occurs when huge numbers of workers are unemployed, and in any case would enhance the federal government’s ability to meet debt repayment obligations.

Mainstream macroeconomists have focused on inflation control and long-term growth for many years. Some regard the social costs of business cycle output fluctuations as minimal or nonexistent (Lucas 2003). But research has not convincingly shown that the economic costs of even a 5 percent increase in the inflation rate would compare reasonably with the trillions of dollars in annual output lost since 2007.⁷ This leaves us with a question in our minds, namely, why hasn’t the government devoted far more effort and resources to the unemployment problem?

Another realistic concern linked to deficits is the US exchange rate—the value of the dollar abroad. We currently enjoy the benefits of a floating exchange rate, and the aforementioned privilege of printing money as necessary to finance government spending

⁷ Adding up the difference between GDP and potential GDP in chain-indexed 2005 dollars at a seasonally adjusted annual rate for the period from 2007q4 to 2010q2 gives an answer of \$7.514 trillion. Dividing by four to obtain an annual figure, and multiplying by 110.485 to put the answer in terms of 2010q2 chain-indexed dollars yields a total lost GDP since the beginning of the recession \$2.076 trillion. This number is only a very rough estimate, as calculating potential GDP involves some rather arbitrary assumptions about how much real GDP growth is sustainable over the long run.

could not exist under a fixed exchange rate, any more than it could without an separate US currency. According to a famous economic “trilemma,” a country that sets macro policy according to domestic policy needs cannot target its exchange rate at the same time unless it maintains stringent capital controls, preventing investors and institutions from moving funds into and out of the country. The current situation illustrates this dilemma: months of monetary stimulation have contributed to a falling dollar.⁸

Monetary policy affects exchange rates through a simple mechanism. When the Fed reduces interest rates, some investors and financial institutions move their money abroad, seeking higher-yielding foreign securities, and these capital flows in turn reduce the value of the dollar, as we have seen in recent weeks. Also, a domestic economic recovery—even when it is rather weak—tends to lead to a rise in imports, which leads to an increase in demand for the currencies of exporting economies. Indeed, US imports have risen in recent months. Hence, if US policymakers had to maintain a steady exchange rate, they would be constrained in their use of fiscal or monetary policy to speed the recovery.

The only way to freely choose fiscal and monetary policies while controlling their impact on the exchange rate would be to implement capital controls like those imposed by some Asian countries in recent months. For example, Thailand, worrying about excessive *inflows* of foreign capital, has imposed a tax on foreign holdings of its government bonds (FT Reporters 2010). Of course, for a country using the kind of Keynesian policy that we support, the concern is thought to lie with excessive and/or uncontrolled capital outflows following an interest-rate reduction or large deficit. In this case, the United States would have to use some form of duties or taxes to stem any *outward* flow of capital that occurred during macro policy easing. This would presumably discourage US wealth holders from substituting foreign bonds for domestic ones as Treasury yields fell. This approach lost favor in policymaking circles a long time ago. Capital controls and other barriers to capital movement, now regarded as discredited,

⁸ With some justification, many world leaders and finance ministers have expressed deep concern that the Fed’s new round of “quantitative easing,” announced in early November, will exacerbate this trend (Harding and MacKenzie 2010; Luce and Lamont 2010).

began to be removed soon after World War II. Indeed, it would be difficult today to maintain airtight seals against capital movement within the international financial system. Ambitious proposals along these lines have existed for some time, but they involve modest taxes on capital movement, rather than complete financial isolation. If enacted, they would tend to reduce rapid inflows or outflows, but could not prevent longer-run capital movements that can change exchange rates greatly over periods of a year or more.

In essence this is what made it necessary for the United States to abandon the gold standard during the Great Depression. As long as the US government was committed to keeping the value of the dollar stable in terms of an ounce of gold, it had no freedom to choose a monetary policy aimed at reducing unemployment. This restriction rendered the debate over Keynesianism somewhat moot until President Roosevelt followed Great Britain and numerous other countries in leaving the gold standard. At that point, the government was able to service its debts with devalued currency, but in doing so, it had reneged on an implicit commitment to repay in the equivalent of gold.

Unlike eurozone members, the United States cannot face such a convertibility crisis, having once again officially left the gold standard in 1971. It has allowed its currency to float, rarely intervening in foreign exchange markets. But one still worries a bit about the effects of policy decisions on the US exchange rate.

The downward trend in the US exchange rate is the result of several aspects of the current economic environment. When US interest rates are low relative to those offered for foreign securities, or at least securities denominated in other currencies, investors and financial institutions tend to adopt strategies such as the “carry trade.” This entails investing the borrowed dollars in non-US investments. When investors and institutions purchase foreign financial assets with dollars, the sellers often exchange the proceeds for their own currency, say by depositing the dollars in accounts at their own national bank. Of course, the foreign bank then usually sells the dollars in foreign exchange markets, generating downward pressure on the US exchange rate against other floating currencies. Also, as mentioned before, a rebound in domestic demand improves demand for imports from the rest of the world.

The devaluation of a currency often begins a process of adjustment that permits increased deficits with few adverse consequences. At this point in the expansionary-policy scenario of the previous paragraph, the dollar has depreciated. In other respects however, we are almost back where we were before macroeconomic policy was eased, with the sovereign monetary regime allowing devaluation but maintaining the federal government's ability to finance its activities. If the dollars wind up invested in US Treasury securities markets, as is often the case, the Fed will act promptly to vacuum up the excess reserves by selling securities via open-market operations. This will prevent the federal funds rate from falling below target. If investors instead trade the dollars for a pegged currency such as the yuan, perhaps with a view to direct or financial investment in China, then the Chinese government is likely to print more yuan, keeping the yuan/dollar exchange rate at its target level. Indeed, while China has discussed possible revaluations of its currency, it has shown determination to keep the yuan/dollar exchange rate almost constant in the face of upward pressures since 2008.

Hence, at the end of the day, even a sharp reduction in demand for US securities and money is likely to leave all pegged exchange rates pegged and all targeted interest rates approximately at their targets. The limits of such a system are wide, as seen in the successful quantitative easing effort initiated by the Fed in 2008, which left short-term interest rates effectively at zero, long-term rates plunging toward post-War lows, and the dollar relatively strong for many moons. The recent weakening of the dollar has been slow, and indeed the dollar has not lost much value against the renmimbi, which is virtually pegged by the Chinese government.

However, the economic consequences of a depreciation against unpegged foreign currencies are significant. During a period when the dollar falls, foreigners who invest in dollar-denominated assets earn a reduced return, because they are repaid in dollars that buy less of their home currency than the dollars that they invested. By the same reasoning, domestic investors earn a lower return from US securities during a depreciation than they could from securities denominated in a stronger currency. Once such losses begin, investors are likely to sell dollar-denominated assets. The main fear is

that panic about the value of the dollar could lead to a catastrophic drop, much like a stock market crash.

Another reasonable worry is exemplified by current headlines about “currency wars.” Once a key exchange rate moves sharply, other nations may be tempted to move their exchange rates in the same direction, resulting in an unhappy situation. Few major nations have been happy about the 10 percent decline in the broad-index exchange rate, which of course has by necessity led to a concomitant devaluation of the Chinese currency. Devaluations usually appear to be and often are attempts to gain a competitive advantage vis-à-vis international competitors. Devaluation can improve export demand for country whose currency has depreciated, but such effects almost always work at the expense of other economies. Those countries whose currencies appreciate may benefit, especially if they are experiencing nearly full employment. On the other hand, if both countries are in recession or depression, exchange-rate moves can only rob Peter to pay Paul. Of course, this is one reason why it is important to keep monetary and fiscal options open for use when there is no clear case for policy actions on the foreign exchange markets. The answer to widespread underemployment should involve encouraging nations with underemployed workforces to lower interest rates and increase deficits, rather than looking to demand from abroad. This is just what many European countries cannot do, because of their much different monetary and public-finance systems.

This does not mean that systems without a sovereign currency are completely unworkable or do not bring prosperity to many nations. The key alternative to a sovereign-nation currency with a floating exchange rate is well represented by a handful of export powerhouses, such as Germany, which are part of currency blocs or attempt to maintain strong national currencies. Rather than relying on a central bank to be a big buyer of sovereign debt, countries in this second group must essentially work to maintain demand for their currency and/or debt securities. At worst, this leads to vigorous and almost fanatical efforts to market exports and attract foreign investors. (Multinational corporations, which need to repatriate profits to their shareholders, are a bit of a wildcard in this process, as they are active in foreign exchange markets, but transfer much currency internally, where transactions are not always readily observed by economists.)

At best, countries lacking their own money must work within the bounds of what economists sometimes refer to as an “exchange rate constraint.”

The need to maintain exchange rate pegs causes a policy focus on improving the competitiveness of their export industries, including not just undervalued currencies, but also efforts to reduce wages, develop new products, and increase productive efficiency. These imperatives often force countries to go to great lengths to subsidize export industries. This is an effort to make exports more attractive without devaluing the currency. One thinks of the brutality with which some late-developing countries handled efforts to organize labor, their nonchalance about accumulating large amounts of US liabilities, and heavy subsidies given by mercantilist governments to export leaders.

A variant of this strategy is often seen when countries approach default and seek help from the International Monetary Fund and other international financial institutions. As a result of agreements made when the Greek rescue package was negotiated, Prime Minister George Papandreou has announced drastic plans to deregulate the economy, reduce wages and pensions, cut government spending in general, and subsidize industry, further squeezing social expenditures. Since the rescue is intended to keep Greece within the eurozone, the country cannot respond to its fiscal problems by devaluing its currency in nominal terms; hence, to achieve a better current account balance, it must reduce industries' labor costs, which is not politically easy and threatens the living standards of Greeks. Numerous other European countries are unfortunately taking the same tack, either out of an intellectual rejection of Keynesianism or because they must work within the constraints imposed by the European Commission and ECB.

From a macroeconomic standpoint, one problem with a strategy emphasizing export promotion is its futility when numerous countries contest a saturated market. The eurozone is an example of what can happen in this case. Germany has continued to be an export leader since unification, and various other European countries have succeeded for a time in gaining an upper hand in the old Common Market and then the EU. These policies have been necessitated by very tight monetary policy, first at the hands of the German central bank and other national banks, and then authored by the ECB. But of

course, the obverse of this coin is the large number of European countries that do not have huge, efficient export industries.

Part of the blame for the Greek crisis can be laid at the door of stiff and unrelenting competition among economies with access to the European market. All countries in a common market cannot win in such a competition. In fact, they may all lose, since there are strong forces encouraging each country to achieve real devaluation by reducing domestic demand. Once such a race to the bottom starts, both domestic and foreign markets evaporate. Indeed, growth has been weak in the euro area since the introduction of the common European currency, owing to the policy handcuffs imposed by the ECB and so-called Maastricht deficit and debt limits.

In the 1980s, President Mitterand of France was forced by the threat of a currency collapse to abandon ambitious plans to achieve a more just society. In the depressed agricultural economy of the late 1800s, many US farmers could not obtain credit, largely because of the rigors of the gold standard, leading to populist demands for nonconvertible “greenbacks” (paper money that would not have to be backed up with gold reserves) or at least silver coinage. Problems of this sort in nations, regions, and industries without good export markets have usually led to even harsher measures everywhere to maintain foreign demand in the face of general economic depression.

On the other hand, circumstances often force the adoption of a currency peg or even the internal use of a foreign currency. For example, consider a country such as Luxemborg. With its tiny population and geographic area, such a country lacks the ability to produce more than a small fraction of the products it needs. At the same time, domestic industry needs access to a large foreign market to justify investment in new technologies and large, efficient manufacturing plants. Foreign trade accounts for such a large percentage of GDP in such small open economies that a complex and risky process of trading currency to carry on routine transactions amounts to a burdensome cost for the overall economy.

Another key reason that countries have not used flexible or floating currencies is that they have experienced hyperinflation in the past when they had the freedom to set their own macro policies. Committing to an exchange-rate peg or use of a “hard”

currency such as the dollar is seen as one way of insuring that the government will not be tempted to print and spend huge amounts of money. Indeed, this is how Argentina's ill-fated peg to the dollar began—as an effort to prevent future hyperinflation, imposed largely by the fiscally conservative IMF. Some point out that gold standards, fixed exchange rates, currency boards, and the like have rarely lasted long, especially in developing countries. Often a commitment to a currency peg is just as easily abandoned as any tight-money policy. Reinhart and Rogoff argue that many countries develop somewhat unshakable reputations for default and devaluation and then rarely find it in their interest to defend their currencies when the cost of doing so is steep. Even austerity measures that cripple aggregate demand are insufficient to establish a credible currency policy for such governments and hence are not worth adopting unless policymakers are willing to take a very long-term perspective on policy decisions. Of course, there are other reasons why stable exchange-rate regimes cannot easily be established in most countries, including difficulties coordinating such efforts among countries and maintaining strong economic growth. Also, what is possible for a subset of countries is not always achievable by all countries simultaneously.

For nations that do not adopt a soft currency stance merely by default, why brave the rigors of a fixed exchange rate or similar policy? After all, have we not painted an inviting picture of an endless source of wealth, namely a printing press that makes life much easier in countries with their own national currencies?

Indeed, some read Keynesian works and wonder if the authors imagine that the availability of a soft-money option implies that no country need ever have difficulty feeding its people. But this is hardly the case. For example, no amount of money can solve problems like pestilence, droughts, and soil erosion unless some technology exists to do so. There is no reason to believe that these problems, and others like them, are forever banished from even prosperous countries. Some things just cannot be done, and some require far too many hours of labor and tons of materials to be practical. It then goes without saying that the state's ability to create its own money certainly cannot generate unlimited wealth, for the same kinds of reasons. Keynesians simply do not believe that government spending is a panacea, offering unlimited benefits with no costs.

On the other hand, we have a much more pessimistic view than anti-deficit economists of the health of the economy as it exists now.

A related limitation of policies that make liberal use of a state-backed monetary system is that beyond a certain point, readily available credit is likely to lead to overinvestment in dubious and relatively unproductive endeavors, particularly when financial regulations are lax or few important innovations are being made. Financial institutions are likely to recognize this and attempt to ration credit more tightly when interest rates are especially low. Many times credit rationing will be done in a way that is inequitable or inefficient or appears to be so. Also, in a credit-dependent economy, consumers are often bothered by worries about their retirement years and possible bankruptcy. Meanwhile, they wonder when and if taxes will rise in the future.

Finally, countries with declining currencies face a problem few have heard of called the terms-of-trade effect. As US dollars buy fewer euros, Americans will pay more for European vacations and imported goods. It may be difficult to begin producing reasonably priced domestic substitutes for some European exports.

POLICY RECOMMENDATIONS

In short, fears about deficit spending and the monetary and fiscal system that allows it are misplaced and draw attention away from the real policy issues in macroeconomics. This is especially true in parts of the world where governments are committed to some form of “hard-money” system, such as in the eurozone.

For fiscally troubled European nations, the current situation seems to require either a withdrawal from the euro or a sharp reduction in unit production costs to regain competitiveness. One can only hope that some other choice becomes available. When price indexes fall, rarely do economies recover, though indeed export competitiveness increases. There are many reasons why deflation tends to lead to economic stagnation or depression, many of which were discussed by John Maynard Keynes (1936) and later James Tobin (1980). Moreover, this stagnation tends to be exported to other countries, where manufacturers find that their markets are shrinking. Hence, efforts to reduce

public-sector wages and cut government spending are counterproductive, as Keynes argued. On the other hand, if European governments take this penurious route, it seems only consistent that they would not increase subsidies to industry, as recently proposed in Greece.

On the other hand, as long as the fiscally troubled economies of Europe keep the euro, their hands are tied and they simply must reduce spending. This will likely lead to deep recessions in countries that implement draconian cuts in hopes of meeting the criteria to stay within the eurozone. (Britain is a country that does not face these constraints, but would be freer to use fiscal and monetary stimulus if the eurozone were also doing so. As it is, UK policymakers may want to avoid sharp devaluation vis-à-vis the euro.)

Most of the major economies of Europe have lashed themselves to the mast with a commitment to monetary union. The concept of the union is sound, and we cannot discuss the costs and benefits of the single European currency in depth here. But unfortunately, the EU has carried out this vision in a way that makes the euro into a deflationary burden on the entire continent. Bibow (2009) and Papadimitriou, Wray, and Nersisyan (2010) discuss many of the limitations of the “Maastricht regime.” Most importantly, these include a bias toward monetary tightening and institutional framework that does not permit a coordinated use of expansionary fiscal policy. Now would be a good time to revisit these issues, though they demand a difficult process of reexamining the agreements that bind the union together. The most essential reform would be a means of lending the euro printing press, so to speak, to countries in the midst of recession or fiscal crisis. We remain utterly unconvinced that that the current round of budget cutting to meet eurozone requirements will lead to anything but a deflationary spiral in a number of European economies, along with a continuation of the recent upward trend in unemployment rates. Already, there are signs that recent austerity measures in Portugal will only increase its government’s fiscal deficit, a consequence of falling tax revenue and rising social security spending. Indeed, Portugal’s central government lost ground in the first nine months of this year, as its deficit rose by about \$280 million (Wise 2010). Under the country’s current agreement with the European Commission, this will lead to

yet more deflationary spending cuts and tax increases. In the event that this vicious cycle cannot be brought under control and the eurozone monetary institutions reformed, one has to allow for the possibility that the monetary union would have to be dissolved. Indeed, under the terms of the founding agreements of the union, it is very difficult for individual members to back out of their commitment to the euro.

We return to the question with which we motivated this paper at the beginning: in using the printing press, together with the federal government's legal ability to spend more than it takes in each year, to help cure the recession and the economic stagnation that has followed it, are we as a country putting ourselves at risk for a fiscal crisis? Having dismissed this concern, we wish to recommend some policies that seem, from our perspective, to follow from our answer to this question and the rest of the analysis in this paper.

Not surprisingly, based on the foregoing analysis, we would argue that there are few "affordability" constraints on further Keynesian stimulus or government debt. *We certainly think that there are limits to fiscal stimulus, posed mostly by the scarcity of some real resources, especially at times when demand is already sufficient.* However, these are irrelevant now. Much of the US economic policy establishment is in agreement with this point now, because of national unemployment rates that remain stuck at nearly 10 percent. Christina Romer (2010), until recently the head of the Council of Economic Advisers, asks readers of the *New York Times* to "imagine a patient with a slow-growing tumor who is also recovering from pneumonia. The outcome is likely to be worse if the patient is not given time to recover before undergoing surgery." We have tried our hand at formulating some concrete suggestions in a number of publications, such as our most recent proposal for the creation of jobs providing care for young children and the elderly, sick, and disabled (Antonopoulos, Kim, Masterson, and Zacharias 2010).

As suggested by the analysis above, we think some form of capital controls might be useful to some economies for at least two reasons (Grabel 2000). First, some relatively mild restrictions on foreign financial investment would reduce the tendency for financial markets to punish the expansionary policies that the current situation demands. So far, such tendencies have not manifested themselves, but measures such as taxes on capital

flows might prevent problems from developing in the future. The Chinese development miracle is but one example of how rapid growth can be fostered behind strong barriers to international investment. The second reason for some restrictions on international capital movements is to reduce the fragility of foreign exchange and other financial markets. To this end, it might be advantageous to impose some form of tax on trades of foreign currency or other key financial assets, as this might help stop a selloff of the dollar or another currency from quickly turning into a rout, in a manner similar to the circuit breakers already used in some markets.

Thinking more ambitiously, the international financial system might be thoroughly reformed in order to fight international financial imbalances and destabilizing movements of “hot money.” Such a plan should force countries that run chronic current account surpluses to bear some of the responsibility for generating more aggregate demand, as Keynes proposed after World War II (Davidson 2002). An international framework of this type would be a concession to the reality of a multipolar world, in which leaders can no longer “try to settle currency disputes over dinner” (Wessel 2010).

Until a new financial architecture is in place, many individual countries will resort to devaluations and other “beggar-thy-neighbor” policies to stimulate their economies at the expense of their competitors. Within such an environment some governments that are attempting to use Keynesian aggregate demand management have come to be seen as fomenting “currency wars.” On the other hand, these latter countries will have to provide demand for much of the rest of the world’s output, relying upon either large and growing deficits or unsustainable rates of private-sector borrowing to finance their imports. There will be a great risk of yet another asset bubble, financed at rock-bottom interest rates. In an unbalanced world economy without internationally coordinated economic policies, a nominal devaluation may be the least harmful mechanism for reducing a large current account deficit. If this is necessary in any country, the United States surely qualifies, though the recent, market-driven devaluation has already accomplished part of the needed adjustment against most currencies. Fred Bergsten has called for a more activist approach to exchange rate policy: “countervailing currency intervention,” in which each Chinese purchase of US currency would be met with a “tit-for-tat” US investment in renminbi

futures or Chinese debt securities, authorized by the IMF (2010). We believe that in accordance with World Trade Organization agreements, any policy intervention targeting international trade should be “nondiscriminatory,” meaning that it would not single out any particular product for trade restrictions. Doing so would affect the relative prices of individual goods and services, which should not be the aim of macro policies.

On the other hand, as Martin Wolf puts it, “an adjustment in the nominal exchange rate is neither a necessary or sufficient condition for a rebalancing of the world economy: not necessary, because higher inflation could bring about changes in relative prices, instead; not sufficient, because it would still require an increase in domestic spending, relative to output. At most, therefore, an adjustment in the nominal exchange rate is a facilitator of a wider set of desired adjustments” (Wolf 2010). One should not forget that the greatest need at a time of worldwide economic stagnation is for an adjustment of the entire global economy, toward fuller employment and away from the precipice of deflation. As one wag put it, the world is a closed economy—at least so far.

REFERENCES

- Antonopoulos, R., K. Kim, T. Masterson, and A. Zacharias. 2010. "Why President Obama Should Care About 'Care': An Effective and Equitable Investment Strategy for Job Creation." Public Policy Brief No. 108. Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.
- Atkins, D., and D. Oakley. 2010. "Fears Grow over Banks Addicted to ECB Funding." *Financial Times*, September 14.
- Bagehot, W. 1991 [1873]. *Lombard Street: A Description of the Money Market*. Philadelphia, PA: Orion Editions.
- Benson, T. 2004. "Report Looks Harshly at IMF's Role in Argentine Debt Crisis." *New York Times*, July 30.
- Bergsten, F. 2010. "We Can Fight Fire with Fire on the Renminbi." *Financial Times*, October 3.
- Bibow, J. 2009. "The Euro and Its Guardian of Stability: The Fiction and Reality of the 10th Anniversary Blast." Working Paper 583. Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.
- Congressional Budget Office (CBO). 2010. "Federal Debt and the Risk of a Fiscal Crisis." Economic and Budget Issue Brief. Washington, DC: CBO. July 27. www.cbo.gov/ftpdocs/116xx/doc11659/07-27_Debt_FiscalCrisis_Brief.pdf
- Davidson, P. 2002. *Financial Markets, Money, and the Real World*. Northampton, MA: Edward Elgar.
- FT Reporters. 2010. "Risk of Currency War Rises after Thai Tax Move." *Financial Times*, October 13.
- Gabel, I. 2000. "Identifying Risks, Preventing Crisis: Lessons from the Asian Crisis." *Journal of Economic Issues* 34(2): 377–383.
- Harding, R., and M. MacKenzie. 2010. "US Fed to Pump in Extra \$600 Billion." *Financial Times*, November 11.
- International Monetary Fund (IMF). 2010. World Economic Outlook Database, April. www.imf.org/external/pubs/ft/weo/2010/01/weodata/index.aspx
- Kapner, S. 2010. "Fannie and Freddie 'Could Cost US \$363 Billion.'" *Financial Times*, October 22.

- Keynes, J.M. 1936. *The General Theory of Employment, Interest and Money*. New York: Harcourt, Brace, and Co.
- Koeppen, N. 2010. “New Curbs for Weak Banks on Borrowings from ECB.” *Wall Street Journal*, October 11.
- Lucas, R. 2003. “Macroeconomic Priorities.” *American Economic Review* 93: 1–14.
- Luce, E., and J. Lamont. 2010. “Obama Defends QE2 ahead of G20.” *Financial Times*, November 11.
- Meier, A. 2010. “Still Minding the Gap—Inflation Dynamics during Episodes of Persistent Large Output Gaps.” Working Paper 10/189. Washington, DC: International Monetary Fund (IMF).
- Minsky, H.P. 2008 [1986]. *Stabilizing an Unstable Economy*. New York: McGraw-Hill.
- Nersisyan, Y., and L.R. Wray. 2010. “Does Excessive Sovereign Debt Really Hurt Growth? A Critique of *This Time Is Different* by Reinhart and Rogoff.” Working Paper 603. Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.
- Oakley, D., and K. Hope. 2010a. “Greece Admits It Has a Long Way to Go.” *Financial Times*, September 16.
- . 2010b. “Greece Rejects Debt Restructuring for Dangers It Poses to Eurozone.” *Financial Times*, September 16.
- Papadimitriou, D.B., L.R. Wray, and Y. Nersisyan. 2010. “Endgame for the Euro? Without Major Restructuring, the Eurozone Is Doomed.” Public Policy Brief No. 113. Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.
- Reinhart, C., and K. Rogoff. 2009. *This Time Is Different: Eight Centuries of Financial Folly*. Princeton, NJ: Princeton University Press.
- . 2010. “Debt and Growth Revisited.” Munich Personal Repec Archive Paper 21376. <http://mpira.ub.uni-muenchen.de/24376/>
- Rich, J.L. 2002. “Argentina Peso Sinks to New Lows as Crisis Continues.” *New York Times*, January 17.
- Rohter, L. 2002. “The World: Giving Argentina the Cinderella Treatment.” *New York Times*, August 11.
- Romer, C. 2010. “Now Isn’t the Time to Cut the Deficit.” *New York Times*, October 24.

- Tobin, J. 1980. "Real Balance Effects Reconsidered." in *Asset Accumulation and Economic Activity: Reflections on Contemporary Macroeconomic Theory*. Chicago: University of Chicago.
- Wessel, D. 2010. "Weaker Dollar Is No Elixir for Economy." *Wall Street Journal*, October 20.
- Wise, P. 2010. "Portugal's Deficit Target in Peril." *Financial Times*, October 22.
- Wolf, M. 2010. "How to Fight the Currency Wars with Stubborn China." *Financial Times*, October 5.
- Wray, L.R. 1998. *Understanding Modern Money*. Northampton, MA: Edward Elgar.